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FINAL RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION REPORT FOR SOLID WASTE MANAGEMENT UNITS 303 AND 318 MCB CAMP LEJEUNE NC

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CH2M HILL

Final

SWMUs 303/318
RCRA Facility Investigation Report

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Camp Lejeune, North Carolina

Prepared for

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Baker
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FINAL

SWMUs 303/318
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ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
ARARs	Applicable or Relevant and Appropriate Requirements
ASTM	American Society for Testing and Materials
AT	Averaging Time
ATSDR	Agency for Toxic Substance and Disease Registry
Baker	Baker Environmental, Inc.
bgs	below the ground surface
BERA	Baseline ERA
BTAG	Biological Technical Assistant Group
BTEX	benzene, toluene, ethylbenzene, xylenes
$CaCO_3$/L	Calcium Carbonate per Liter
CCME	Canadian Council of Ministers of the Environment
CDIs	Chronic Daily Intakes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLEAN	Comprehensive Long-Term Environmental Action Navy
CLP	Contract Laboratory Program
CNO	Chief of Naval Operations
COPCs	Chemicals of Potential Concern
CRAVE	Carcinogen Risk Assessment Verification Endeavor
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
CSFs	Cancer Slope Factors
CSI	Confirmatory Sampling Investigation
CT	Central Tendency
CTO	Contract Task Order
DADs	Dermally-Absorbed Doses
DCE	Dichloroethene
DoN	Department of the Navy
DOT	United States Department of Transportation
Eco-SSL	Ecological Soil Screening Level
EF	Exposure Frequency
EnSafe	Environmental Safety and Designs, Inc.
ERA	Ecological Risk Assessment
ET	Exposure Time
ft/d	feet per day
gpm	Gallons Per Minute
gpd	Gallons Per Day
GPS	Global Positioning System
HA	Health Advisories
HEAST	Health Effects Assessment Summary Table
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
HSWA	Hazardous and Solid Waste Amendments

ACRONYMS AND ABBREVIATIONS
(Continued)

ID	Inside Diameter
ILCR	Incremental Lifetime Cancer Risk
IDW	Investigation Derived Waste
IEUBK	Integrated Exposure Uptake Biokinetic
ILM	Inorganic Low Medium
IMAC	Interim Maximum Allowable Concentrations
IR	Installation Restoration
IRIS	Integrated Risk Information System
J	Estimated Result
2L Standards	North Carolina Water Quality Standards for Groundwater
MCAS	Marine Corps Air Station
MCB	Marine Corps Base
MCLGs	Maximum Contaminant Levels Goals
MDL	Maximum Detection Limit
mg/kg	Milligrams per Kilogram
MHSPE	Ministry of Housing, Spatial Planning and Environment
msl	Mean Sea Level
NAWQC	National Ambient Water Quality Criteria
NCAC	North Carolina Administrative Code
NC DENR	North Carolina Department of Environment and Natural Resources
NCEA	National Center for Environmental Assessment
NCWQS	North Carolina Water Quality Standards
NPL	National Priorities List
NTUs	Nephelometric Turbidity Units
OEPA	Ohio Environmental Protection Agency
OSWER	Office of Solid Waste and Emergency Response
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PEF	Particulate Emission Factor
PRGs	Preliminary Remediation Goals
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
RAC	Remedial Action Contractor
RAGS	Risk Assessment Guidance for Superfund
RCRA	Resource Conservation and Recover Act
RfC	Reference Concentration
RfDs	Reference Doses
RFA	RCRA Facility Assessment

ACRONYMS AND ABBREVIATIONS
(Continued)

RFI	RCRA Facility Investigation
RI	Remedial Investigation
RME	Reasonable Maximum Exposure
RPD	Relative Percent Difference
SAs	Surface Areas
SAF	Skin Adherence Factor
SLERA	Screening Level Ecological Risk Assessment
SOW	Statement of Work
SQL	Sample Quantitation Level
SSSVs	Surface Soil Screening Values
STGCs	Soil-to-Groundwater Concentrations
S.U.	Standard Units
SVOCs	Semi-Volatile Organic Compounds
SW	Solid Waste
SWMUs	Solid Waste Management Units
SWSVs	Surface Water Screening Values
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
TSD	Treatment, Storage, and Disposal (Facility)
the Base	Marine Corps Base Camp Lejeune
the SWMU	Solid Waste Management Units 303/318
TICs	Tentatively Identified Compounds
U	Not Detected
UCL	Upper Confidence Limit
µg/L	Micrograms per Liter
USGS	United States Geological Survey
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds
VKT	Vehicle Kilometers Traveled
WQPs	Water Quality Parameters

EXECUTIVE SUMMARY

This report presents the investigation procedures and results of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at Solid Waste Management Units (SWMUs) 303/318 at Marine Corps Base (MCB) Camp Lejeune, North Carolina (the Base). The primary goal of this RFI is to adequately characterize the SWMUs and determine the potential for future corrective action (if any) based on risks to human health and the environment. Specifically, the field information generated during the RFI was used to meet the following objectives:

- Supplement and/or verify the environmental setting at the SWMUs, including hydrogeology, geology, hydrology, topography, aquifer characteristics, and any other anthropogenic influences that may affect the hydrology or contaminant pathways at the SWMUs.

- Characterize the source of contamination through collection of analytical data, and evaluate the migration and dispersal characteristics of the contamination.

- Characterize the extent, origin, direction, and rate of movement of contamination through collection of soil and groundwater samples in the vicinity of the SWMUs.

- Evaluate potential receptors by collecting data describing human populations and environmental systems susceptible to contaminant exposure.

- Evaluate the risk of any contaminants associated with the SWMUs to human health and the environment.

- Provide recommendations for site management.

SWMUs 303/318 are located in the Marine Corps Air Station (MCAS) New River area east of Bancroft Street and adjacent to the helicopter wash pad. SWMU 303 consists of two steel, aboveground storage tanks (ASTs) that are contained within a concrete, bermed structure. The tanks were installed in 1983 and are labeled as "Hydraulic Fluid, Engine and Transmission Oils Only, No Solvents or Other Chemicals". SWMU 318 is a concrete, multi-chambered oil/water separator and grit chamber associated with the helicopter wash pad. The primary function of

SWMU 318 is to collect water, soap, oil, grease, and dirt from the wash pad; separate the solids from the liquids; and then segregate the oil and grease from the remaining liquids. The helicopter wash pad is constructed with concrete with two drains that collect the runoff and the associated piping transfer the liquids to the oil/water separator (SWMU 318). The area surrounding the SWMUs and the wash pad is covered with grass. An open drainage ditch that collects stormwater run-off from the surrounding area is located east of the oil/water separator.

The RFI for these SWMUs was conducted during three distinct phases. The initial investigation was conducted from February through April, 2004. A second phase of investigation was conducted during the month of June 2004, and the third phase was conducted from February through March, 2005. A total of twenty-nine (29) soil borings were advanced during the three phases of the RFI for the purpose of collecting surface and subsurface soil samples. Groundwater samples were collected from fifty-one (51) groundwater grab borings in an attempt to determine the nature and extent of contamination, and to optimize monitoring well design with regard to screen placement. A total of eleven (11) groundwater monitoring wells were installed during the RFI investigation. Three monitoring wells were installed during the first phase and eight were installed during the third phase. In addition to the eleven newly installed monitoring wells, data collected from fifteen existing wells that were installed during the investigative activities at IR Site 86 were used to help evaluate groundwater conditions in the vicinity of the site. Slug tests were conducted, subsequent to groundwater sampling, at four of the newly installed intermediate monitoring wells, two of the existing intermediate monitoring wells, and at the three newly installed deeper wells.

Soil and groundwater grab samples were analyzed in the field by Columbia Technologies for the first phase of the RFI, Sentinel Laboratories provided these services during the second phase, and New Age/Landmark Mobile Laboratory Services during the third phase. Each of these laboratories analyzed the grab samples for TCL VOCs using GC/MS methods (Solid Waste [SW] 846 Method 8260B).

Samples collected for chemical analyses at a fixed-based laboratory were delivered by Federal Express to Katahdin Analytical Services, Inc. These samples were analyzed for one or more of the following analytical suites in accordance with the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) or SW846 Methods:

- TCL VOCs using Organic Low Medium (OLM) 04.2/04.3
- TCL VOCs using SW846 method 8260B
- TCL SVOCs using OLM 04.2/04.3
- RCRA Metals using Inorganic Low Medium (ILM) 04.1/6010B/7470A

These parameters were selected based on chemicals of potential concern (COPCs) identified during the Phase I and Phase II Confirmatory Sampling Investigations (CSIs). The groundwater samples were also analyzed in the field for the following water quality parameters (WQPs): pH, specific conductance, dissolved oxygen, temperature, and turbidity.

Shelby Tube samples were delivered to PW Laboratories, Inc. in East Syracuse, New York and analyzed for the following parameters:

- Grain Size – Sieve and Hydrometer using American Society for Testing and Material (ASTM) D422 and D1140
- Atterberg Limits using ASTM 4318
- Flex-Wall Permeability using ASTM D5084
- Moisture Content using ASTM D2216
- Specific Gravity using ASTM D854

To assist in evaluation of the laboratory analytical results and extent of contamination, the concentrations of constituents detected in soil were compared to USEPA Region IX Preliminary Remediation Goals (PRGs) and North Carolina Soil-to-Groundwater Concentrations (STGCs). Concentrations of constituents detected in groundwater were compared to North Carolina Water Quality Standards for Groundwater (2L Standards) and USEPA Region IX Tap Water PRGs. As a secondary comparison, metals detected in soil and groundwater at concentrations exceeding the regulatory-driven screening criteria (e.g., PRGs, STGCs, 2L Standards) were compared to Base-wide and/or AOC-specific background screening values.

The extent of soil contamination in the vicinity of the wash pad is based on soil COPCs from the RFI and includes naphthalene, isopropylbenzene, and butylbenzene. Concentrations of butylbenzene that exceeded the NC STGC in surface soils are located beneath the concrete wash pad on the western end. There were no detections of this constituent in the subsurface soils at

concentrations exceeding the comparison criteria and the extent of this compound appears to be delineated both horizontally and vertically. Isopropylbenzene was detected in surface soils collected near the eastern end of the wash pad; however concentrations detected in subsurface soil samples did not exceed the NC STGC, providing evidence that it is vertically delineated.

Naphthalene was detected in the surface soils beneath the wash pad and detectable concentrations above screening criteria in subsurface soils are scattered. Even so, the extent of naphthalene in soil is generally bounded. The exception is at soil boring SWMU318-SB03, where the extent is unbounded to the south. However, it is possible since the detection of naphthalene was not observed in the intermediate soil sample from this boring, that the detection of this compound in the deep sample may be the result of groundwater contamination and not the result of soil contamination that has migrated from the surface.

The constituents of potential concern (COPCs) in groundwater in the vicinity of the SWMUs and wash pad includes benzene, naphthalene, TCE, cis-1,2-DCE, and vinyl chloride. These five COPCs represent the highest and most-frequent detections above the NC STGC.

Contamination concentrations in shallow groundwater (10 to 14 feet bgs) are relatively low compared with other depth intervals. The highest detections of both benzene and naphthalene were observed at borings on the west and east sides of the wash pad. Both plumes have a west to east trend with the majority of the constituents concentrations being detected beneath Building AS515. TCE concentrations in the shallow groundwater are distributed in a bi-nodal pattern. But much like benzene and naphthalene, the distribution of this constituent has a west to east trend. The extent of cis-1,2-DCE in shallow groundwater is broader than TCE, which is expected given it is a degradation product of TCE and is also more mobile. The positive detections of vinyl chloride are limited to SWMU318-GW06, which also exhibits TCE and cis-1,2-DCE concentrations above NC 2L Standards. Contamination in shallow groundwater has generally been sufficiently bounded horizontally. The only exception is the detection of TCE in the groundwater sample collected from SWMU318-MW07.

The highest concentrations and most extensive levels of contamination are observed in the intermediate groundwater interval (25- to 34-feet bgs). The highest level of benzene (above 100 ppb) occurs at boring SWMU318-GW15, immediately below a shallow groundwater “hot spot”. As with the shallow plume, the intermediate plume for this constituent trends west to east in the vicinity of the SWMUs and the wash pad, and also to the north and northeast indicating that

predominant groundwater flow is affecting the shape of the plume. The highest level of naphthalene (above 1,000 ppb) in the intermediate groundwater interval also occurs in the vicinity of boring SWMU318-GW15 and again tends to have a west to east trend like its shallow counterpart.

TCE contamination in the intermediate zone is extensive. The highest levels of TCE are just north of Building AS515, the SWMUs, and the washpad. Given the predominant northeasterly groundwater flow direction, it is apparent that TCE has encroached on Site 86 and is commingling with Site 86 groundwater contamination. The extent of cis-1,2-DCE is similar to TCE, but its concentrations are lower (less than 1,000 ppb). Cis-1,2-DCE also commingles with groundwater contamination at Site 86. The extent of vinyl chloride is similar to cis-1,2-DCE but at lower concentrations than cis-1,2-DCE (generally less than 100 ppb). Elevated detections appear somewhat scattered but a west to east trend is again noticeable.

The concentrations of the five constituents observed in the intermediate groundwater zone are significantly lower in samples collected from the deepest sampled interval (40 to 44 feet bgs); however, detections are still above NC 2L Standards for some constituents. Benzene and naphthalene were detected in a few samples collected from this interval. An interesting pattern was observed in the deepest groundwater interval. Spotty detections of benzene, naphthalene, and TCE indicate that the semiconfining unit (Belgrade formation) may be letting contamination travel downward in localized areas and yet holding it back in other areas.

Current land use scenarios that were evaluated in the baseline Human Health Risk Assessment (HHRA) for SWMUs 303/318 include the military Base personnel. There were no unacceptable carcinogenic risks or adverse noncarcinogenic hazard levels calculated that exceeded USEPA's acceptable criteria for the current military Base personnel or future adolescent trespasser.

Based on the quantitative results of the baseline HHRA, unacceptable risk was calculated for future residents and the future construction worker upon exposure to shallow and intermediate groundwater zones, and for future residents upon exposure to deep groundwater investigated at the SWMU. However, it should be noted that it is unlikely that the shallow/intermediate groundwater at the SWMU would be used as a potable water source, and consideration should be given to the conservatism added to the groundwater exposure evaluation.

Limited terrestrial habitat is present at SWMUs 303/318. This habitat is a maintained lawn area, which is a highly modified low-quality habitat. Of the 101 chemicals identified as ecological COPCs in surface soil based on Steps 1 and 2 of the screening level ERA, two VOCs (1,2-dichlorobenzene and 1,4-dichlorobenzene), two SVOCs (bis[2-ethylhexyl]phthalate and butylbenzylphthalate), and two inorganic constituents (cadmium and chromium) are considered ecological risk drivers at SWMUs 303/318 based on the results of Step 3a. The removal of contaminated soils from the vicinity of SWMU318-SS01 and SWMU318-IS02 would eliminate unacceptable risk to terrestrial receptors at SWMUs 303/318. In the case of bis(2-ethylhexyl)phthalate and cadmium, the removal of these soils would result in mean site concentrations below toxicity based screening values, indicative of acceptable population level risk.

Aquatic habitat at the site was limited to the drainage way east of the oil/water separator. The potential for groundwater to pose a risk to this habitat was evaluated assuming discharge of the water to the drainage way with no dilution or natural attenuation. Of the 93 chemicals identified as groundwater ecological COPCs in the screening-level ERA, none of the chemicals are estimated to pose unacceptable risks to ecological receptors that may inhabit the drainage area, and no further evaluation is recommended. The potential for shallow and intermediate groundwater to impact off-site aquatic habitat via migration and discharge was evaluated in conjunction with the RI conducted at Site 86 (Baker, 2003); this evaluation concluded that no additional evaluation of groundwater was warranted for the protection of off-site ecological receptors.

Recommendations for these SWMUs include the removal of contaminated soil from beneath the wash pad. Groundwater contamination should be further investigated to determine the source of the chlorinated contamination, and remediated in conjunction with the remedial efforts associated with IR Site 86.

1.0 INTRODUCTION

This report presents the investigation procedures and results of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at Solid Waste Management Units (SWMUs) 303 and 318 (SWMUs 303/318) at Marine Corps Base (MCB) Camp Lejeune, North Carolina (the Base). The investigations of these two SWMUs were combined into one RFI because of their close proximity and constituents of concern (i.e., semivolatiles and metals). The SWMU location at the Base is depicted on Figure 1-1. This report has been prepared by Baker Environmental, Inc. (Baker) under Contract Task Order (CTO) 0091 of the Department of the Navy's (DoN's) Comprehensive Long-Term Environmental Action Navy (CLEAN) Program. Baker was subcontracted to CH2M Hill for implementation of this project.

1.1 Regulatory History

The Base was issued a RCRA Part B Permit to operate a hazardous waste container storage facility in September 1984. This permit was issued before enactment of the Hazardous and Solid Waste Amendments of 1984 (HSWA), which under Section 3004(u) empowers the United States Environmental Protection Agency (USEPA) to order corrective action at treatment, storage, and disposal (TSD) facilities. This section of the HSWA requires corrective action to be taken for all releases of hazardous waste or hazardous constituents from any SWMU. As a result, a revised Hazardous Waste Management Permit was issued on January 10, 1997 and included corrective actions for SWMUs.

The USEPA Region IV and the North Carolina Department of Environment and Natural Resources (NC DENR) conducted an initial RCRA Facility Assessment (RFA) at the Base in January 1989. The RFA included 76 SWMUs. Seven of the SWMUs required confirmatory sampling; 23 of the SWMUs required an RFI; 46 of the SWMUs required no further action. The initial RFA was later expanded to include units such as landfills, surface impoundments, waste piles, tanks, container storage areas, septic tanks, drain fields, waste treatment units, and storm water conveyances. More than 3,500 SWMUs were identified during a preliminary review of Base records. Visual site inspections were conducted at nearly 500 of these SWMUs. SWMUs 303 and 318 were two of the SWMUs evaluated during these visual site inspections. The findings from the RFA are presented in RCRA Facility Assessment Report for Marine Corps Base, Camp Lejeune, North Carolina (Environmental Safety and Design, Inc. [EnSafe], 1996).

The 1996 RFA Report identified 41 Installation Restoration (IR) Program sites, 112 underground storage tank (UST) sites, and 56 SWMUs that required confirmatory sampling or corrective measures. Based on further negotiations between NC DENR and the Base, 62 SWMUs required confirmatory sampling. The Confirmatory Sampling Investigation (CSI) was completed in two phases. Phase I was conducted by Baker in 1997 and included a soil investigation in the vicinity of these 62 SWMUs. Phase II was conducted by Baker in 2002 and 2003 and included additional soil sampling and a groundwater investigation at 41 of the SWMUs that warranted additional investigation at the conclusion of Phase I. In addition, six new SWMUs were included in the Phase II CSI thus increasing the number of SWMUs to 47. Of these 47 SWMUs, it was recommended that 30 SWMUs required no further action, five SWMUs required interim measures, one SWMU required an RFI/interim measures, and 11 SWMUs required RFIs. The findings from the Phase I and II CSIs are presented in the Phase I Confirmatory Sampling Report (Baker, 2001) and Final Phase II Confirmatory Sampling Report (Baker, 2005).

1.2 SWMU Description and History

SWMUs 303/318 are located in the Marine Corps Air Station (MCAS) New River area east of Bancroft Street and adjacent to the helicopter wash pad. SWMU 303 consists of two steel, aboveground storage tanks (ASTs) that are contained within a concrete, bermed structure. The tanks were installed in 1983 and are labeled as "Hydraulic Fluid, Engine and Transmission Oils Only, No Solvents or Other Chemicals". SWMU 318 is a concrete, multi-chambered oil/water separator and grit chamber associated with the helicopter wash pad. The primary function of the SWMU 318 is to collect water, soap, oil, grease, and dirt from the wash pad; separate the solids from the liquids; and then segregate the oil and grease from the remaining liquids. The helicopter wash pad is constructed with concrete with two drains that collect the runoff and the associated piping transfer the liquids to the oil/water separator. The area surrounding the SWMU is covered with grass. An open drainage ditch that collects stormwater run-off from the surrounding area is located east of the oil/water separator.

Aircraft are taxied and parked on the concrete parking apron located to the south of the wash pad. Building AS515 is located west of the wash pad and is an active aircraft hanger. A map depicting the current conditions at the SWMU is presented as Figure 1-2.

On July 21, 2005, Mr. Ken Cobb (MCB, Camp Lejeune – EMD) spoke with Mr. Frank Cowan, a former Publics Work Officer for MCAS New River regarding past activities in the vicinity of SWMUs 303/318. Mr. Cowan served at New River from 1951 to 1974. Although not an active duty Marine during the time period, Mr. Cowan seemed to remember that the northwest corner of the MCAS tarmac was an area that Marines used to wash aircraft. This area did not contain sewer lines therefore cleaning waters were washed off the concrete into the soils to the north and west. There were drain lines that were located to the north and west of the area as well as water lines in the area of what is now the wash pad. This was verified on a 1959 water distribution plan obtained from Mr. Cowan.

Based on discussions with Mr. Cowan, it seems logical that since Marines used the area for washing earlier, once a formal wash rack was designed, the logical place to install it would be in the location previously used for these operations. Judging from the stains on the tarmac, spills were likely occurring predominately in the NW corner (possibly during maintenance operations) and subsequently washed into the soils/ditch. POL's, and cleaners/degreasers were more than likely washed into the soils on a regular basis (Figure 1-3).

1.3 Previous Investigations

SWMU 303 – Aboveground Storage Tanks

A Phase I CSI was conducted in September 1997. The purpose of the investigation was to determine if operation of the ASTs has impacted surface and subsurface soils in the vicinity of the SWMU. At the time of the investigation, petroleum staining was noted on the outside of the concrete berm. Surface and subsurface soil samples were collected from four borings advanced around the perimeter of the SWMU. The samples were submitted to the laboratory and analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and RCRA metals. Based on the evaluation of the results, acetone, a few SVOCs, and arsenic exceeded the regulatory-driven screening values as well as the background/secondary screening values (for metals). Therefore, a Phase II CSI was recommended.

The Phase II CSI was conducted in March/April 2002. The purpose of the investigation was to further evaluate potential impacts to soil in the vicinity of the SWMU and determine if groundwater has been impacted as a result of a release(s) from the SWMU. The field investigation included: 1) surface and subsurface soil sampling at two soil borings and three

temporary well borings and 2) groundwater sampling at the temporary wells. The soil and groundwater samples were submitted to the laboratory and analyzed for SVOCs and RCRA metals. In addition, surface soil at location SWMU303-IS04 was re-sampled and analyzed for VOCs to confirm the presence of acetone. Based on evaluation of the results, benzo(a)pyrene and arsenic were detected in soil at concentrations exceeding the regulatory-driven screening values as well as the background/secondary screening values (for arsenic). In addition, SVOCs (4-methylphenol and naphthalene) and metals (arsenic, chromium, and lead) were detected in groundwater at concentrations exceeding the regulatory-driven screening values as well as the background/secondary screening values (for metals). It should be noted that turbidity was elevated in the groundwater samples from the temporary wells and may have caused artificially high metals concentrations in the samples. The elevated turbidity may be attributable to the high percentage of silt encountered during drilling and installation of the temporary wells.

SWMU 318 – AS515 Oil/Water Separator

A Phase I CSI was conducted in September 1997. The purpose of the investigation was to determine if past operation of the oil/water separator has impacted surface and subsurface soils in the vicinity of the SWMU. Surface soil samples were collected from three soil borings advanced around the perimeter of the SWMU. Initially, two soil samples were proposed to be collected from each boring. However, the shallow depth to groundwater precluded collection of deeper samples. One surface soil sample was also collected from the drainage ditch adjacent to the oil/water separator. The samples were submitted to the laboratory and analyzed for VOCs, SVOCs and RCRA metals. Based on the evaluation of the results, a number of VOCs, SVOCs, and metals exceeded the regulatory screening values (i.e., applicable NC DENR and USEPA Region IV criteria) and background/secondary Screening values (for metals). Therefore, a Phase II CSI was recommended.

The Phase II CSI was conducted in March/April 2002. The purpose of the investigation was to further evaluate potential impacts to soil in the vicinity of the SWMU and determine if groundwater has been impacted as a result of a release(s) from the SWMU. The field investigation included: 1) surface and subsurface soil sampling at three temporary well borings, 2) surface soil sampling at two locations within the drainage ditch, 3) groundwater sampling at the temporary wells. The soil and groundwater samples were submitted to the laboratory and analyzed for VOCs, SVOCs, and RCRA metals. Based on evaluation of the results, a number of VOCs, SVOCs, and metals were detected in soil at concentrations exceeding the regulatory-

driven screening values as well as the background/secondary screening values (for metals). In addition, VOCs (benzene, trichloroethene [TCE], and vinyl chloride), SVOCs (4-methylphenol and naphthalene) and metals (arsenic) were detected in groundwater at concentrations exceeding the regulatory-driven screening values as well as the background/secondary screening values (for arsenic). It should be noted that turbidity was elevated in the groundwater samples from the temporary wells and may have caused artificially high concentrations in the samples. The elevated turbidity may be attributable to the high percentage of silt encountered during drilling and installation of the temporary wells.

Helicopter Wash Pad

In 2003, the helicopter wash pad was scheduled to be demolished/replaced. However, during demolition activities, evidence of black petroleum-stained/saturated soils were identified beneath the concrete in the northeast portion of the pad. As a result, the demolition activities were terminated and Shaw Environmental, Inc. (Shaw) capped the area with new concrete to replace the removed concrete.

Summary

Based on the results of the Phase I and Phase II CSIs and observations made during demolition of a portion of the helicopter wash pad, it was evident that soil and groundwater have been impacted as a result of a release(s) from SWMUs 303/318. Therefore, an RFI was required to adequately characterize the SWMUs and determine the potential for future corrective action (if any) based on risks to human health and the environment. As previously discussed, these two SWMUs, as well as the helicopter wash pad, were combined into one RFI because of their close proximity and relationship to each other.

1.4 Purpose/Objectives

The primary goals of this RFI were to adequately characterize the SWMUs and determine the potential for future corrective action (if any) based on risks to human health and the environment. Specifically, the field information generated during the RFI was used to meet the following objectives:

- Supplement and/or verify the environmental setting at the SWMUs, including hydrogeology, geology, hydrology, topography, aquifer characteristics, and any other anthropogenic influences that may affect the hydrology or contaminant pathways at the SWMUs.

- Characterize the source of contamination through collection of analytical data, and evaluate the migration and dispersal characteristics of the contamination.

- Characterize the extent, origin, direction, and rate of movement of contamination through collection of soil and groundwater samples in the vicinity of the SWMUs.

- Evaluate potential receptors by collecting data describing human populations and environmental systems susceptible to contaminant exposure.

- Evaluate the risk of any contaminants associated with the SWMUs to human health and the environment.

- Provide recommendations for site management.

1.5 References

Baker, 2005 — Baker Environmental, Inc. Phase II - SWMU Confirmatory Sampling Report, Marine Corps Base Camp Lejeune, North Carolina. Final. Prepared for the Naval Facilities Engineering Command (NAVFAC), Atlantic Division, Norfolk, Virginia. April 2005.

Baker, 2001 — Baker Environmental, Inc. Phase I - SWMU Confirmatory Sampling Report, Marine Corps Base Camp Lejeune, North Carolina. Revised Final. Prepared for the Naval Facilities Engineering Command, Atlantic Division, Norfolk, Virginia. November 2001.

EnSafe, 1996 — Environmental and Safety Designs, Inc. RCRA Facility Assessment Report for Marine Corps Base Camp Lejeune, North Carolina. Final. Prepared for the Naval Facilities Engineering Command, Atlantic Division, Norfolk, Virginia. July 25, 1996

FIGURES

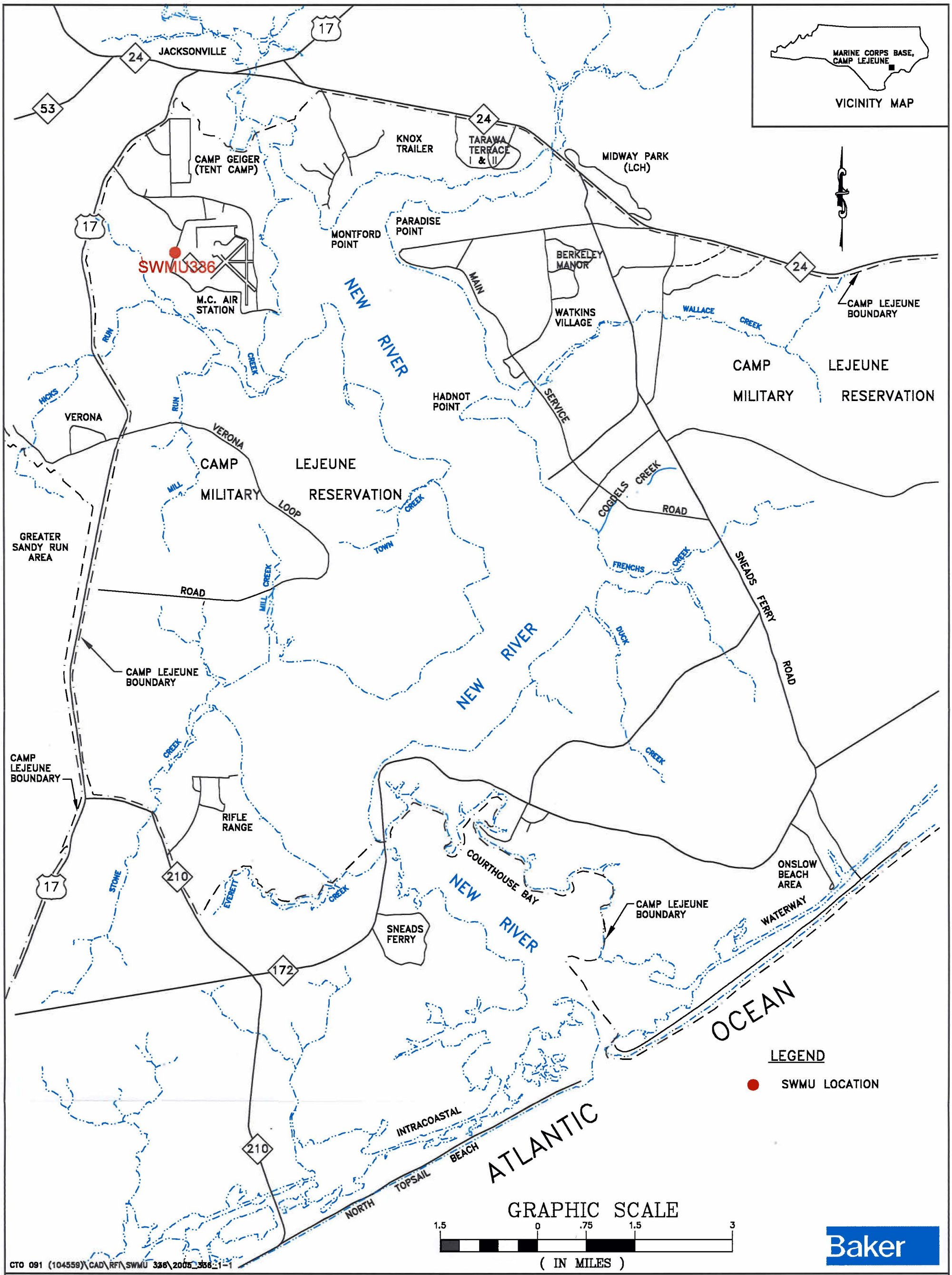
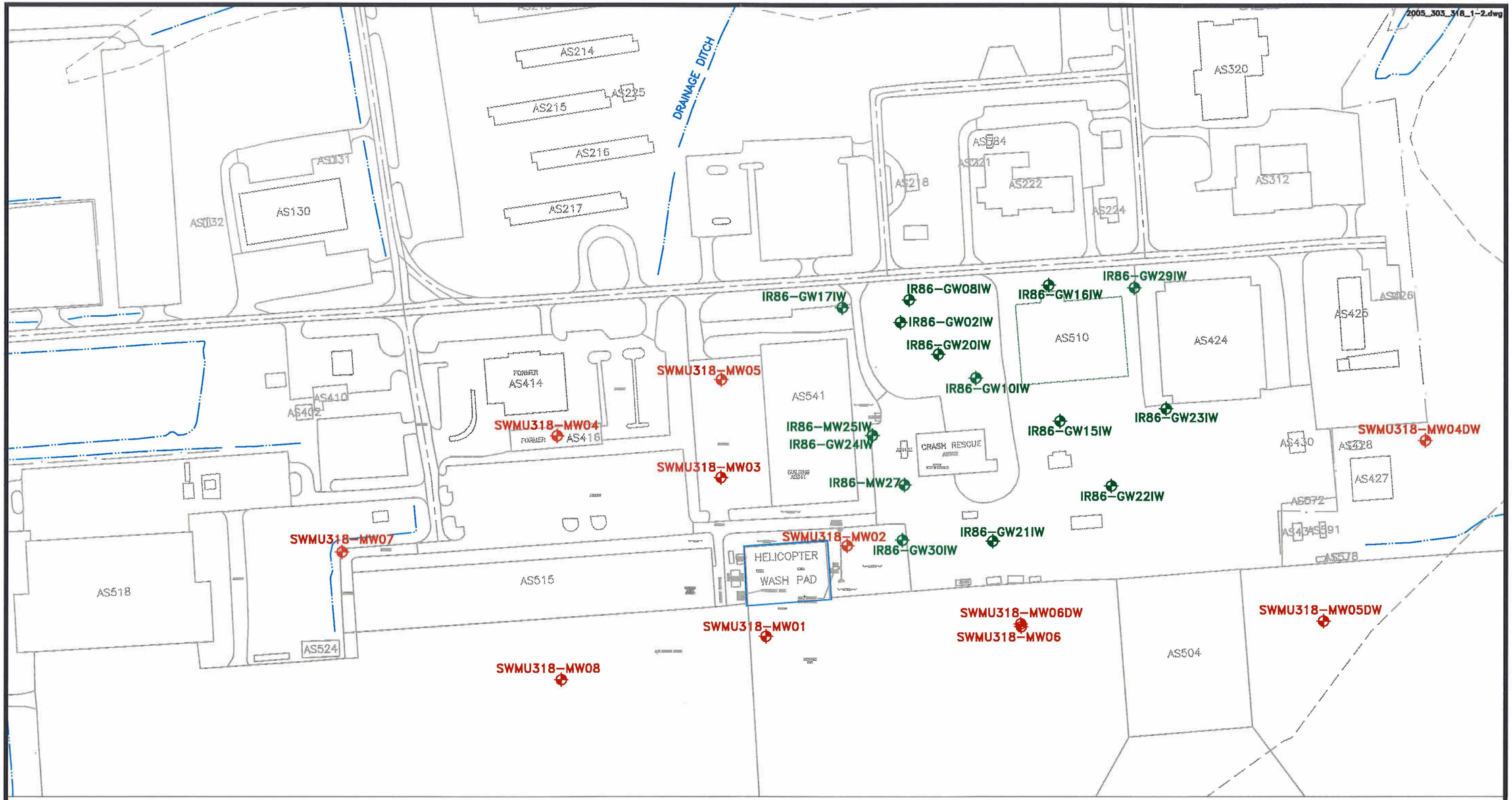


FIGURE 1-1

GENERAL SITE LOCATION MAP
RCRA FACILITY INVESTIGATION (RFI)
SWMU 336
CTO - 0091

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



SOURCE: MCB CAMP LEJEUNE, 2000.

Baker

LEGEND

- IR86-GW – SITE 86 MONITORING WELL LOCATION
- SWMU318-MW – SWMU 303/318 MONITORING WELL LOCATION
- HELICOPTER WASH PAD AND SWMU LOCATION

FIGURE 1-2
CURRENT CONDITIONS MAP
RCRA FACILITY INVESTIGATION
SWMU 303/318, CTO-0091

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

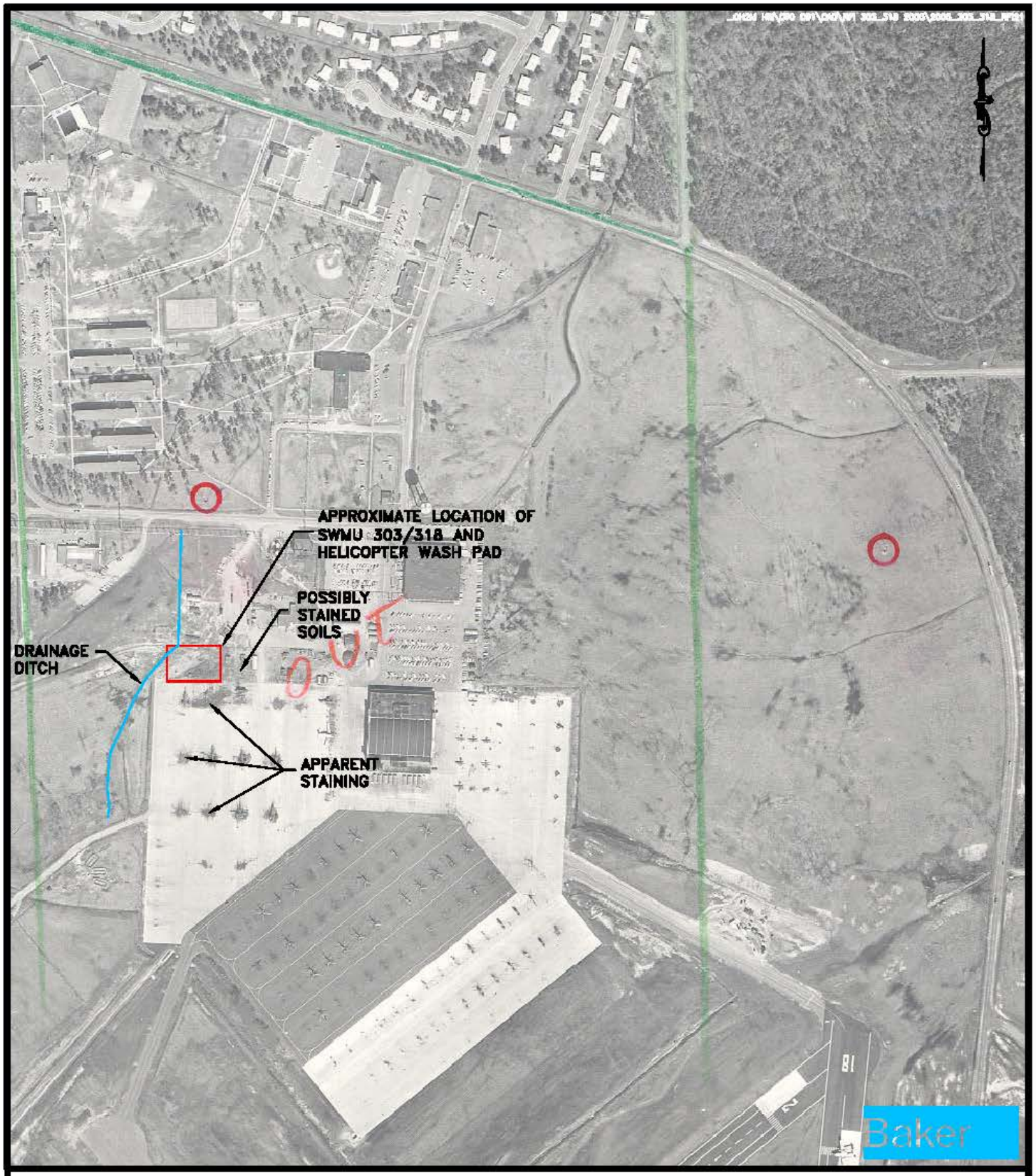


FIGURE 1-3
1962 AERIAL PHOTO OF MCAS NEW RIVER
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO - 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

2.0 FIELD INVESTIGATION

The RFI of these SWMUs was conducted during three distinct phases. The initial investigation was conducted from February through April, 2004. A second phase of investigation was conducted during the month of June 2004, and the third phase was conducted from February through March, 2005. Each of the phases were conducted by Baker and included the following field procedures:

- Surface and Subsurface Soil Sampling
- Groundwater Grab Sampling
- Monitoring Well Installation and Development
- Groundwater Sampling
- Aquifer Properties Testing (slug testing)
- Field Quality Assurance/Quality Control (QA/QC)
- Mobile Laboratory Analysis
- Investigation Derived Waste (IDW) Handling
- Site Survey

All geoprobe and drilling operations were conducted by Parratt-Wolff, Inc. located in Hillsborough, North Carolina. The following sections present a general overview of the investigative procedures with specific details on any deviation from the prescribed program for this investigation as outlined in the Site-Specific Work Plans for SWMUs 46, 261/297, 269, and 303/318 (Baker, 2004), Site-Specific Work Plans for SWMUs 303/318 and 336 (Baker, 2005), and the Master Project Plans (Baker, 2003) for the RCRA Program. A summary of the sampling and analytical program is presented on Table 2-1. The sample and monitoring well locations are shown on Figures 2-1 and 2-2.

2.1 Surface and Subsurface Soil Sampling

A total of twenty-nine (29) soil borings were advanced during the three phases of the RFI for the purpose of collecting surface and subsurface soil samples. Thirteen borings were advanced during the first phase and sixteen during the third (Table 2-1). The soil borings were initially advanced in and around the wash pad to determine the severity of the contamination associated with the visually stained soils identified during the demolition of a portion of the pad. The soil

borings advanced during the third phase of the RFI were strategically located in and around potential source areas for shallow groundwater contamination identified during the initial phase of the RFI investigation. The objective of these later borings was to provide a potential correlation between analytical results from soil and groundwater samples, and possibly identify source areas for the shallow groundwater contamination. During the RFI, decisions regarding which borings to advance were made in the field by Baker's on-site geologist based on visual observations, field instrumentation, and contaminant concentrations as determined by a mobile laboratory.

Each boring was advanced to the water table (approximately 6 to 12 feet bgs) using a truck-mounted drill rig and direct push methods. Soil samples were collected continuously in 4-foot increments using a Geoprobe® MacroCore sampler and field screened for total volatile organic vapors using a photoionization detector (PID). Soils were classified in the field as they were encountered by a geologist. Soil descriptions, including estimates of grain size, relative density, moisture content, coloration, odor, and other visual observations were recorded in the field logbook and on Test Boring and Well Construction Records (Appendix A).

In general, three soil samples were collected from each soil boring based on sample depth, lithologic description, and/or field observations (e.g., elevated PID readings, discoloration, etc.) and submitted to the mobile laboratory for chemical analysis. If no evidence of contamination was observed, then the default sample depths were at the surface or just below the concrete/sub base, soil/groundwater interface, and approximately half-way between the surface and the soil/groundwater interface. The only exceptions where more than three samples were collected (not including duplicate samples) are soil borings SWMU318-SB02, SWMU318-SB06, SWMU318-SB18, and SWMU318-SB20. An additional sample was collected from SWMU318-SB18 and SWMU318-SB20 for Total Organic Carbon (TOC) (EPA SW846 method 9060) and Total Oxidant Demand (TOD) analyses via the fixed-based laboratory and eventually used in the development and evaluation of a corrective measure for the SWMU. TOD analysis is specialized and therefore, no specific method is listed for this analysis.

The samples were placed into appropriate, laboratory-supplied sample containers and analyzed in the field for VOCs by the mobile laboratory using gas chromatograph/mass spectroscopy (GC/MS) methods (EPA SW846 method 8260B). Mobile laboratory services were supplied by Columbia Technologies for the first phase conducted in February – April, 2004, Sentinel

Laboratories provided these services during the second phase in June, 2004, and New Age/Landmark Mobile Laboratory Services provided these services during the third phase conducted from February to March, 2005. Approximately 10 percent of the samples were submitted to a fixed-based laboratory and analyzed for TCL VOCs via the Organic Low Medium (OLM) method 04.2/04.3 to confirm the mobile laboratory data and provide comparative data. In addition, two of the samples collected from each soil boring were submitted to the fixed-based laboratory and analyzed for TCL SVOCs and RCRA metals. The only exceptions were SWMU318-SB13 and SWMU318-SB35. No samples from these two borings were submitted for TCL SVOCs and RCRA metals. Katahdin Analytical Services was the fixed-based laboratory selected for all three phases of investigation at the site.

Subsequent to sampling, all of the soil borings were backfilled with bentonite and completed with the appropriate surface material (i.e., asphalt, concrete, or soil).

2.2 Groundwater Grab Sampling

Groundwater samples were collected from fifty-one (51) groundwater grab borings in an attempt to determine the nature and extent of contamination, and to optimize monitoring well design with regard to screen placement (i.e., to select screen intervals where the highest concentrations of constituents were identified). Fifteen borings were advanced during the first phase of investigation, an additional fifteen were advanced during the second phase, and twenty-one were advanced during the third. Groundwater grab samples were initially collected in and around the helicopter wash pad. As contaminated groundwater was identified at each location, additional samples were collected progressively farther away in an attempt to delineate the contamination (Figure 2-2). Decisions regarding which borings to advance were made in the field by Baker's on-site geologist based on visual observations, field instrumentation, and contaminant concentrations as determined by the mobile laboratory.

During the advancement of the groundwater grab borings, soil samples were collected for lithologic identification as described in Section 2.1. Soils were described in the field, including estimates of grain size, relative density, moisture content, coloration, odor, and other visual observations, and these descriptions were recorded in the field logbook. The descriptions were later transcribed onto the Test Boring and Well Construction Records included in Appendix A of this report.

At every boring location except SWMU318-GW07A, SWMU318-GW20, SWMU318-GW26, SWMU318-GW27, and SWMU318-GW30, three groundwater grab samples were collected within a specified depth range, as follows:

- Near the upper portion of the surficial aquifer 10 to 19 feet bgs
- Within the deeper portion of the surficial aquifer above/within the Belgrade semi-confining unit 20 to 30 feet bgs
- Near the upper portion of the Castle Hayne aquifer 40 to 44 feet bgs

As with the soil sampling, exceptions to the prescribed sampling scheme are sometimes necessary due to field conditions or observations. The exceptions are as follows:

- Groundwater sample SWMU 318-GW07A-01 was collected during the second phase of the RFI investigation to verify a result collected from the 24-28 feet interval during the initial phase.

- Groundwater sample SWMU318-GW20-02A was collected from the 20-24 feet interval to obtain a groundwater sample above the semi-confining layer

- Groundwater grab borings SWMU318-GW26, SWMU318-GW27, and SWMU318-GW30 were used to assist in delineating the horizontal extent of contamination. Groundwater samples were collected only from those intervals necessary for delineation. Thus, only two samples were collected from these borings.

All of the groundwater grab samples were collected using a 4-foot long, stainless steel, discrete sampler that was hydraulically pushed to the desired depth. The cover of the sampler was then retracted exposing a screened portion, thus allowing groundwater to flow into the device. Prior to sample collection, groundwater was purged from the borehole to reduce the turbidity to the extent practical. Groundwater purging and sample collection was completed using a peristaltic pump and new dedicated tubing for each sample. The samples were collected using appropriate, laboratory-supplied sample containers and analyzed in the field for VOCs EPA SW846 method 8260B. Approximately 10 percent of the collected samples were submitted to a fixed-based laboratory and analyzed for TCL VOCs to confirm the mobile laboratory data and provide comparative data. During the first phase of the RFI investigation, one sample from each

groundwater grab boring was submitted to the fixed-based laboratory and analyzed for TCL SVOCs. During the second and third phases eight samples were submitted to the fixed-based laboratory for TCL SVOC analysis. The reduction in the number of samples analyzed for TCL SVOCs by the fixed-based laboratory was because the groundwater grab locations were being advanced further away from the petroleum hydrocarbon plume identified during the first phase of the RFI. As with the soil borings, subsequent to sampling, the borings were backfilled with bentonite pellets and hydrated.

2.3 Monitoring Well Installation and Development

A total of eleven (11) groundwater monitoring wells were installed during the RFI investigation. Three monitoring wells were installed during the first phase and eight were installed during the third phase. The work plans for the first phase of the RFI investigation indicated that five monitoring wells would be installed. However, only three were installed because it was evident that additional phases of investigation would be required to delineate the groundwater plume at the SWMUs. The work plans for the third phase of the RFI investigation stated that three intermediate monitoring wells will be installed when in fact, five were installed. The additional monitoring wells were added to the scope of work to aid in evaluating groundwater during the third phase of the investigation. The extra monitoring wells were added as a result of field observations and discussions with the project team

Eight of the monitoring wells (SWMU318-MW01 through SWMU318-MW08) were installed in the intermediate groundwater zone to a depth of 24 to 30 feet below ground surface (bgs). The other three monitoring wells (SWMU318-MW04DW through SWMU318-MW06DW) were labeled deep monitoring wells and were installed at a depth of 45 feet bgs. The SWMU318-MW01DW through SWMU318-MW03DW nomenclatures were not used for any deep monitoring wells. Initially, it was envisioned that the deep monitoring wells would be installed adjacent to the intermediate monitoring wells thus creating a nested well cluster. However, data collected during the early stage of the third phase indicated that the intermediate monitoring wells should be located to the west and south of the SWMUs, whereas, the deep monitoring wells should be located to the south and east of the SWMUs (see Section 4.0 for details). Therefore, the wells were not nested as originally planned. The construction details for these wells are summarized on Table 2-2.

Most of the newly installed monitoring wells were installed either adjacent to or in close proximity to Geoprobe® borings used for soil and groundwater grab sampling and therefore did not require the collection of additional geological information. However, for those wells that were not located near any previously advanced boring, soil samples were collected for lithologic identification as previously described in Section 2. The intermediate groundwater well borings were drilled using 6-1/4-inch inside diameter (ID), hollow-stem augers and the deep well borings were drilled using 6-inch nominal diameter mud rotary methods. During drilling, one Shelby tube sample was collected from monitoring well borings SWMU318-MW02 (4- to 6-foot depth interval) and SWMU318-MW03 (6- to 8-foot depth interval) to estimate certain engineering properties of site soils (e.g., vertical hydraulic conductivity, specific gravity, grain size). A third Shelby Tube sample was proposed to be collected; however, the sample from boring SWMU318-MW02 encompassed both the silty sand and sand lithologic units. Therefore, it was not deemed necessary to collect the third sample. The clay and sand portions of the sample from boring SWMU318-MW02 were separated at the laboratory and analyzed independently.

The monitoring wells were constructed using 2-inch ID, Schedule 40, polyvinyl chloride (PVC) well casing and screen materials. Well screens used for the construction of the intermediate wells were 10-feet long, where as well screens used for the deeper wells were 5-feet long. The annular space around the well screen was backfilled with well-graded, fine sand. The sand was extended to approximately 2 feet above the top of the screened interval. A bentonite seal (approximately two feet thick) was placed above the sand pack and hydrated with potable water. The annular space above the bentonite seal was backfilled with cement/bentonite grout to prevent surface and near subsurface water from traveling down the borehole and infiltrating into the screened groundwater-monitoring zone. The wells were completed with a flush-mounted, protective cover and locking, water-tight cap. These details are presented on the Test Boring and Well Construction Records (Appendix A) and summarized on Table 2-2.

Each new well, as well as eight of the existing monitoring wells at Site 86 that were to be included as part of the groundwater evaluation for this investigation (IR86-GW02IW, IR86-GW17IW, IR86-GW20IW, IR86-GW21IW, IR86-GW22IW, IR86-GW25IW, IR86-GW27IW, and IR86-GW30IW), were developed using a surge block and Waterra pump (inertial lift pump) in conjunction with new flexible polyethylene pipe and a check valve. The well development effort was guided by visual observations of water clarity and volume of groundwater removed during development. Although a turbidity meter was used to determine water clarity, as the water

cleared, additional surging was applied to the well to further dislodge sediment trapped within the sand pack and provide better hydrogeologic communication between the monitoring well and the aquifer. Well development records are included in Appendix A.

2.4 Groundwater Sampling

Groundwater samples were collected from the newly installed monitoring wells (SWMU318-MW01 through SWMU318-MW08, and SWMU318-MW04DW through SWMU318-MW06DW) and during the RFI investigation. Monitoring wells SWMU318-MW01, SWMU318-MW02, and SWMU318-MW03 were sampled during the first and third phases of the investigation.

In addition to the eleven newly installed monitoring wells, data collected from fifteen existing wells that were installed during the investigative activities at IR Site 86 were used to help evaluate groundwater conditions in the vicinity of the site. Three of the existing wells (IR86-GW25IW, IR86-GW27IW, and IR86-GW30IW) were sampled during the first phase of the RFI (February, 2004). The on-going long term monitoring program conducted at Site 86 produced sample results from January, 2005 that included monitoring wells IR86-GW08IW, IR86-GW10IW, IR86-GW15IW, IR86-GW16IW, IR86-GW23IW, IR86-GW24IW, IR86-GW25IW, IR86-GW29IW, and IR86-GW30IW. During the third phase of the RFI conducted in February – March, 2005, existing monitoring wells IR86-GW02IW, IR86-GW17IW, IR86-GW20IW, IR86-GW21IW, IR86-GW22IW and IR86-GW27IW were sampled.

All groundwater samples, regardless of phase or time of installation, were collected using a peristaltic pump and low-flow purging/sampling procedures. New disposable tubing was used for each well. Before purging/sampling, static water levels were measured in the wells. The pumping rate was set to create a sustainable low flow (i.e. a rate of flow at which no significant loss in water level is observed). Water quality parameters (WQPs) including pH, specific conductance, dissolved oxygen, temperature, and turbidity were measured frequently during purging and are included in Appendix B. The field testing was conducted within an in-line analyzer that limited exposure of the groundwater to the atmosphere while the field measurements were recorded.

In general, purging was considered complete when three successive readings of specific conductance, temperature, and dissolved oxygen stabilized within 10 percent, pH was within 0.1 Standard Units, and turbidity was less than 10 NTUs, or there was no further discernable upward or downward trend. Upon WQP stabilization, the in-line analyzer was disengaged and the groundwater samples were collected from the end of the tubing. The samples were placed into appropriate, laboratory-supplied sample containers with the appropriate preservatives.

2.5 Aquifer Properties Testing

Slug tests were conducted, subsequent to groundwater sampling, at four of the newly installed intermediate monitoring wells, two of the existing intermediate monitoring wells, and at the three newly installed deeper wells. The slug tests were conducted using a computerized data logger/pressure transducer and procedures outlined in The Design, Performance and Analysis of Slug Tests (Butler, 1998) and Designing Slug Tests to Improve Estimates of Hydraulic Conductivity (Butler, 2002). The data logger was started prior to introducing the slug (solid cylinder) into each well to insure collection of data at the earliest possible time. The aquifer's response to change in static conditions was measured using the data logger and pressure transducer.

Multiple tests were conducted in each well to provide comparative data. The slug test data were analyzed using the Bouwer and Rice Solution and Aqtesolv® v3.5. The translation method (Butler, 1998) was used when necessary to eliminate early-time oscillations in the data set. In addition, the hydraulic conductivity estimates were examined in context of site lithology and other historic hydraulic conductivity information (e.g., USGS studies and previous pumping test results) to ensure that the estimates appeared reasonable. The results of these tests are discussed in Section 3.3.2.

2.6 Field Quality Assurance/Quality Control

Field QA/QC samples included 11 trip blanks, 14 equipment rinsate blanks, 6 field blanks, 24 field duplicate samples, and 12 matrix spike/matrix spike duplicate (MS/MSD) samples. Table 2-1 provides a summary of QA/QC samples collected, as well as sources of equipment rinsate and field blanks.

Trip blanks were samples of analyte-free water prepared at the laboratory before commencement of the sampling event and shipped to the sampling team along with the unopened sample containers. The trip blanks were then randomly selected and included in each cooler containing samples for volatile organics analysis. The results were evaluated by the data validator to verify that the sample containers and method of sample container handling used throughout the sampling program have not contributed to contamination of the samples. In addition, the results were used to identify other potential sources of field or laboratory contamination.

Equipment rinsate blanks were collected by running laboratory-grade, deionized water over/through the sampling equipment and placing it into the appropriate sample containers for laboratory analyses. The results were evaluated by the data validator to verify that the sampling equipment has not contributed to contamination of the samples. Samples were collected from the following pieces of equipment:

- Dedicated polyethylene tubing used for groundwater sampling;
- An acetate sleeve used in the macro core sampler;
- The screened portion of the discrete groundwater sampling device; and
- A stainless steel spoon used in collecting soil samples.

One field blank was collected from any source of water used during each phase in the decontamination process. The field blanks were collected by pouring water from the original source directly into the sample bottle set. The results were evaluated by the data validator to verify that the water used in decontamination has not contributed to contamination of the samples. In addition, the results were used to identify other potential sources of field or laboratory contamination. Sources of water sampled include the potable water source located at the wash pad, the distilled water purchased from Foodlion, and the deionized water provided by the laboratory for use in the equipment blanks.

Field duplicate samples consisted of one unique sample, split into two aliquots, and analyzed independently for the same parameters as the corresponding original samples. The duplicate soil sample was homogenized and split. The duplicate water sample was collected simultaneously. The results were evaluated by the data validator to verify the reproducibility of the laboratory results and degree of variability of reported concentrations. The analytical results for these samples are included in Appendix F.

MS/MSD samples were prepared in the field using the same procedures as duplicate samples and analyzed for the same parameters as the corresponding original samples. The results were evaluated by the data validator to address aliquoting reproducibility and to provide information on matrix reproducibility otherwise unobtainable from samples reported below analytically reproducible and statistically valid levels. The analytical results for these samples are included in Appendix F.

2.7 Laboratory Analytical Program

As stated in Section 2.1, soil and groundwater grab samples were analyzed in the field by Columbia Technologies for the first phase conducted in February – April, 2004, Sentinel Laboratories provided these services during the second phase in June, 2004, and New Age/Landmark Mobile Laboratory Services was the mobile laboratory selected to provide these services during the third phase conducted from February to March, 2005. Each of these laboratories analyzed the grab samples for TCL VOCs using a mobile laboratory and GC/MS methods (Solid Waste [SW] 846 Method 8260B). However, during the completion of the first phase, Columbia Technologies mobile laboratory broke down, and therefore six samples were submitted to Maryland Spectral Services .

Samples collected for chemical analyses at a fixed-based laboratory were stored on ice in coolers at approximately 4 degrees Celsius (or less) and delivered by Federal Express to Katahdin Analytical Services, Inc. Chain-of-Custody Forms (Appendix C) were completed and enclosed in the shipping packages. These samples were analyzed for one or more of the following analytical suites in accordance with the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) or SW846 Methods:

- TCL VOCs using Organic Low Medium (OLM) 04.2/04.3
- TCL VOCs using SW846 method 8260B
- TCL SVOCs using OLM 04.2/04.3
- RCRA Metals using Inorganic Low Medium (ILM) 04.1/6010B/7470A

These parameters were selected based on chemicals of potential concern (COPCs) identified during the Phase I and Phase II CSIs. The groundwater samples were also analyzed in the field for the following WQPs: pH, specific conductance, dissolved oxygen, temperature, and turbidity.

The Shelby Tube samples were delivered to PW Laboratories, Inc. in East Syracuse, New York and analyzed for the following parameters:

- Grain Size – Sieve and Hydrometer using American Society for Testing and Material (ASTM) D422 and D1140
- Atterberg Limits using ASTM 4318
- Flex-Wall Permeability using ASTM D5084
- Moisture Content using ASTM D2216
- Specific Gravity using ASTM D854

The Shelby Tube sample was proposed to be analyzed for dry bulk density in accordance with the Site-Specific Work Plan. However, the laboratory inadvertently did not test for this parameter.

2.8 Investigation Derived Waste Handling

IDW included potentially contaminated soil, groundwater, decontamination fluids, personal protective equipment (i.e., gloves and other health and safety disposables), and general trash. Soil cuttings/excess soil samples were containerized in Department of Transportation (DOT) approved 55-gallon drums. Groundwater/decontamination fluids were containerized in a poly-tank. The drums and poly-tank were staged at the helicopter wash pad (at the SWMUs 303/318) pending final disposition. Personal protective equipment and general trash were placed in garbage bags and disposed of in Baker's regular trash dumpster located at Lot 203.

The soil and water IDW were sampled and disposed of by the Remedial Action Contractor (RAC) (Shaw Environmental & Infrastructure, Inc).

2.9 Site Survey

The sample locations were surveyed by Baker for horizontal position within the North Carolina State Plane Coordinate System using mapping-grade global positioning system (GPS) equipment (Trimble Pro XRS with a TSCE Data Collector). The horizontal accuracy was within approximately 3 feet.

The monitoring wells were surveyed by Miller Stephenson and Associates, P.C. of Virginia Beach, Virginia for wells installed during the first phase, and by Lanier Surveying of Jacksonville, North Carolina for wells installed during the second and third phases. The wells were surveyed for topographic elevation relative to mean sea level (msl) and horizontal position within the North Carolina State Plane Coordinate System. The vertical accuracy of the survey was within 0.01 feet and the horizontal accuracy was within 0.1 feet.

2.10 References

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TABLES

TABLE 2-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Designation		Depth	MOBILE LAB		FIXED-BASED LAB						
Sample	Date	(feet bgs)	SOIL	WATER	VOCs	SVOCs	METALS	Diss Gas	TOC	TOD	Comments
SOIL BORING SAMPLES											
SWMU318-SB01-00	3/16/2004	0 - 1	X			X	X				
SWMU318-SB01-03	3/16/2004	5 - 7	X								
SWMU318-SB01-04	3/16/2004	7 - 9	X			X	X				
SWMU318-SB02-00	3/16/2004	0 - 1	X		X						
SWMU318-SB02-00D	3/16/2004	0 - 1	X								
SWMU318-SB02-01	3/16/2004	1 - 3	X			X	X				
SWMU318-SB02-01D	3/16/2004	1 - 3	X			X	X				
SWMU318-SB02-04	3/16/2004	7 - 9	X			X	X				
SWMU318-SB02-06	3/16/2004	11 - 13	X								
SWMU318-SB03-00	3/19/2004	0 - 1	X			X	X				
SWMU318-SB03-01	3/16/2004	1 - 3	X			X	X				
SWMU318-SB03-04	3/19/2004	7 - 9	X								
SWMU318-SB04-01	3/16/2004	1 - 3	X		X						
SWMU318-SB04-02	3/16/2004	3 - 5	X			X	X				
SWMU318-SB04-04	3/16/2004	7 - 9	X			X	X				
SWMU318-SB05-00	3/16/2004	0 - 1	X								
SWMU318-SB05-02	3/16/2004	3 - 5	X			X	X				
SWMU318-SB05-02D	3/16/2004	3 - 5	X			X	X				
SWMU318-SB05-03	3/16/2004	5 - 7	X			X	X				
SWMU318-SB06-00	3/16/2004	0 - 1	X		X						
SWMU318-SB06-00D	3/16/2004	0 - 1			X						
SWMU318-SB06-01	3/16/2004	1 - 3				X	X				
SWMU318-SB06-01D	3/16/2004	1 - 3				X	X				
SWMU318-SB06-02	3/16/2004	3 - 5	X			X	X				
SWMU318-SB06-02D	3/16/2004	3 - 5	X								
SWMU318-SB06-04	3/16/2004	7 - 9	X								
SWMU318-SB07-00	3/20/2004	0 - 1	X			X	X				
SWMU318-SB07-02	3/20/2004	1 - 3	X			X	X				
SWMU318-SB07-04	3/20/2004	7 - 9	X								
SWMU318-SB08-00	3/20/2004	0 - 1	X			X	X				
SWMU318-SB08-02	3/20/2004	3 - 5	X								
SWMU318-SB08-04	3/20/2004	7 - 9	X			X	X				

TABLE 2-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Designation		Depth	MOBILE LAB		FIXED-BASED LAB						
Sample	Date	(feet bgs)	SOIL	WATER	VOCs	SVOCs	METALS	Diss Gas	TOC	TOD	Comments
SWMU318-SB09-00	3/22/2004	0 - 1	X		X	X	X				
SWMU318-SB09-02	3/22/2004	3 - 5	X			X	X				
SWMU318-SB09-03	3/22/2004	5 - 7	X								
SWMU318-SB10-00	3/23/2004	0 - 1	X			X	X				
SWMU318-SB10-02	3/23/2004	3 - 5	X								
SWMU318-SB10-03	3/23/2004	5 - 7	X			X	X				
SWMU318-SB11-00	3/22/2004	0 - 1	X								
SWMU318-SB11-01	3/22/2004	1 - 3	X			X	X				
SWMU318-SB11-03	3/22/2004	5 - 7	X			X	X				
SWMU318-SB12-00	3/22/2004	0 - 1	X								
SWMU318-SB12-01	3/22/2004	1 - 3	X			X	X				
SWMU318-SB12-04	3/22/2004	7 - 9	X			X	X				
SWMU318-SB13-00	3/23/2004	0 - 1	X								
SWMU318-SB13-01	3/23/2004	1 - 3	X								
SWMU318-SB13-03	3/23/2004	5 - 7	X								
SWMU318-SB14-01	2/5/2005	1 - 3	X								
SWMU318-SB14-02	2/5/2005	3 - 5	X			X	X				
SWMU318-SB14-03	2/5/2005	5 - 7	X			X	X				
SWMU318-SB15-01	2/5/2005	0 - 1	X			X	X				
SWMU318-SB15-02	2/5/2005	3 - 5	X								
SWMU318-SB15-02D	2/5/2005	3 - 5	X								
SWMU318-SB15-03	2/5/2005	5 - 7	X			X	X				
SWMU318-SB16-00	2/4/2005	0 - 1	X		X	X	X				
SWMU318-SB16-00D	2/4/2005	0 - 1	X								
SWMU318-SB16-02	2/4/2005	3 - 5	X			X	X				
SWMU318-SB16-03	2/4/2005	5 - 7	X								
SWMU318-SB17-01	2/5/2005	1 - 3	X								
SWMU318-SB17-02	2/5/2005	3 - 5	X			X	X				
SWMU318-SB17-03	2/5/2005	5 - 7	X			X	X				
SWMU318-SB18-00	2/7/2005	0 - 1	X								
SWMU318-SB18-01	2/7/2005	1 - 3	X						X	X	
SWMU318-SB18-02	2/7/2005	3 - 5	X			X	X				
SWMU318-SB18-03	2/7/2005	5 - 7	X			X	X				

TABLE 2-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Designation		Depth	MOBILE LAB		FIXED-BASED LAB						
Sample	Date	(feet bgs)	SOIL	WATER	VOCs	SVOCs	METALS	Diss Gas	TOC	TOD	Comments
SWMU318-SB19-00	2/4/2005	0 - 1	X			X	X				
SWMU318-SB19-02	2/4/2005	3 - 5	X								
SWMU318-SB19-05	2/4/2005	9 - 11	X			X	X				
SWMU318-SB20-00	2/3/2005	0 - 1	X		X						
SWMU318-SB20-00D	2/3/2005	0 - 1			X						
SWMU318-SB20-02	2/3/2005	3 - 5	X			X	X			X	
SWMU318-SB20-04	2/3/2005	7 - 9	X			X	X				
SWMU318-SB20-14	2/20/2005	27 - 29								X	
SWMU318-SB21-00	2/3/2005	0 - 1	X			X	X				
SWMU318-SB21-02	2/3/2005	3 - 5	X		X		X				
SWMU318-SB21-04	2/3/2005	7 - 9	X			X					
SWMU318-SB22-00	2/7/2005	0 - 1	X								
SWMU318-SB22-03	2/7/2005	5 - 7	X			X	X				
SWMU318-SB22-04	2/7/2005	7 - 9	X			X	X				
SWMU318-SB23-00	2/3/2005	0 - 1	X			X					
SWMU318-SB23-02	2/3/2005	3 - 5	X		X	X	X		X		
SWMU318-SB23-04	2/3/2005	7 - 9	X				X				
SWMU318-SB24-00	2/7/2005	0 - 1	X			X	X				
SWMU318-SB24-03	2/7/2005	5 - 7	X			X	X		X	X	
SWMU318-SB24-05	2/7/2005	9 - 11	X								
SWMU318-SB25-00	2/8/2005	0 - 1	X								
SWMU318-SB25-02	2/8/2005	3 - 5	X			X	X				
SWMU318-SB25-02D	2/8/2005	3 - 5	X			X	X				
SWMU318-SB25-04	2/8/2005	7 - 9	X			X	X				
SWMU318-SB25-04D	2/8/2005	7 - 9	X			X	X				
SWMU318-SB26-00	2/4/2005	0 - 1	X								
SWMU318-SB26-01	2/4/2005	1 - 3	X			X	X				
SWMU318-SB26-02	2/4/2005	3 - 5	X		X	X	X				
SWMU318-SB27-00	2/7/2005	0 - 1	X								
SWMU318-SB27-02	2/7/2005	3 - 5	X			X	X				
SWMU318-SB27-02D	2/7/2005	3 - 5	X			X					
SWMU318-SB27-03	2/7/2005	5 - 7	X			X	X				
SWMU318-SB27-03D	2/7/2005	5 - 7	X								

TABLE 2-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Designation		Depth	MOBILE LAB		FIXED-BASED LAB						
Sample	Date	(feet bgs)	SOIL	WATER	VOCs	SVOCs	METALS	Diss Gas	TOC	TOD	Comments
SWMU318-SB28-00	2/8/2005	0 - 1	X								
SWMU318-SB28-02	2/8/2005	3 - 5	X			X	X				
SWMU318-SB28-02D	2/8/2005	3 - 5	X			X	X				
SWMU318-SB28-04	2/8/2005	7 - 9	X			X	X				
SWMU318-SB28-04D	2/8/2005	7 - 9	X			X	X				
SWMU318-SB35-01	2/5/2005	1 - 3	X								
SWMU318-SB35-01D	2/5/2005	1 - 3	X								
SWMU318-SB35-02	2/5/2005	3 - 5	X								
SWMU318-SB35-03	2/5/2005	5 - 7	X								
SWMU318-MW07-11	2/16/2005	21 - 23								X	
SWMU318-MW05DW-15	2/18/2005	29 - 31								X	
GROUNDWATER GRABS SAMPLES											
SWMU318-GW01	3/19/2004	12 - 16		X	X	X					
SWMU318-GW01-01	3/19/2004	24 - 28		X							
SWMU318-GW01-02	3/19/2004	40 - 44		X							
SWMU318-GW02	3/17/2004	10 - 14		X		X					
SWMU318-GW02 D	3/17/2004	10 - 14			X	X					
SWMU318-GW02-01	3/17/2004	24 - 28		X							
SWMU318-GW02-02	3/17/2004	40 - 44		X							
SWMU318-GW03	3/18/2004	12 - 16		X		X					
SWMU318-GW03-01	3/18/2004	24 - 28		X							
SWMU318-GW03-02	3/18/2004	40 - 44		X							
SWMU318-GW04	3/18/2004	12 - 16		X		X					
SWMU318-GW04-01	3/18/2004	24 - 28		X	X						
SWMU318-GW04-02	3/18/2004	40 - 44		X							
SWMU318-GW05	3/17/2004	10 - 14		X		X					
SWMU318-GW05-01	3/17/2004	24 - 28		X							
SWMU318-GW05-02	3/17/2004	40 - 44		X							
SWMU318-GW06	3/17/2004	15 - 19		X							
SWMU318-GW06-01	3/17/2004	20 - 24		X		X					
SWMU318-GW06-02	3/17/2004	26 - 30		X							
SWMU318-GW07	3/18/2004	10 - 14		X	X						
SWMU318-GW07-01	3/18/2004	24 - 28		X		X					

TABLE 2-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Designation		Depth	MOBILE LAB		FIXED-BASED LAB						
Sample	Date	(feet bgs)	SOIL	WATER	VOCs	SVOCs	METALS	Diss Gas	TOC	TOD	Comments
SWMU318-GW07-02	3/18/2004	40 - 44		X							
SWMU318-GW07A-01	6/24/2004	25 - 29		X							
SWMU318-GW08	3/17/2004	12 - 16		X							
SWMU318-GW08-01	3/17/2004	24 - 28		X		X					
SWMU318-GW08-02	3/17/2004	40 - 44		X							
SWMU318-GW09	3/19/2004	12 - 16		X							
SWMU318-GW09-01	3/19/2004	24 - 28		X		X					
SWMU318-GW09-02	3/19/2004	40 - 44		X							
SWMU318-GW09-02D	3/19/2004	40 - 44		X							
SWMU318-GW10	3/20/2004	15 - 19		X		X					
SWMU318-GW10-01	3/20/2004	20 - 24		X	X						
SWMU318-GW10-02	3/20/2004	26 - 30		X							
SWMU318-GW11	3/20/2004	12 - 16		X							
SWMU318-GW11-01	3/20/2004	24 - 28		X		X					
SWMU318-GW11-02	3/20/2004	40 - 44		X							
SWMU318-GW12	3/20/2004	12 - 16		X							
SWMU318-GW12-01	3/20/2004	24 - 28		X		X					
SWMU318-GW12-02	3/20/2004	40 - 44		X							
SWMU318-GW13	3/20/2004	12 - 16		X	X	X					
SWMU318-GW13-01	3/20/2004	24 - 28		X							
SWMU318-GW13-02	3/20/2004	40 - 44		X							
SWMU318-GW14	3/22/2004	12 - 16		X							
SWMU318-GW14-01	3/22/2004	26 - 30		X		X					
SWMU318-GW14-02	3/22/2004	40 - 44		X							
SWMU318-GW15	3/22/2004	12 - 16		X		X					
SWMU318-GW15-01	3/22/2004	24 - 28		X							
SWMU318-GW15-02	3/22/2004	40 - 44		X							
SWMU318-GW16	6/21/2004	10 - 14		X							
SWMU318-GW16-01	6/21/2004	25 - 29		X							
SWMU318-GW16-02	6/21/2004	40 - 44		X							
SWMU318-GW17	6/23/2004	10 - 14		X	X						
SWMU318-GW17-01	6/23/2004	25 - 29		X							
SWMU318-GW17-02	6/23/2004	40 - 44		X							
SWMU318-GW18	6/21/2004	10 - 14		X							
SWMU318-GW18-01	6/21/2004	25 - 29		X							
SWMU318-GW18-02	6/21/2004	10 - 14		X							
SWMU318-GW19	6/21/2004	10 - 14		X							

TABLE 2-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Designation		Depth	MOBILE LAB		FIXED-BASED LAB						
Sample	Date	(feet bgs)	SOIL	WATER	VOCs	SVOCs	METALS	Diss Gas	TOC	TOD	Comments
SWMU318-GW19-01	6/21/2004	25 - 29		X							
SWMU318-GW19-02	6/21/2004	40 - 44		X							
SWMU318-GW20	6/21/2004	10 - 14		X							
SWMU318-GW20-01	6/21/2004	25 - 29		X							
SWMU318-GW20-02	6/21/2004	40 - 44		X							
SWMU318-GW20-02A	6/24/2004	20 - 24		X	X						
SWMU318-GW21	6/22/2004	10 - 14		X							
SWMU318-GW21-01	6/22/2004	25 - 29		X							
SWMU318-GW21-02	6/22/2004	40 - 44		X							
SWMU318-GW21D	6/22/2004	10 - 14		X							
SWMU318-GW22	6/22/2004	10 - 14		X							
SWMU318-GW22-01	6/22/2004	25 - 29		X							
SWMU318-GW22-02	6/22/2004	40 - 44		X							
SWMU318-GW23	6/23/2004	10 - 14		X							
SWMU318-GW23-01	6/23/2004	25 - 29		X	X						
SWMU318-GW23-02	6/23/2004	40 - 44		X							
SWMU318-GW24	6/22/2004	10 - 14		X							
SWMU318-GW24-01	6/22/2004	25 - 29		X	X						
SWMU318-GW24-02	6/22/2004	40 - 44		X							
SWMU318-GW25	6/23/2004	10 - 14		X							
SWMU318-GW25-01	6/23/2004	25 - 29		X							
SWMU318-GW25-02	6/23/2004	40 - 44		X							
SWMU318-GW26-01	6/23/2004	25 - 29		X							
SWMU318-GW26-02	6/23/2004	40 - 44		X							
SWMU318-GW27	6/23/2004	10 - 14		X							
SWMU318-GW27-01	6/23/2004	25 - 29		X							
SWMU318-GW28	6/24/2004	10 - 14		X							
SWMU318-GW28-01	6/24/2004	25 - 29		X							
SWMU318-GW28-02	6/24/2004	40 - 44		X							
SWMU318-GW29	6/22/2004	10 - 14		X							
SWMU318-GW29-01	6/22/2004	23 - 27		X							
SWMU318-GW29-02	6/22/2004	40 - 44		X							
SWMU318-GW30-01	6/24/2004	25 - 29		X							
SWMU318-GW30-02	6/24/2004	40 - 44		X							
SWMU318-GW31	2/3/2005	12 - 16		X	X	X					
SWMU318-GW31-01	2/3/2005	24 - 28		X							
SWMU318-GW31-02	2/3/2005	40 - 44		X							

TABLE 2-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Designation		Depth	MOBILE LAB		FIXED-BASED LAB						
Sample	Date	(feet bgs)	SOIL	WATER	VOCs	SVOCs	METALS	Diss Gas	TOC	TOD	Comments
SWMU318-GW32	2/3/2005	12 - 16		X		X					
SWMU318-GW32-01	2/3/2005	24 - 28		X							
SWMU318-GW32-02	2/3/2005	40 - 44		X							
SWMU318-GW33	2/4/2005	12 - 16		X		X					
SWMU318-GW33-01	2/4/2005	24 - 28		X	X						
SWMU318-GW33-02	2/4/2005	40 - 44		X							
SWMU318-GW34	2/2/2005	12-16		X							
SWMU318-GW34-01	2/2/2005	22-26		X		X					
SWMU318-GW34-01D (95)	2/2/2005	22-26		X	X						
SWMU318-GW34-02	2/2/2005	40-44		X							
SWMU318-GW35	2/5/2005	12 - 16		X		X					
SWMU318-GW35-01	2/5/2005	24 - 28		X	X						
SWMU318-GW35-02	2/5/2005	40 - 44		X							
SWMU318-GW36	2/3/2005	12 - 16		X		X					
SWMU318-GW36-01	2/3/2005	24 - 28		X							
SWMU318-GW36-02	2/3/2005	40 - 44		X							
SWMU318-GW36-02D	2/3/2005	40 - 44		X							
SWMU318-GW37	2/3/2005	12 - 16		X	X	X					
SWMU318-GW37-01	2/3/2005	24 - 28		X							
SWMU318-GW37-02	2/3/2005	40 - 44		X							
SWMU318-GW38	2/2/2005	12 - 16		X		X					
SWMU318-GW38-01	2/2/2005	24 - 28		X							
SWMU318-GW38-01D	2/2/2005	24 - 28		X							
SWMU318-GW38-02	2/2/2005	40 - 44		X							
SWMU318-GW39	2/2/2005	12 - 16		X							
SWMU318-GW39-01	2/2/2005	24 - 28		X							
SWMU318-GW39-02	2/2/2005	40 - 44		X							
SWMU318-GW40	2/2/2005	12 - 16		X							
SWMU318-GW40-01	2/2/2005	22 - 26		X							
SWMU318-GW40-02	2/2/2005	40 - 44		X							
SWMU318-GW41	2/1/2005	12 - 16		X							
SWMU318-GW41-01	2/2/2005	22 - 26		X							
SWMU318-GW41-02	2/1/2005	40 - 44		X							
SWMU318-GW42	2/3/2005	12 - 16		X							
SWMU318-GW42-01	2/3/2005	24 - 28		X							
SWMU318-GW42-02	2/3/2005	40 - 44		X							
SWMU318-GW43	2/2/2005	12 - 16		X							

TABLE 2-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Designation		Depth	MOBILE LAB		FIXED-BASED LAB						
Sample	Date	(feet bgs)	SOIL	WATER	VOCs	SVOCs	METALS	Diss Gas	TOC	TOD	Comments
SWMU318-GW43-01	2/2/2005	22 - 26		X							
SWMU318-GW43-02	2/2/2005	40 - 44		X							
SWMU318-GW44	2/3/2005	12 - 16		X							
SWMU318-GW44-01	2/3/2005	22 - 26		X							
SWMU318-GW44-01D	2/3/2005	22 - 26		X							
SWMU318-GW44-02	2/3/2005	40 - 44		X							
SWMU318-GW45	2/3/2005	12 - 16		X							
SWMU318-GW45-01	2/3/2005	22 - 26		X							
SWMU318-GW45-02	2/3/2005	40 - 44		X							
SWMU318-GW46	2/6/2005	12 - 16		X							
SWMU318-GW46-01	2/6/2005	24 - 28		X							
SWMU318-GW46-02	2/6/2005	40 - 44		X							
SWMU318-GW47	2/6/2005	12 - 16		X							
SWMU318-GW47-01	2/6/2005	24 - 28		X							
SWMU318-GW47-02	2/6/2005	40 - 44		X							
SWMU318-GW48	2/5/2005	12 - 16		X							
SWMU318-GW48-01	2/5/2005	24 - 28		X							
SWMU318-GW48-02	2/5/2005	40 - 44		X							
SWMU318-GW49	2/6/2005	12 - 16		X							
SWMU318-GW49-01	2/6/2005	24 - 28		X							
SWMU318-GW49-01D	2/6/2005	24 - 28		X							
SWMU318-GW49-02	2/6/2005	40 - 44		X							
SWMU318-GW50	2/6/2005	12 - 16		X							
SWMU318-GW50-01	2/6/2005	24 - 28		X							
SWMU318-GW50-02	2/6/2005	40 - 44		X							
SWMU318-GW51	2/7/2005	12 - 16		X							
SWMU318-GW51-01	2/7/2005	24 - 28		X	X						
SWMU318-GW51-02	2/7/2005	40 - 44		X							

TABLE 2-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Designation		Depth	MOBILE LAB		FIXED-BASED LAB						
Sample	Date	(feet bgs)	SOIL	WATER	VOCs	SVOCs	METALS	Diss Gas	TOC	TOD	Comments
MONITORING WELL SAMPLES											
SWMU318-MW01	4/3/2004	20 - 30			X	X	X				Phase I - RFI
SWMU318-MW02	4/4/2004	20 - 30			X	X	X				Phase I - RFI
SWMU318-MW02D	4/4/2004	20 - 30			X	X	X				Phase I - RFI
SWMU318-MW03	4/4/2004	20 - 30			X	X	X				Phase I - RFI
SWMU318-MW03D	4/4/2004	20 - 30			X						Phase I - RFI
IR86-MW25IW	4/4/2004	20 - 30			X	X	X				Phase I - RFI
IR86-MW27	4/3/2004	20 - 30			X	X	X				Phase I - RFI
SWMU318-MW01-05A	2/15/2005	20 - 30			X	X	X	X			
SWMU318-MW02-05A	2/16/2005	20 - 30			X	X	X	X			
SWMU318-MW02-05AD	2/16/2005	20 - 30			X	X	X				
SWMU318-MW03-05A	2/16/2005	20 - 30			X	X	X	X			
SWMU318-MW04-05A	2/17/2005	20 - 30			X	X	X	X			
SWMU318-MW04-05AD	2/17/2005	20 - 30			X	X	X				
SWMU318-MW05-05A	2/17/2005	20 - 30			X	X	X	X			
SWMU318-MW06-05A	2/19/2005	20 - 30			X	X	X	X			
SWMU318-MW07-05A	2/19/2005	14 - 24			X	X	X	X			
SWMU318-MW08-05A	2/19/2005	20 - 30			X	X	X	X			
86-GW02IW-05A	2/16/2005	20 - 30			X	X	X	X			
86-GW27IW-05A	2/16/2005	20 - 30			X	X	X	X			
DEEPER MONITORING WELLS											
SWMU318-MW04DW-05A	2/19/2005	40 - 45			X	X	X	X			
SWMU318-MW05DW-05A	2/20/2005	40 - 45			X	X	X	X			
SWMU318-MW05DW-05AD	2/20/2005	40 - 45			X	X	X				
SWMU318-MW06DW-05A	2/19/2005	40 - 45			X	X	X	X			
86-GW17IW-05A	2/17/2005	45 - 55			X	X	X	X			
86-GW20IW-05A	2/16/2005	50 - 55			X	X	X	X			
86-GW21IW-05A	2/17/2005	44 - 54			X	X	X	X			
86-GW22IW-05A	2/17/2005	54 - 64			X	X	X	X			
GEOTECHNICAL SAMPLES (Shelby Tube samples)											
SWMU318-MW02[1]	3/31/2004	4 - 6									
SWMU318-MW03A[1]	3/31/2004	6 - 8									
SWMU318-MW03B[1]	3/31/2004	6 - 8									

TABLE 2-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Designation		Depth	MOBILE LAB		FIXED-BASED LAB						
Sample	Date	(feet bgs)	SOIL	WATER	VOCs	SVOCs	METALS	Diss Gas	TOC	TOD	Comments
EQUIPMENT RINSATES											
ER01	3/18/2004	NA			X	X	X				screen
MKDER02	3/18/2004	NA		X							screen
ER02	3/19/2004	NA			X	X					screen
ER03	3/21/2004	NA			X	X	X				sleeve
ER04	3/23/2004	NA			X	X	X				sleeve
ER06	4/6/2004	NA			X	X	X				spoon
SWMU318-ER01-04B	6/21/2004	NA		X							screen
SWMU318-ER02-04B	6/23/2004	NA		X							screen
SWMU318-ER03-04B	6/23/2004	NA		X							screen
ER01-020205	2/2/2005	NA			X	X					Tubing
ER02-020405	2/4/2005	NA			X	X	X				Sleeve
ER03-020605	2/6/2005	NA			X	X	X				Screen
ER04-020805	2/8/2005	NA			X	X	X				Spoon
ER05-05A	2/20/2005	NA			X	X	X				Tubing
TRIP BLANKS											
TB01	3/16/2004	NA			X						
TB02	3/18/2004	NA			X						
TB04	3/23/2004	NA			X						
TB07	4/5/2004	NA			X						
TB08	4/6/2004	NA			X						
TB01-020105	2/1/2005	NA			X						
TB02-020205	2/2/2005	NA			X						
TB03-020405	2/4/2005	NA			X						
TB04-020805	2/8/2005	NA			X						miss labeled
TB04-021805	2/18/2005	NA			X						
TB05-022005	2/20/2005	NA			X						
FIELD BLANKS											
FB01	3/23/2004	NA			X	X	X				Rig water
FB02	4/4/2004	NA			X	X	X				DI - WalMart
FB03	4/6/2004	NA			X	X	X				Lab water
FB01-05A	2/18/2005	NA			X	X	X				Lab water
FB02-05A	2/18/2005	NA			X	X	X				DI - Foodlion
FB03-05A	2/18/2005	NA			X	X	X				Wash Pad

Notes:
(1) = Shelby tube samples collected for grain size analysis, Atterburg Limits, Flex-wall permabilit
moisture content, specific gravity and dry-bulk density
bgs - below ground surface
VOC - Volatile Organic Compound
SVOC - Semi Volatile Organic Compound

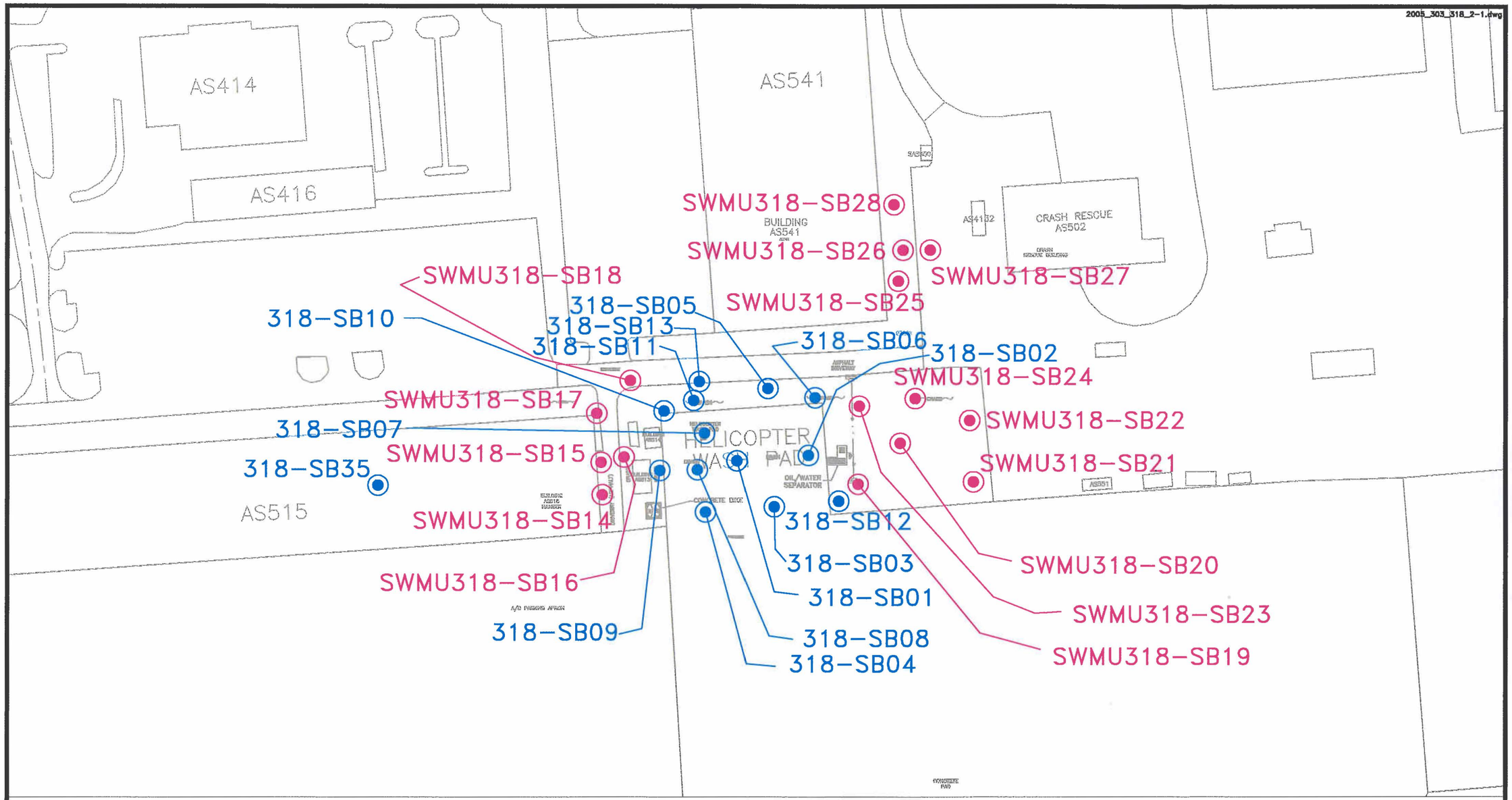
TABLE 2-2

MONITORING WELL CONSTRUCTION DETAILS AND WATER LEVEL MEASUREMENTS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Well No.	Date Installed	Consultant Supervising Well Installation	Top of PVC Casing Elevation (ft, above msl)	Ground Surface Elevation (ft, above msl)	Boring Depth (ft, bgs)	Well Depth (ft, bgs)	Depth to Sand Pack (ft, bgs)	Depth to Bentonite (ft, bgs)	Screen Interval Depth (ft, bgs)	Depth to Groundwater (ft, below top of casing)	Depth to Groundwater (ft, bgs)	Groundwater Elevation (ft, above msl)
SWMU318-MW01	3/30/2004	BAKER	17.53	17.80	30	30	17.5	15	20-30	5.01	5.28	12.52
SWMU318-MW02	3/31/2004	BAKER	17.43	17.80	30	30	17.0	12	20-30	4.89	5.26	12.54
SWMU318-MW03	3/21/2004	BAKER	17.57	17.90	30	30	17.5	15	20-30	4.65	4.98	12.92
SWMU318-MW04	2/14/2005	BAKER	18.23	18.43	N/A	30	18	15	20-30	5.27	5.47	12.96
SWMU318-MW04DW	2/17/2005	BAKER	15.65	16.01	N/A	45	38	32	40-45	2.72	3.08	12.93
SWMU318-MW05	2/15/2005	BAKER	17.18	17.38	N/A	30	18	16	20-30	4.72	4.92	12.46
SWMU318-MW05DW	2/18/2005	BAKER	19.18	19.60	32	45	38	33	40-45	6.93	7.35	12.25
SWMU318-MW06	2/16/2005	BAKER	19.39	19.64	N/A	30	18	16	20-30	6.98	7.23	12.41
SWMU318-MW06DW	2/16/2005	BAKER	19.36	19.62	N/A	45	37	30	40-45	7.24	7.50	12.12
SWMU318-MW07	2/15/2005	BAKER	17.32	17.44	24	24	11	9	14-24	4.33	4.45	12.99
SWMU318-MW08	2/15/2005	BAKER	17.98	18.31	N/A	30	17.9	16	20-30	5.30	5.63	12.68
IR86-GW02IW	1/22/1992	BAKER	18.71	17.74	30	30	16	8	20-30	6.19	5.22	12.52
IR86-GW17IW	3/12/1995	BAKER	16.95	17.10	57	55	42	34	45-55	4.34	4.49	12.61
IR86-GW20IW	4/4/1995	BAKER	17.78	15.60	56	55	40	34	50-55	5.15	2.97	12.63
IR86-GW21IW	5/2/1995	BAKER	18.15	18.51	64	54	40	27	44-54	5.78	6.14	12.37
IR86-GW22IW	4/27/1995	BAKER	17.7	18.14	65	64	49	43	54-64	5.01	5.45	12.69
IR86-GW25IW	10/9/1995	BAKER	15.48	15.60	30.5	30.3	18	16	20-30	2.96	3.08	12.52
IR86-GW27IW	10/10/1995	BAKER	16.06	16.30	30.5	20	18	16	20-30	3.39	3.63	12.67

Notes: msl - Mean Sea Level
bgs - Below Ground Surface
PVC - Polyvinyl Chloride
N/A - Not Applicable
Depth to groundwater as measured on February 19, 2005

FIGURES



Baker

LEGEND

- ◉ – PHASE I RFI SOIL BORING LOCATION
- ◉ – PHASE III RFI SOIL BORING LOCATION

100 0 50 100

1 inch = 100 ft.

SOURCE: MCB CAMP LEJEUNE, 2000.

FIGURE 2-1
SOIL BORING LOCATION MAP
RCRA FACILITY INVESTIGATION
SWMU 303/318, CTO-0091

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

2005_303_318_2-2.dwg

DRAINAGE DITCH

AS214 AS215 AS216 AS217 AS225 AS130 AS131 AS132 AS218 AS221 AS222 AS224 AS320 AS312 AS510 AS424 AS425 AS426 AS541 AS414 AS410 AS402 AS406 AS515 AS518 AS524 AS427 AS428 AS430 AS672 AS443 AS591 AS578 AS504

318-SB27A
IR86-GW17IW
86-GW08IW
IR86-GW02IW
IR86-GW20IW
86-GW16IW
86-GW29IW
86-GW10IW
86-GW23IW
86-GW15IW
IR86-GW22IW
SWMU318-GW44
SWMU318-GW45
SWMU318-GW43
SWMU318-GW47
SWMU318-MW04DW
SWMU318-MW05DW
SWMU318-GW42
SWMU318-MW06
SWMU318-GW40
SWMU318-GW41
SWMU318-GW39
318-GW27
SWMU318-MW05
SWMU318-GW38
318-GW24
318-GW25
318-GW16
IR86-MW25IW
318-GW18
318-GW26
86-GW24IW
SWMU318-MW04
318-GW10
318-GW13
IR86-MW27
318-GW19
318-GW07
318-GW21
318-GW17
318-GW03
318-GW02
318-GW20
SWMU318-MW02
IR86-GW30IW
IR86-GW21IW
318-GW28
318-GW29
318-GW09
318-GW06
318-GW15
318-GW01
318-GW14
318-GW12
318-GW04
318-GW22
318-GW05
318-GW08
318-GW11
SWMU318-MW01
SWMU318-MW06DW
SWMU318-GW50
SWMU318-GW33
SWMU318-GW49
318-GW30
318-GW23
SWMU318-GW34
SWMU318-MW03
SWMU318-GW31
SWMU318-MW07
SWMU318-GW37
SWMU318-GW35
SWMU318-GW51
SWMU318-GW32
SWMU318-GW36
SWMU318-MW08
SWMU318-GW48

HELICOPTER MAINTENANCE PAD

Baker
Michael Baker Jr. Inc.

200 0 100 200
1 inch = 200 ft.

SOURCE: MCB CAMP LEJEUNE, 2000.

LEGEND

- PHASE I RFI GROUNDWATER GRAB LOCATION
- PHASE II RFI GROUNDWATER GRAB LOCATION
- PHASE III RFI GROUNDWATER GRAB LOCATION
- MONITORING WELL LOCATION

FIGURE 2-2
GROUNDWATER GRAB AND MONITORING WELL LOCATION MAP
RCRA FACILITY INVESTIGATION
SWMU 303/318, CTO-0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

3.0 PHYSICAL CHARACTERISTICS

A sufficient understanding of the nature and extent of contamination as well as fate and transport of those constituents requires an understanding of the physical environment context in which the contamination occurs. The subsections that follow present information to support an interpretation of the physical environment, including topography and surface hydrology, potable water supply, and geology and hydrogeology from a regional and SWMU-specific perspective.

3.1 Topography and Surface Hydrology

The helicopter wash pad is a flat 160 feet by 120 feet concrete area bermed on three sides. The unbermed side leads to the tarmac. The pad itself consists of several concrete slabs. The slabs and joints appear to be in fair condition. Some slabs exhibit cracks with weeds and grass growing through. Some of the joints also exhibit weed and grass growth. A two-lane access road and large warehouse (Building AS541) with a flat, asphalt storage lot are located immediately north of the helicopter wash pad. An approximately 130 feet square grass area is located immediately east of the wash pad (separated by a drainage ditch). The Crash and Rescue station throughway is located beyond the grassy area. A vast concrete helicopter storage area and tarmac are located immediately south of the wash pad. A one-lane access road and helicopter maintenance hanger (Building AS515) are located immediately west of the wash pad.

The overall topography in the study area is flat to gently sloping. The surface elevation at Campbell Street is almost 20 feet above msl. The surface elevation on the tarmac is approximately 15.5 feet above msl. A slight depression is located northeast of the SWMU in the vicinity of wells 86-GW24IW and 86-MW25IW (approximately a 1% grade). Surface water tends to accumulate in this area.

Surface water flow across the study area is controlled. Due to the built up nature of the study area, rainwater runoff is collected in roof gutters, storm water sewer inlets in parking/storage areas, and in drainage ways along roads. Direct infiltration occurs in the few scattered grassy areas. The wash pad associated with SWMU 318 is designed to capture water from helicopter wash downs, and to an extent, captures some rainwater. Water in the wash pad drains to the oil/water separator, which in turn discharges to a drainage ditch, located adjacent to the oil/water separator. Water in this ditch flows to the south, presumably to the storm water collection

system. Standing water was observed in the ditch during the RFI field activities and appeared to be stagnant. It is likely that much of the surface water within the ditch infiltrates into the ground. During heavy rain events when the capacity of this ditch is exceeded, surface water flows to the storm water system.

3.2 Potable Water Supply

Information concerning the potable water supply at the Base was derived from the Wellhead Protection Plan – 2002 Update (AH Environmental Consultants [AH], 2002), interviews with Base personnel, and other literature sources referenced herein. Potable water for the Base is derived entirely by groundwater. The Base does not have established groundwater preservation areas. However, because the Base controls more than 236 square miles of land, and because much of this land has remained undeveloped, the undeveloped areas serve the function of groundwater preserves. Groundwater usage is roughly eight million gallons per day (gpd) (Cardinell, et al., 1993). Groundwater is pumped from approximately 84 water supply wells located within the boundaries of the Base. According to Base personnel, groundwater is treated at five plants located at Hadnot Point, Holcomb Boulevard, MCAS New River, Courthouse Bay, and Onslow Beach. The treatment plants have a maximum total capacity of 15.8 million gpd. However, the Base population only requires 6.5 million gpd.

The water supply wells at the Base withdraw water from the Castle Hayne aquifer. The Castle Hayne aquifer is a highly permeable, semi-confined aquifer that can yield several hundred to 1,000 gallons per minute (gpm). The wells (8-inch diameter) average 162 feet in depth and yield 174 gpm (Harned, et al., 1989). The water is typically a hard, calcium bicarbonate type.

Figure 3-1 shows the SWMU in relation to nearby water supply wells. The nearest water supply well (PSWAS-131) is located approximately 1,200-feet hydraulically side-gradient of the wash pad. This well is listed as inactive. The nearest active well is PSWAS-4140, and is located approximately 2,400-feet hydraulically upgradient of the SWMU. Based on information presented in the Wellhead Protection Plan, the 10-year maximum pumping capture zone around well PSWAS-4140 is approximately 800 feet (1,600 feet away from the SWMU). In other words, if contaminants were released within 800 feet of well PSWAS-4140, then the well would likely capture these contaminants within 10-years, not accounting for natural attenuation. However, this well is located hydraulically upgradient and approximately 1,600 feet away. Furthermore,

historical groundwater contour maps from Site 86 indicate that pumping at well PSWAS-4140 does not influence groundwater flow in the vicinity of the SWMUs. Thus, it is improbable that any release from the wash pad area will impact well PSWAS-4140.

3.3 Geologic and Hydrogeologic Framework

Site-specific geologic and hydrogeologic information was obtained from soil borings and monitoring wells drilled at the SWMU and nearby IR Site 86. In addition to the site specific information, available geologic publications and mapping were reviewed and discussed in context of the regional framework presented below.

3.3.1 Regional Framework

The Base is located within the Tidewater region of the Atlantic Coastal Plain physiographic province. The sediments of the Atlantic Coastal Plain consist mostly of interbedded sands, silts, clays, calcareous clays, shell beds, sandstone, and limestone. These sediments are layered in interfingering beds and lenses that gently dip and thicken to the southeast to a combined thickness of approximately 1,500 feet. The sediments were deposited in marine or near-shore environments and range in age from early Cretaceous to Quaternary time. Regionally, the sediments comprise 10 aquifers and nine confining units, which overlie igneous and metamorphic basement rocks of the pre-Cretaceous age. Seven of these aquifers and their associated confining units are present at the Base (Cardinell, et al., 1993). Table 3-1 presents a generalized stratigraphic column for Jones and Onslow Counties, North Carolina. A hydrogeologic section location plan and hydrogeologic cross-sections of the Base are presented in the Hydrogeologic Framework of U.S. Marine Corps Base at Camp Lejeune, North Carolina (Cardinell, et al, 1993).

United States Geological Survey (USGS) studies performed by Harned, et al., 1989 and Cardinell, et al., 1993 indicate that the Base is underlain by sand and limestone aquifers separated by confining units of silt and clay. These aquifers include the surficial (water table), Castle Hayne, Beaufort, Peedee, Black Creek, and upper and lower Cape Fear. Less permeable clay and silt beds function as confining units or semi-confining units that separate the aquifers and impede the flow of groundwater between aquifers.

Historically, only the upper two water-bearing units have been impacted by Base activity, namely the surficial aquifer and the Castle Hayne aquifer. The surficial unit consists of interfingering beds of sand, clay, sandy clay, and silt that contain some peat and shells in the undifferentiated formation. According to information presented by the USGS, the undifferentiated formation/surficial aquifer is approximately 15 to 25 feet thick in the vicinity of the Hadnot Point industrial area. Although this aquifer is classified as GA (i.e., existing or a potential source of drinking water supply for humans), it is not used as a potable water source at the Base because of its low yielding production rates (typically less than 3 gpm). The Belgrade formation consists of clay, sandy clay, and silt beds and is part of the Castle Hayne confining unit. The Belgrade formation tends to be semi-confining in nature because it is laterally discontinuous. The thickness of this unit ranges from approximately 0 to 26 feet and typically averages 9 feet where present, with no discernible thickness trend. The Castle Hayne aquifer primarily resides within the River Bend Formation, which consists of sand, cemented shells, and limestone. The upper portion of the aquifer primarily consists of calcareous sands with some thin clay and silt beds. The sand becomes increasingly more limy with depth. The lower portion of the aquifer consists of partially unconsolidated limestone and sandy limestone interbedded with clay and sand. In addition, buried paleostream channels containing various deposits exist within the aquifer. According to information presented by the USGS, the Castle Hayne aquifer is approximately 350 feet thick in the vicinity of the Hadnot Point industrial area.

Recharge to the surficial aquifer is by rainfall. This water-bearing unit receives more recharge in the winter than in the summer when much of the water evaporates or is transpired by plants before it can reach the water table. Most of the surficial groundwater is discharged to local streams, but some water passes through the underlying semi-confining unit. Recharge is estimated to average 30 percent of an average rainfall of 52 inches per year. The remaining 70 percent of rainfall is lost as surface runoff or evapotranspiration. Water levels within wells tapping this unit vary seasonally. The water table is generally highest in the winter and spring, and lowest in the summer and early fall. Recharge of the Castle Hayne aquifer at the Base is primarily received from the surficial aquifer. Natural discharge is to the New River and its major tributaries. Although the Castle Hayne aquifer provides approximately seven million gallons of water to the Base, groundwater pumping has not significantly affected natural head gradients in the aquifer.

Hydraulic conductivities of the surficial and Castle Hayne aquifers have been estimated through various studies and have been found to vary significantly from study to study as well as spatially. The estimated lateral hydraulic conductivity for the surficial aquifer is 50 feet per day (ft/d) and is based on a general composition of fine sand mixed with some silt and clay (Cardinal, et al., 1993). Baker compiled and studied data from aquifer pumping tests at the Base in 1994 to evaluate aquifer characteristics and production capacities. The technical memorandum is provided as Appendix E. The information contained in this memorandum pertains primarily to the surficial aquifer. Average pumping rates were established between 0.5 to 3 gpm, with a hydraulic conductivity estimate range from 0.5 to 1.4 ft/d. Estimated hydraulic conductivity values of the Castle Hayne aquifer range from 14 to 91 ft/d.

3.3.2 Site-Specific Framework

Geology

Three cross sections were prepared for the SWMUs 303/318 RFI report to represent subsurface geology (Figure 3-2). Cross Section A-A' begins at boring SWMU318-GW09 and traverses to the east, to boring SWMU318-GW17 (Figure 3-3). Cross Section B-B' begins at boring SWMU318-GW08 and traverses to the north, to boring SWMU318-GW27A (Figure 3-4); and cross section C-C' begins at boring SWMU318-GW05 and traverses to the northeast, to boring IR86-MW19DW (Figure 3-5). The paragraphs that follow discuss the geology illustrated on these cross sections.

The subsurface geology in the vicinity of the wash pad exhibits a fairly consistent stratigraphic sequence, with some heterogeneity within the stratigraphic layers. Generally, the sequence observed is as follows (from shallow to deep):

The undifferentiated formation (1.5 to 24 feet bgs)

- Fill material (e.g., pavement and sub base)
- Silt and/or clay
- Fine sand, with trace to some silt and/or clay

The Belgrade formation (24 to 30 feet bgs)

- Predominantly fine sand with some silt and little clay or predominantly silt

The River Bend formation (30 feet and deeper)

- Shell and fossil fragments (generally fine to coarse sand and/or fine to coarse gravel)

Much of the surface and near surface (typically to a depth of 1.5 feet or less) in the vicinity of the wash pad consists of asphalt or concrete with a sand and gravel filled sub base. Where pavement and sub base are absent, silt or fine sand were observed (e.g., near boring 318-GW13 on Figure 3-5). This material appears to be fill at some locations (e.g., near boring 318-GW25 on Figure 3-4).

A clay and/or silt layer is present immediately below the fill, virtually across the entire study area. It varies somewhat in composition, from predominantly clay (in most borings) to predominantly silt (e.g., boring 318-GW09 on Figure 3-3). The top of this layer was observed between 1 and 3 feet bgs. This layer was encountered deeper (4 to 8 feet bgs) in the northern and eastern ends of the study area, where a fine sand layer is present above the clay/silt as demonstrated in soil boring 318-SB27A on Figure 3-4 and in borings 86-MW10IW and 86-MW19DW on Figure 3-5. This clay/silt layer tends to be approximately 5 feet thick, but ranges from 3 feet (e.g., boring 318-GW25 on Figure 3-4) to 10 feet (e.g., boring 318-GW17 on Figure 3-3). This layer was not observed in 318-GW05 (Figure 3-5).

A fine sand layer is present immediately below the clay and/or silt layer across the entire study area. This sand layer appears to be relatively homogeneous for the Base; with trace to little amounts of silt and/or clay. This sand layer tends to be approximately 17 feet thick, but ranges from 9 feet in soil boring 318-GW27A (Figure 3-4) to 24 feet in soil boring 318-GW08 (Figure 3-4).

The base of the sand layer noticeably changes color and composition. The color change is from brown and tan sands to an olive green mixture of sand, silt and clay. This layer is predominantly fine sand, with some silt and little clay, or is predominantly silt, with little to some fine sand. The observed characteristics of this unit are consistent with the Belgrade formation (Cardinell, et al, 1993). This layer typically is encountered approximately 24 to 28 feet bgs and is typically 3 to 5 feet thick.

A unit characterized by the presence of shell and fossil fragments, and calcareous sand is typically about 30 feet bgs, but ranges from 26 to 33 feet bgs. Due to the presence of shell and fossil fragments, this unit has been identified as the River Bend formation and is immediately below the Belgrade formation. According the USGS Report (Cardinell, et al, 1993), this formation can be 500 feet thick in some locations, well below the depth of this investigation.

Hydrogeology

Two water-bearing zones have been identified and investigated at SWMUs 303/318, the surficial aquifer and the Castle Hayne aquifer. The uppermost aquifer encountered at the SWMU is the surficial unit, which is herein interpreted to be the saturated portion of the undifferentiated formation. Groundwater level measurements were collected from five monitoring wells during April 2004 and were collected again from those same five wells and three additional wells from Site 86 in June 2004. Groundwater level measurements were also collected from several monitoring wells in February 2005 including both shallow and deeper wells to establish groundwater flow. All groundwater level measurements collected during RFI field activities are summarized on Table 2-2.

An interpretive groundwater contour map for April 2004 and June 2004 is provided as Figure 3-6 and Figure 3-7 respectively. A review of these figures indicates that shallow groundwater flows to the northeast, toward the New River and the hydraulic gradient across the site is approximately 0.0027 feet/foot.

Interpretive groundwater contour maps for February 2005 (shallow and deeper groundwater flow) are provided as Figure 3-8 and Figure 3-9 respectively. After reviewing these contour maps, it was evident that groundwater flow in the vicinity of the SWMU has changed within the past year. Based on historical IR Site 86 data, deeper groundwater flow within the Upper Castle Hayne Aquifer has always been to the northeast towards the New River. As seen in Figure 3-9, according to recent groundwater head measurements, the deeper groundwater flow is almost in the opposite direction to the south, southwest. The typical deeper groundwater flow at IR Site 86 is depicted in Figure 3-10. These measurements were collected on January 26, 2005. This figure depicts the typical flow direction for the Upper Castle Hayne Aquifer in the vicinity of IR Site 86 toward the New River and the hydraulic gradient across the site is approximately 0.0029 feet/foot.

During review of this data, it was suspected that air sparging activities from the IR Site 86 remediation project may have impacted the local groundwater flow. The air sparging system was started up on February 2, 2005 and operated through March 7, 2005. The system was in operation the entire time except for a temporary shutdown on February 7th and 8th, 2005. Table 3-2 summarizes the water level measurements collected at IR Site 86 prior to and during the air sparging activities. When comparing water levels during the air sparging operation to the static conditions in January prior to the system start up, water level changes near the horizontal well ranged from 2 to 9 feet in elevation. As seen on Figure 3-9, the majority of the wells measured for static water levels during this RFI are between 400 and 800 feet away from the horizontal well and the groundwater wells used as observation wells during the air sparging activities.

Historical static water elevations collected at IR Site 86 between January, 2001 and January, 2005 are provided in Table 3-3. In addition, this table depicts the static water levels collected during the most current phase of the RFI on February 19, 2005. Note that the water levels collected during the RFI are approximately one to two feet higher than the average static water elevations recorded since January 2001 for monitoring wells 86-GW02IW, 86-GW17IW, 86-GW20IW, 86-GW21IW, 86-GW22IW, 86-GW25IW, and 86-GW27IW. The table also shows that the static water elevations, in observation wells 86-GW28IW, 86-GW31IW, 86-GW32IW and 86-GW33IW are 1 to 2 feet lower than average historical static water levels just prior to shutdown of the air sparging system.

The lines of evidence described above show substantial changes in the local groundwater elevations around IR Site 86 and SWMUs 303/318. Therefore, given the fact that groundwater flow in and around SWMUs 303/318 is measured in tenths of feet and the local groundwater has been influenced with changes from 2 to 9 feet in elevation, it is likely that any groundwater level measurements collected during this phase of the RFI are not indicative of a change in groundwater flow direction, but rather caused by changes in groundwater elevation as a result of air sparging, and do not depict normal groundwater conditions. Using historical data from IR Site 86 and the previous investigations at SWMUs 303/318, normal groundwater flow in the shallow and deeper water-bearing zones is still expected to be in a northeastern direction.

The hydraulic properties of the upper portion of the surficial aquifer were characterized by conducting slug tests in the four new monitoring wells, and two existing wells (86-MW25IW and 86-MW27IW). The hydraulic properties of the upper portion of the Castle Hayne aquifer were

characterized by conducting slug tests in the three new monitoring wells (318-MW04DW, 318-MW05DW and 318-MW06DW). The test data and type curves, input data, and hydraulic conductivity estimates are included as Appendix D. The hydraulic conductivity estimates and velocity calculations are summarized on Table 3-4.

The hydraulic conductivity estimates of the lower portion of the surficial aquifer range from 0.4 to 5.2 feet per day (ft/d), with an average of 2.0 ft/d. The hydraulic conductivity estimates of the upper portion of the Castle Hayne aquifer range from 1.7 to 7.1 feet per day (ft/d), with an average of 3.9 ft/d. These ranges appear reasonable in context of historical Baker information (Appendix D), as well as considering the geology of these different aquifers. The variability in conductivity estimates is likely attributable to the heterogeneous nature of the formations.

Groundwater velocity estimates were calculated using a variation of Darcy's equation:

$$V = Ki/n_e$$

where: V = groundwater velocity (ft/d)
K = hydraulic conductivity (ft/d)
i = hydraulic gradient (feet/foot)
n_e = effective porosity (dimension less) and assumed to be on the order of 30 percent

The groundwater velocity estimates range from 0.024 ft/d in the surficial aquifer to 0.0377 ft/d in the upper Castle Hayne aquifer. Based on these estimates, groundwater velocity is approximately 8.76 feet/year in the surficial aquifer and 13.76 feet/year in the upper Castle Hayne aquifer.

Grain size and vertical permeability testing was performed on selected samples. A summary of geotechnical lab results is provided as Table 3-5. A sample taken from the shallow silt and clay at well 318-MW02 (described as a clay, with little to some fine sand) was determined to be a silt and fine sand with a vertical permeability of 0.00004 ft/d (see Appendix E). A sample taken from the shallow sand and clay layers at well 318-MW03 was split into two samples due to the presence of two distinct layers. One portion (described as fine sand, with little silt) was determined to be a fine to coarse sand, with some silt with a vertical permeability of 0.08 ft/d. The other portion (described as clay, with little sand) was determined to be fine sand and silt with a vertical permeability of 0.011 ft/d.

The Belgrade formation (Castle Hayne confining unit) is of particular interest to contaminant transport. As will be discussed in Section 4.0, contaminant concentrations were observed to be significantly lower beneath this formation. Samples collected from the sediments in this formation were observed to be generally wet, indicating some potential connection between the surficial and Castle Hayne aquifers. However, at this point in the RFI no hydraulic or geotechnical testing has been performed on samples from the Belgrade formation.

Summary

A fairly consistent stratigraphy has been observed at the SWMU. A mostly continuous silt and/or clay layer underlies surficial fill (asphalt/concrete and sub base). A slightly heterogeneous fine sand is present below the silt/clay layer, and is the primary water bearing unit of the surficial aquifer. This fine sand exhibits an average hydraulic conductivity of 2.0 ft/d in the lower portion, with an average groundwater flow velocity of nearly 6.6 feet/year in a northeast direction. A mostly continuous layer consisting of silt or fine sand, with some silt and little clay underlies the fine sand layer. This unit has been identified as Belgrade formation (Castle Hayne confining unit). Initial indications suggest that this layer is semi-confining. The Castle Hayne aquifer exhibits an average hydraulic conductivity of 3.8 ft/d, with an average groundwater flow velocity of nearly 13.5 feet/year in a northeast direction.

3.4 References

AH, 2002 — AH Environmental Consultants Wellhead Protection Plan – 2002 Prepared for the Naval Facilities Engineering Command, Atlantic Division, Norfolk, Virginia. August 2002.

Cardinell, et al., 1993 — Hydrogeologic Framework of U.S. Marine Corps Base at Camp Lejeune, North Carolina USGS. Water-Resources Investigations Report 93-4049.

Harned, et al., 1989 — Harned, Douglas A., et al, Assessment of Hydrologic and Hydrogeologic Data at Camp Lejeune Marine Corps Base. North Carolina. U.S. Geological Survey, Water-Resources Investigations Report 89-4096. 1989.

TABLES

TABLE 3-1

GEOLOGIC AND HYDROGEOLOGIC UNITS IN THE COASTAL PLAIN OF NORTH CAROLINA
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

GEOLOGIC UNITS			HYDROGEOLOGIC UNITS
System	**Series**	**Formation**	**Aquifer and Confining Unit**
Quaternary	Holocene/Pleistocene	Undifferentiated	Surficial Aquifer
Tertiary	Pliocene	Yorktown Formation [1]	Yorktown Confining Unit
			Yorktown Aquifer
	Miocene	Eastover Formation [1]	Pungo River Confining Unit
		Pungo River Formation [1]	Pungo River Aquifier
		Belgrade Formation [2]	Castle Hayne Confining Unit
	Oligocene	River Bend Formation	Castle Hayne Aquifier
	Eocene	Castle Hayne Formation	Beaufort Confining Unit[3]
	Palocene	Beaufort Formation	Beaufort Aquifer
Cretaceous	Upper Cretaceous	Peedee Formation	Peedee Confining Unit
			Peedee Aquifer
		Black Creek and Middendorf Formations	Black Creek Confining Unit
			Black Creek Aquifer
			Upper Cape Fear Confining Unit
		Cape Fear Formation	Upper Cape Fear Aquifer
			Lower Cape Fear Confining Unit
			Lower Cape Fear Aquifer
	Lower Cretaceous [1]	Unnamed Deposits [1]	Lower Cretaceous Confining Unit
			Lower Cretaceous Aquifier [1]
Pre-Cretaceous Basement Rocks		---	---

Notes:

[1] Geologic and hydrologic units not present beneath Camp Lejeune.

[2] Constitutes part of the surficial aquifer and Castle Hayne confining unit in the study area.

[3] Estimated to be confined to deposits of Paleocene age in the study area.

Source: Cardinell, et al., 1993

TABLE 3-2

SUMMARY OF WATER LEVEL MEASUREMENTS
OPERABLE UNIT NO. 20 - SITE 86
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Monitoring Well	Reference Elevation[1]	SWL 1/24/2001	SWE 1/24/2001	SWL 1/27/2002	SWE 1/27/2002	SWL 1/24/2003	SWE 1/24/2003	SWL 1/28/2004	SWE 1/28/2004	SWL 1/26/2005	SWE 1/26/2005	Average SWE Since 2001	SWE 2/19/2005	SWE after Air Sparging shutdown 3/2/2005
86-GW02IW	18.86	7.90	10.96	8.16	10.70	8.02	10.84	7.31	11.55	8.07	10.79	10.97	12.52	NA
86-GW17IW	17.03	5.96	11.07	6.23	10.80	NA	NA	5.48	11.55	6.09	10.94	11.09	12.61	NA
86-GW20IW	17.87	7.18	10.69	7.46	10.41	7.45	10.42	6.73	11.14	7.29	10.58	10.65	12.63	NA
86-GW21IW	18.22	NA	NA	8.02	10.20	6.73	11.49	6.69	11.53	7.49	10.73	10.99	12.37	NA
86-GW22IW	17.78	7.64	10.14	6.71	11.07	7.12	10.66	7.15	10.63	7.72	10.06	10.51	12.69	NA
86-GW25IW [2]	15.32	4.05	11.27	4.03	11.29	4.04	11.28	3.68	11.64	3.85	11.47	11.39	12.52	NA
86-GW27IW [2]	15.91	4.80	11.11	5.14	10.77	4.82	11.09	4.36	11.55	4.97	10.94	11.09	12.67	NA
86-GW28IW	15.80	7.20	8.60	6.31	9.49	7.63	8.17	6.80	9.00	7.37	8.43	8.74	NA	7.38
86-GW31IW	15.73	7.29	8.44	7.56	8.17	7.21	8.52	6.89	8.84	7.51	8.22	8.44	NA	6.99
86-GW32IW	14.72	7.20	7.52	7.23	7.49	7.15	7.57	6.76	7.96	7.20	7.52	7.61	NA	5.09
86-GW33IW	12.77	NA	NA	6.24	6.53	6.35	6.42	6.75	6.02	6.03	6.74	6.43	NA	4.61

Notes:

[1] = Top of PVC well casing expressed in feet above mean sea level
[2] = Monitoring well labeled as intermediate well but installed as shallow well in the surficial aquifer.
SWL = Static Water Level taken from top of PVC well casing
SWE = Static Water Elevation expressed in feet above mean sea level
NA = Data not available

TABLE 3-3

SUMMARY OF WATER LEVEL MEASUREMENTS
AIR SPARGING - SITE 86
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

		Depth to Water Measurements (ft.)				Groundwater Elevations (ft. msl)				Groundwater Elevation Change		
Well ID	Top of Casing Elevation	10/18/2004	1/31/2005	02/02/2005 (3hrs. After startup)	3/2/2005	10/18/2004	1/31/2005	02/02/2005 (3hrs. After startup)	3/2/2005	Change from January to 3hrs after startup	Change from 3hrs after startup to after shutdown	Change from January to after shutdown
86-GW28IW	15.8	NM	NM	NM	8.42	NM	NM	NM	7.38	NM	NM	NM
86-GW31IW	15.73	8.39	NM	NM	8.74	7.34	NM	NM	6.99	NM	NM	NM
86-GW32IW	14.72	7.32	NM	NM	9.63	7.4	NM	NM	5.09	NM	NM	NM
86-GW33IW	12.77	NM	NM	NM	8.16	NM	NM	NM	4.61	NM	NM	NM
86-GW35IWA	13.58	6.5	6.21	0	8.72	7.08	7.37	13.58	4.86	6.21	8.72	2.51
86-GW35IWB	13.62	6.54	6.43	0	8.63	7.08	7.19	13.62	4.99	6.43	8.63	2.2
86-GW35IWC	13.59	6.42	6.3	0	8.35	7.17	7.29	13.59	5.24	6.3	8.35	2.05
86-GW36IWA	13.55	6.8	6	2.68	8.5	6.75	7.55	10.87	5.05	3.32	5.82	2.5
86-GW36IWB	13.38	6	5.88	1.63	8.4	7.38	7.5	11.75	4.98	4.25	6.77	2.52
86-GW36IWC	13.3	6.21	5.75	0	8.3	7.09	7.55	13.3	5	5.75	8.3	2.55
86-GW37IWA	14.43	7.05	6.81	2.8	9.45	7.38	7.62	11.63	4.98	4.01	6.65	2.64
86-GW37IWB	14.49	7.15	6.9	2.92	9.56	7.34	7.59	11.57	4.93	3.98	6.64	2.66
86-GW37IWC	14.35	7	6.84	2.02	9.49	7.35	7.51	12.33	4.86	4.82	7.47	2.65
86-GW38IWA	15.55	8.01	7.72	3.61	10.38	7.54	7.83	11.94	5.17	4.11	6.77	2.66
86-GW38IWB	15.6	8.06	7.81	3.78	10.32	7.54	7.79	11.82	5.28	4.03	6.54	2.51
86-GW38IWC	15.83	8.18	8.08	3.1	10.74	7.65	7.75	12.73	5.09	4.98	7.64	2.66

TABLE 3-4

SUMMARY OF HYDRAULIC CONDUCTIVITY ESTIMATES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Well Name	Test Date	Hydraulic Conductivity Estimate								Lithology
		R1	R2	R3	F1	F2	F3	F4	Avg.	
318-MW01	4/4/2004	0.4	0.4	NT	NT	0.4	NT	NT	0.4	F SAND, little to some silt, trace clay
318-MW02	4/4/2004	1.0	1.2	NT	1.0	1.0	NT	NT	1.0	F SAND, little silt/SILT, some f sand
318-MW03	4/4/2004	0.9	0.8	NT	1.0	1.0	NT	NT	0.9	F SAND, trace silt/SILT, some f sand
86-MW25IW	4/4/2004	2.3	5.9	NT	3.0	3.8	NT	NT	3.8	silty SAND, trace clay
86-MW27IW	4/4/2004	4.3	3.8	NT	5.3	7.4	NT	NT	5.2	F/M SAND, trace to little silt/F SAND, little to some silt
318-MW06	2/20/2005	0.8	0.8	NT	0.9	0.6	NT	NT	0.8	F SAND, little silt/SILT, some f sand
Average shallow hydraulic conductivity at SWMUs 303/318									2.0	
318-MW06DW	2/20/2005	NR	1.5	1.8	NR	NR	1.6	1.9	1.7	Castle Hayne Formation (C-H)
318-MW05DW	2/20/2005	1.7	1.0	NT	4.9	3.6	NT	NT	2.8	Castle Hayne Formation (C-H)
318-MW04DW	2/20/2005	6.4	4.9	NT	9.6	7.6	NT	NT	7.1	Castle Hayne Formation (C-H)
Average deeper hydraulic conductivity at SWMUs 303/318									3.9	

Notes:
K values are in feet per day (ft/day)
"R1" refers to rising-head test #1, "F2" refers to falling-head test #2, etc.
NT - No test preformed
NR - No test recorded (test re-run)
C-H - Sediments of the Castle Hayne aquifer

TABLE 3-5

SUMMARY OF GEOTECHNICAL LABORATORY RESULTS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Sample ID	Depth (ft-bgs)	Plastic Limit	Liquid Limit	Plasticity Index	Moisture (%)	Specific Gravity	Vertical Permeability (ft/day)	Classification (USCS)	Modified Bermeister Classification
SWMU318-MW02	4.0 - 6.0	16	31	15	21.2	2.59	0.00004	SC	SILT and fine SAND, trace medium to coarse sand
SWMU318-MW03A	6.0 - 8.0	18	39	21	23.2	2.55	0.011	SC	fine SAND and SILT, trace medium to coarse sand and fine gravel
SWMU318-MW03B	6.0 - 8.0	NP	NA	NA	4.5	2.64	0.080	SM	fine to coarse SAND, some silt, trace to little fine to medium gravel

FIGURES

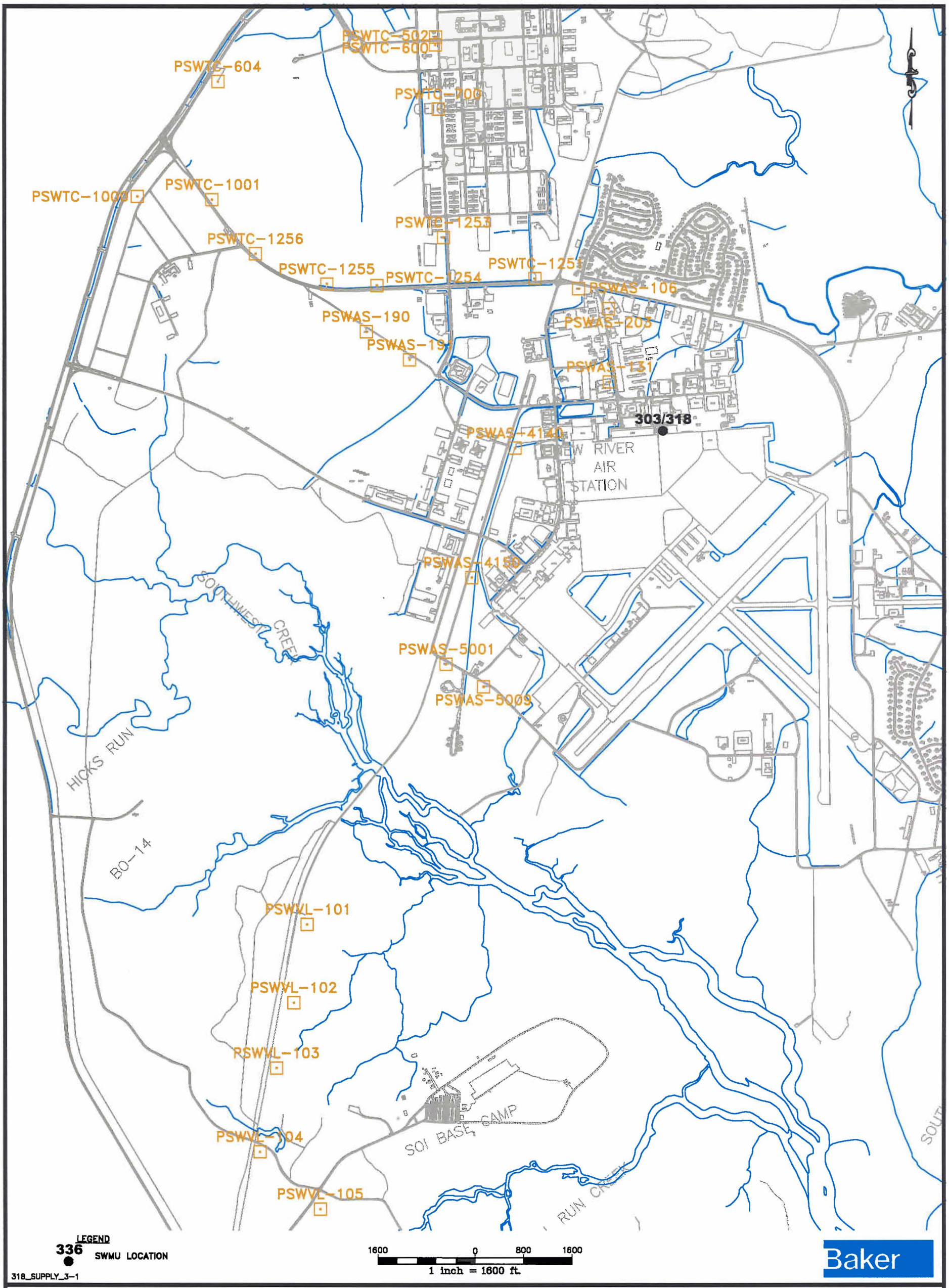
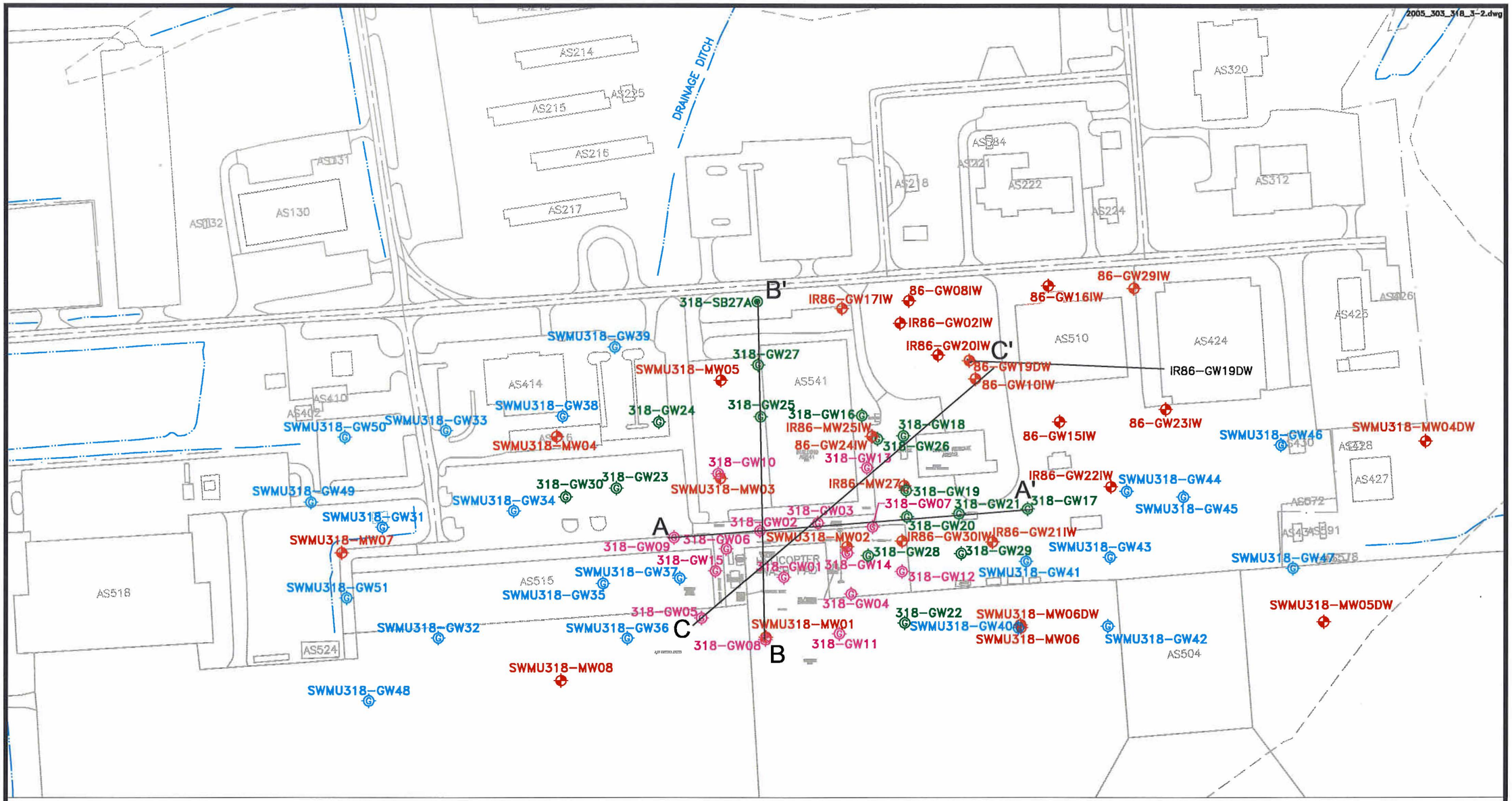


FIGURE 3-1

SWMU 303/318 RFI SUPPLY WELL MAP
RCRA FACILITY INVESTIGATION (RFI)
CTO - 0091

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

SOURCE: MCB CAMP LEJEUNE, MARCH 2000



Baker

LEGEND

- – PHASE I RFI GROUNDWATER GRAB LOCATION
- – PHASE II RFI GROUNDWATER GRAB LOCATION
- – PHASE III RFI GROUNDWATER GRAB LOCATION
- – MONITORING WELL LOCATION

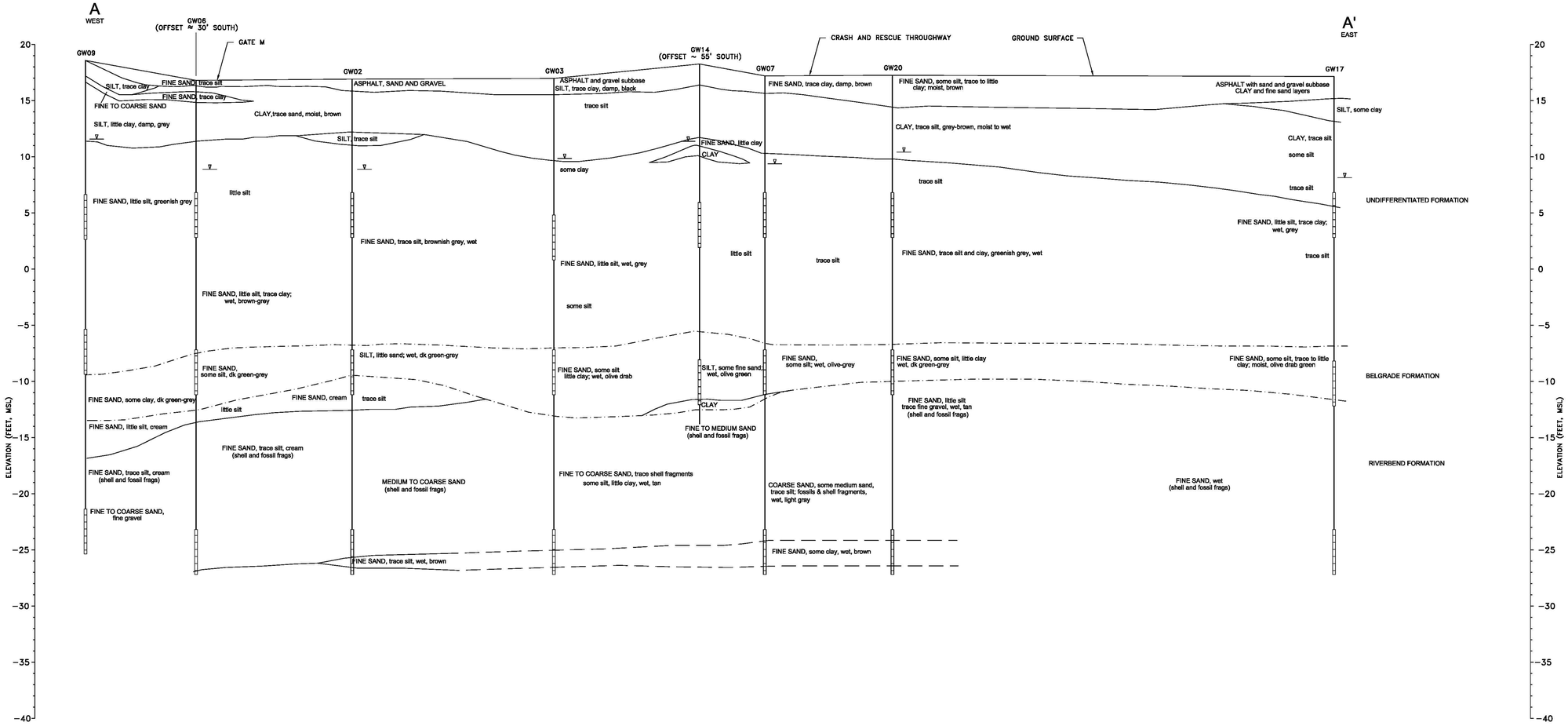
FIGURE 3-2

GEOLOGIC CROSS SECTION LOCATION MAP

RCRA FACILITY INVESTIGATION

SWMU 303/318, CTO-0091

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



Horizontal Scale: 1 inch = 30 ft.

Vertical Scale: 1 inch = 5 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

LEGEND

- GEOPROBE® SP-15 SCREEN INTERVAL
- ESTIMATED CONTACT
- FORMATION CONTACT
- PROJECTED CONTACT
- GROUNDWATER ENCOUNTERED DURING DRILLING

REVISIONS

DRAWN	MKD/WJH
REVIEWED	RMS
S.O.#	104559
CADD#	2005_303_318_3-3

NORTH

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

MICHAEL BAKER JR., Inc.
Moon Township, Pennsylvania

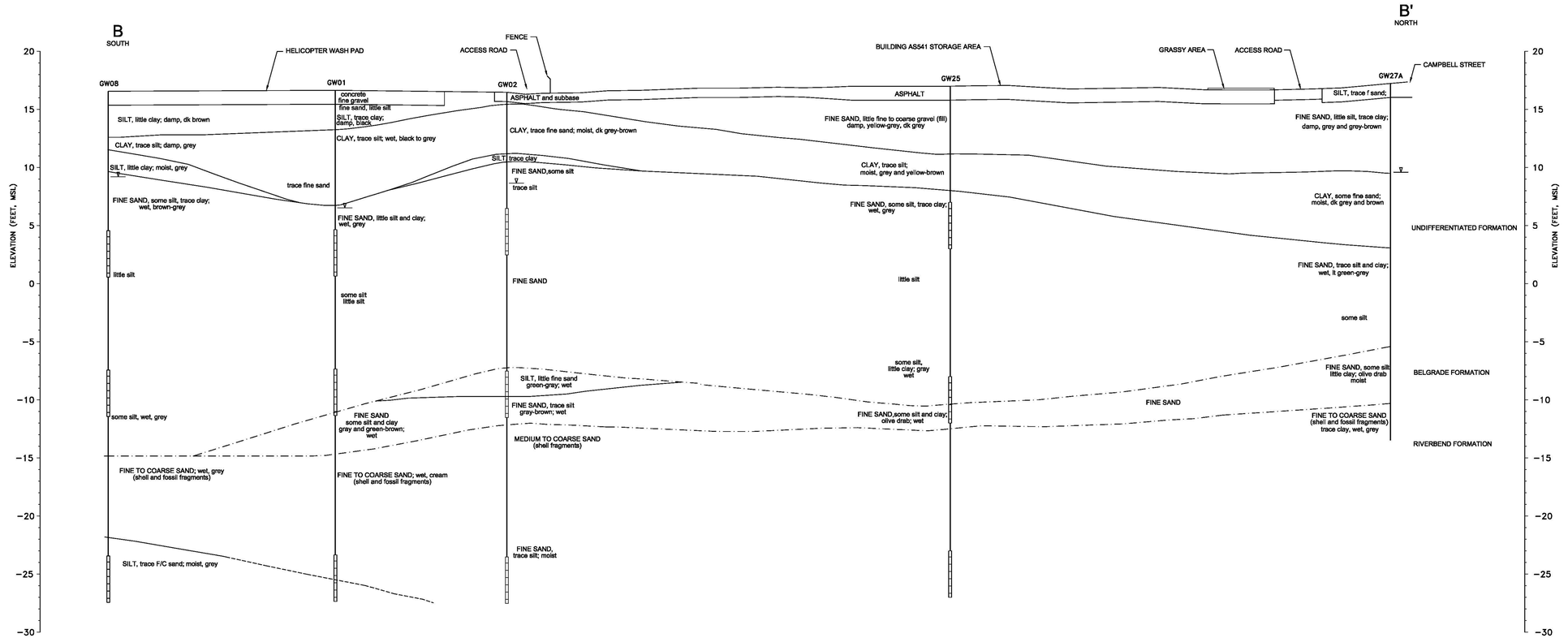
Baker
Michael Baker Jr., Inc

CROSS SECTION MAP
A-A'

SCALE HORIZONTAL 1" = 30'
VERTICAL 1" = 5'

DATE JUNE 2005

SHEET NO.
3-3



30 0 15 30 60
Horizontal Scale: 1 inch = 30 ft.
5 0 2.5 5 10
Vertical Scale: 1 inch = 5 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

LEGEND

- GEOPROBE® SP-15 SCREEN INTERVAL
- ESTIMATED CONTACT
- FORMATION CONTACT
- PROJECTED CONTACT
- GROUNDWATER ENCOUNTERED DURING DRILLING

REVISIONS

DRAWN	MKD/WJH
REVIEWED	RMS
S.O.#	104559
CADD#	2005_303_318_3-4

NORTH

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

MICHAEL BAKER JR., Inc.
Moon Township, Pennsylvania

Baker
Michael Baker Jr., Inc

CROSS SECTION MAP
B-B'

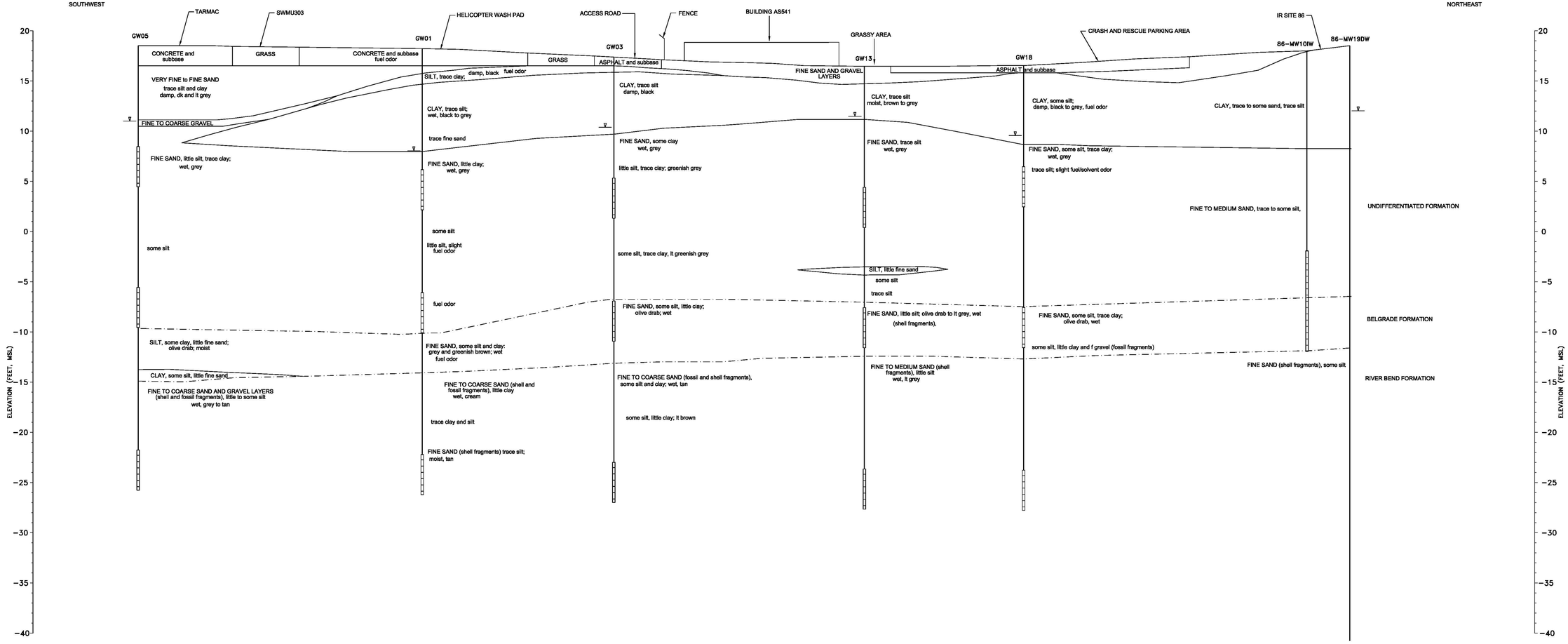
SCALE HORIZONTAL 1" = 30'
VERTICAL 1" = 5'

DATE JUNE 2005

SHEET NO.
3-4

C
SOUTHWEST

C'
NORTHEAST



30 0 15 30 60
Horizontal Scale: 1 inch = 30 ft.

5 0 2.5 5 10
Vertical Scale: 1 inch = 5 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

LEGEND

- GEOPROBE® SP-15 SCREEN INTERVAL
- ESTIMATED CONTACT
- FORMATION CONTACT
- PROJECTED CONTACT
- GROUNDWATER ENCOUNTERED DURING DRILLING

REVISIONS

DRAWN	MKD/WJH
REVIEWED	RMS
S.O.#	104559
CADD#	2005_303_318_3-5

NORTH

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

MICHAEL BAKER JR., Inc.
Moon Township, Pennsylvania

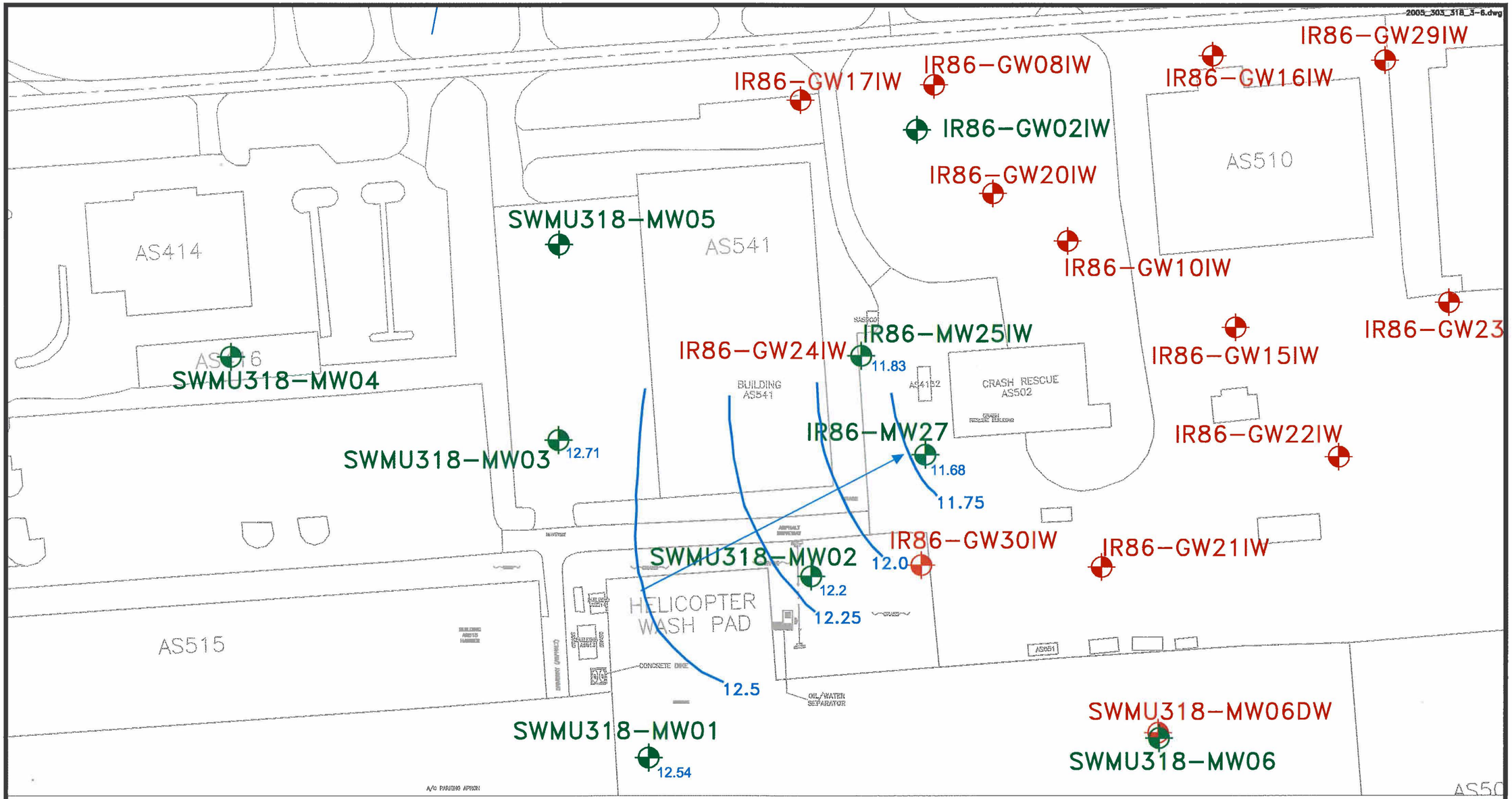
Baker
Michael Baker Jr., Inc

CROSS SECTION MAP
C-C'

SCALE HORIZONTAL 1" = 30'
VERTICAL 1" = 5'

DATE JUNE 2005

SHEET NO.
3-5



Baker

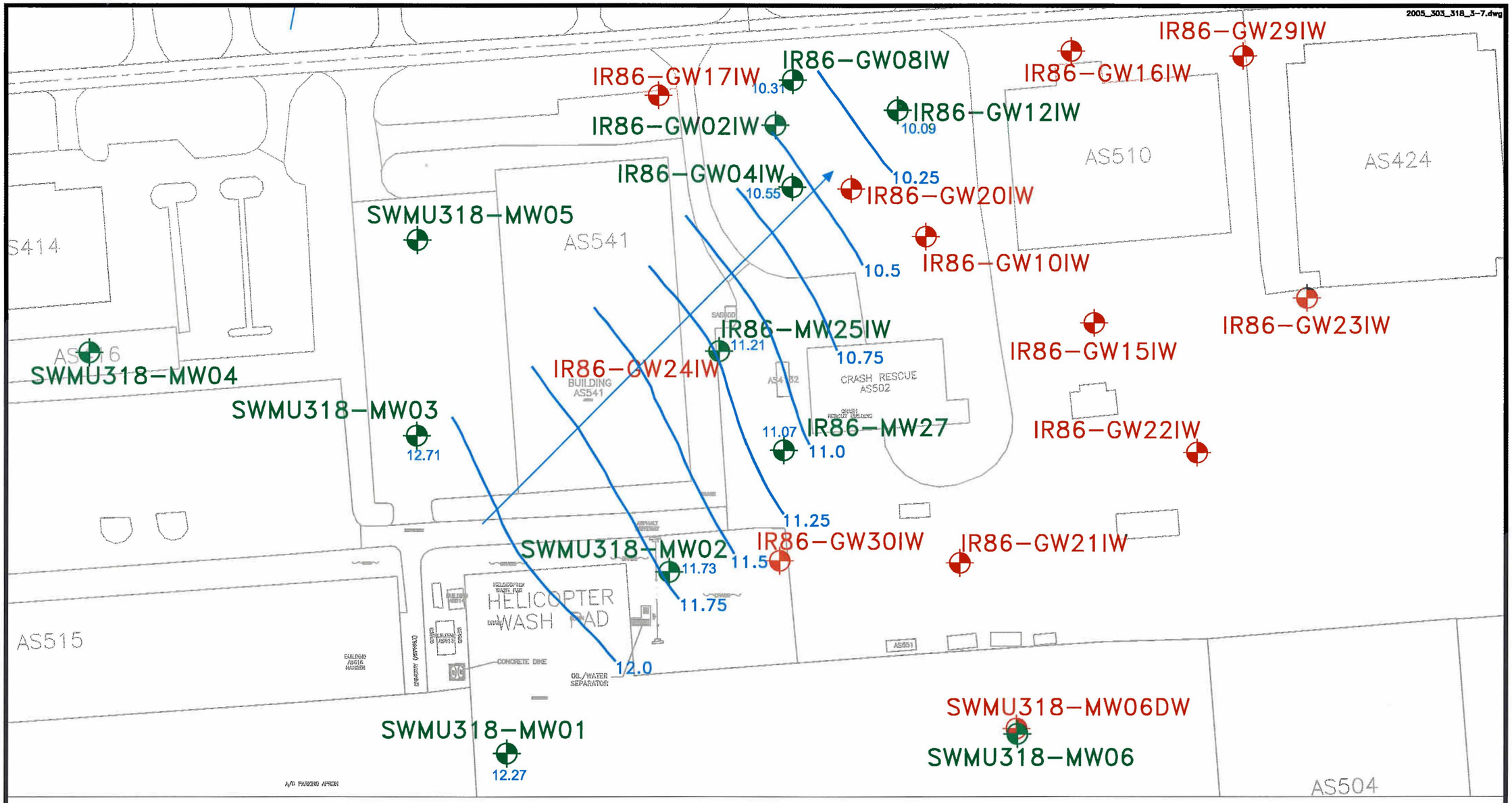
SOURCE: MCB CAMP LEJEUNE, 2000.

100 0 50 100
1 inch = 100 ft.

LEGEND

- SHALLOW MONITORING WELL
- DEEPER MONITORING WELL
- GROUNDWATER FLOW ARROW
- 11.75 – GROUNDWATER CONTOUR LINE AND ELEVATION

FIGURE 3-6
SHALLOW GROUNDWATER CONTOUR MAP
APRIL 2004
RCRA FACILITY INVESTIGATION
SWMU 303/318, CTO-0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



Baker

SOURCE: MCB CAMP LEJEUNE, 2000.

100 0 50 100
1 inch = 100 ft.

LEGEND

- SHALLOW MONITORING WELL
- DEEPER MONITORING WELL
- GROUNDWATER FLOW ARROW
- 11.75 – GROUNDWATER CONTOUR LINE AND ELEVATION

FIGURE 3-7
SHALLOW GROUNDWATER CONTOUR MAP
JUNE 2004
RCRA FACILITY INVESTIGATION
SWMU 303/318, CTO-0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

2005_303_318_3-8.dwg

DRAINAGE DITCH

POINT OF EXIT (EAST)

END WELL SCREEN

86-GW33IW

86-GW33DW

IR86-37IWC

IR86-37IWB

IR86-35IWC

IR86-35IWB

IR86-35IWA

86-GW32IW

IR86-36IWC

IR86-36IWB

IR86-37IWA

IR86-36IWA

IR86-38IWB

IR86-38IWC

IR86-38IWA

86-GW28IW

86-GW31IW

86-GW31DW

BEGIN WELL SCREEN

POINT OF ENTRY (WEST)

IR86-GW29IW

IR86-GW17IW

IR86-GW08IW

IR86-GW16IW

IR86-GW02IW

12.52

IR86-GW20IW

SWMU318-MW05

12.46

IR86-GW10IW

IR86-MW25IW

IR86-GW24IW

12.52

IR86-GW15IW

IR86-GW23IW

SWMU318-MW04DW

12.96

SWMU318-MW04

SWMU318-MW03

12.92

IR86-MW27

12.67

IR86-GW22IW

SWMU318-MW07

12.99

IR86-GW30IW

IR86-GW21IW

SWMU318-MW02

12.54

SWMU318-MW05DW

SWMU318-MW06DW

12.41

SWMU318-MW06

SWMU318-MW01

12.52

SWMU318-MW08

12.68

13.00

12.90

12.80

12.70

12.60

12.50

12.40

AS130 AS131 AS132 AS213 AS214 AS215 AS216 AS217 AS218 AS221 AS222 AS224 AS225 AS320 AS312 AS425 AS426 AS424 AS510 AS541 AS414 AS410 AS402 AS406 AS430 AS427 AS572 AS591 AS578 AS515 AS524 AS504 HELICOPTER WASH PAD

Baker

SOURCE: MCB CAMP LEJEUNE, 2000.

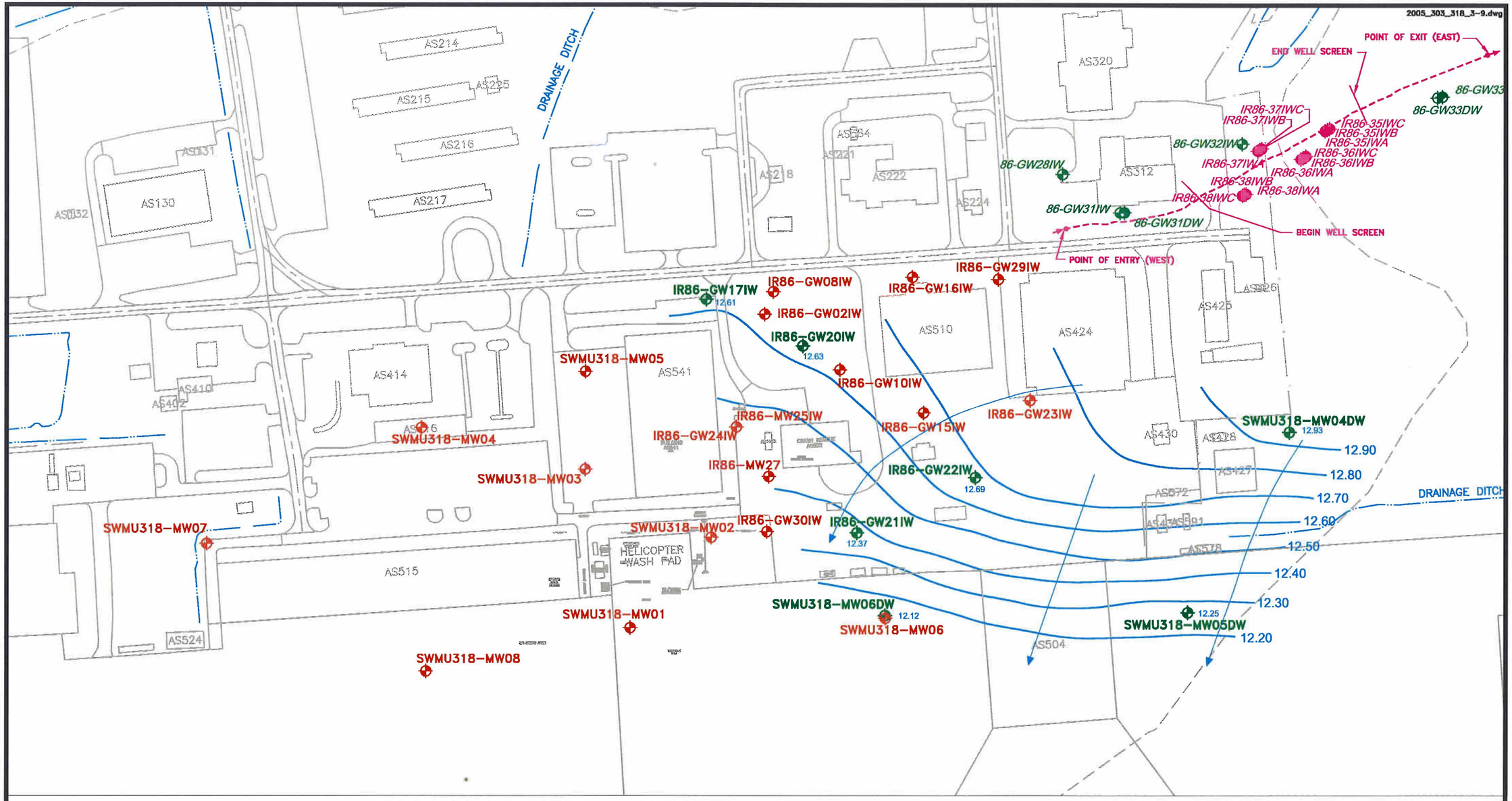
200 0 100 200

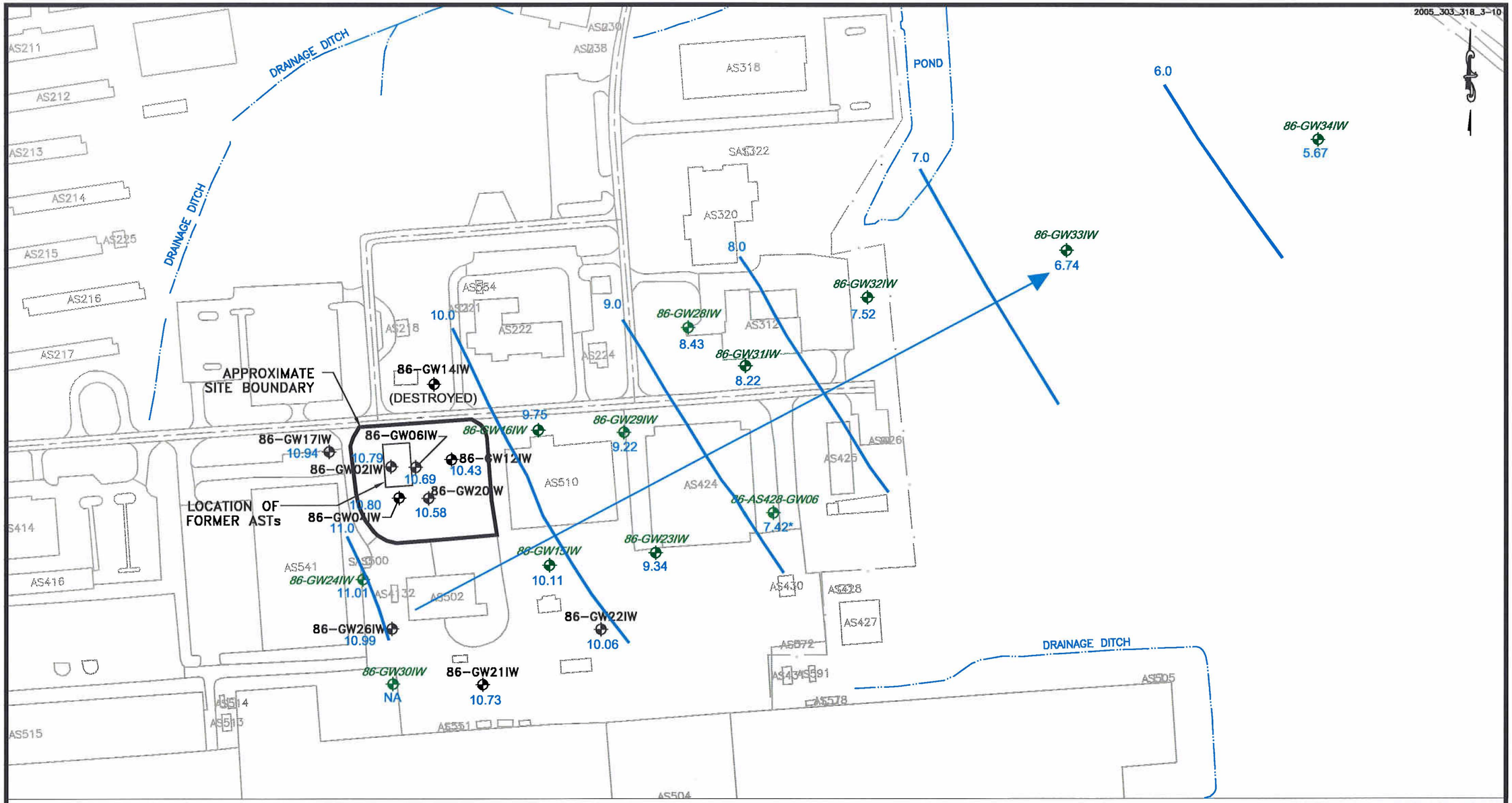
1 inch = 200 ft.

LEGEND

- SHALLOW MONITORING WELL
- DEEPER MONITORING WELL
- GROUNDWATER FLOW ARROW
- 11.75 – GROUNDWATER CONTOUR LINE AND ELEVATION
- HORIZONTAL WELL
- NEW MONITORING WELLS (REMEDIATION)

FIGURE 3-8
SHALLOW GROUNDWATER CONTOUR MAP
FEBRUARY 2005
RCRA FACILITY INVESTIGATION
SWMU 303/318, CTO-0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA


2005_303_318_3-9.dwg
DRAINAGE DITCH
AS214
AS215
AS216
AS217
AS225
AS130
AS137
AS152
AS218
AS221
AS222
AS224
AS234
AS320
AS312
AS425
AS426
AS510
AS424
AS414
AS410
AS402
AS416
AS541
AS515
AS524
AS430
AS428
AS427
AS672
AS491
AS478
AS504
HELICOPTER WASH PAD
POINT OF EXIT (EAST)
END WELL SCREEN
BEGIN WELL SCREEN
POINT OF ENTRY (WEST)
86-GW33
86-GW33DW
86-GW32IW
86-GW28IW
86-GW31IW
86-GW31DW
IR86-37IWC
IR86-37IWB
IR86-37IWA
IR86-35IWC
IR86-35IWB
IR86-35IWA
IR86-36IWC
IR86-36IWB
IR86-36IWA
IR86-38IWB
IR86-38IWC
IR86-38IWA
IR86-GW29IW
IR86-GW16IW
IR86-GW17IW
12.61
IR86-GW08IW
IR86-GW02IW
IR86-GW20IW
12.63
IR86-GW10IW
IR86-GW23IW
IR86-GW15IW
IR86-MW25IW
IR86-GW24IW
IR86-MW27
IR86-GW22IW
12.69
IR86-GW30IW
IR86-GW21IW
12.37
SWMU318-MW05
SWMU318-MW04
SWMU318-MW03
SWMU318-MW07
SWMU318-MW02
SWMU318-MW01
SWMU318-MW08
SWMU318-MW06DW
12.12
SWMU318-MW06
SWMU318-MW04DW
12.93
12.25
SWMU318-MW05DW
12.90
12.80
12.70
12.60
12.50
12.40
12.30
12.20
DRAINAGE DITCH
200 0 100 200
1 inch = 200 ft.
SOURCE: MCB CAMP LEJEUNE, 2000.
LEGEND
– SHALLOW MONITORING WELL
– DEEPER MONITORING WELL
– GROUNDWATER FLOW ARROW
11.75 – GROUNDWATER CONTOUR LINE AND ELEVATION
– HORIZONTAL WELL
– NEW MONITORING WELLS (REMEDIATION)
Baker
FIGURE 3-9
GROUNDWATER CONTOUR MAP
UPPER CASTLE HAYNE AQUIFER
FEBRUARY 2005
RCRA FACILITY INVESTIGATION
SWMU 303/318, CTO-0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



NOTE:
-WELLS SHOWN IN REGULAR FONT ARE NOT INCLUDED IN THE MONITORING PROGRAM.

SOURCE: MCB CAMP LEJEUNE, 2000.

LEGEND

86-GW04IW	– INTERMEDIATE MONITORING WELL
→	– INTERMEDIATE GROUNDWATER FLOW DIRECTION
	– GROUNDWATER CONTOUR
10.80	– GROUNDWATER ELEVATION (MSL) MEASURED ON 01/26/05
*	– DATA POINT NOT USED IN CONTOUR INTERPRETATION
NA	– DATA POINT NOT MEASURED

Baker

FIGURE 3-10
GROUNDWATER CONTOUR MAP
UPPER CASTLE HAYNE AQUIFER
JANUARY 2005
OPERABLE UNIT NO. 20 – SITE 86
SWMU 303/318, CTO-0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

4.0 SITE ASSESSMENT AND EVALUATION

To adequately assess the impact (if any) that historic and present operations may have had on a site, analytical results from samples of soil and groundwater collected during the RFI were evaluated. This included reviewing information regarding data quality, selection of the proper criteria used for comparison of the analytical data, and evaluating those analytical results that exceeded comparison criteria and were related to SWMU operations. This section discusses this evaluation.

4.1 Data Quality

The following sections present a summary of the data validation/usability assessment as well as a discussion of non-SWMU related contaminants. The purpose of this section is provide confidence in the reliability of the data and to eliminate any data from the data set that may be naturally occurring or not related to activities/operations conducted at the SWMU.

4.1.1 Data Validation/Usability Assessment

Data quality evaluations were conducted by Intergrate, Inc and e*data, inc. Intergrate, Inc. conducted the data validation for the first and second phases of the RFI, and e*data, inc. performed data validation on the most recent phase of the investigation. Laboratory analytical results were evaluated to assess the technical adequacy and usability of the data. Validation of the data, through established procedures, served to reduce the inherent uncertainties associated with its usability. The data were technically reviewed based on the specifications set forth in the most recent version of the USEPA National Functional Guidelines. Level M-3 (organics) and IM-2 (metals) technical reviews were performed and included a review/evaluation of the laboratory reporting forms, raw data, instrument printouts, run logs, and supporting data provided by the laboratory.

The analytical data tables included in Section 4.3 indicate which results are considered non-compliant when compared to the requirements set forth in the aforementioned guidelines. The majority of these non-compliant results represents minor quality control problems and do not affect data usability. In most cases, these problems are typical analytical difficulties or are the result of sample matrix problems. The non-compliant results have been “qualified” with an

associated explanatory note to clarify the analytical results. The typical qualifiers used included the following:

- J Estimated result; result may not be accurate or precise
- U Not detected
- UJ Not detected. The reported value may not be accurate or precise.
- D Sample result is diluted.

Data qualified as "J" were retained as estimated values. Estimated analytical results within a data set are common and considered usable by the USEPA. Data may be qualified as estimated for several reasons, including an exceedence of holding times, high or low surrogate recovery, or intra-sample variability. In addition, values may be assigned an estimated "J" qualifier if the reported value is below the Contract Required Detection Limit (CRDL) or the Contract Required Quantitation Limit (CRQL). No data were rejected. Overall, the data generated are usable, as qualified, for its intended use. The data validation reports are included as Appendix F.

Split samples were collected during the RFI to assess the reliability of the mobile laboratory data. Samples were split and analyzed via SW-846 Method 8260B by Katadin Analytical Services, Inc. Tables 4-1 and 4-2 present the soil sample split data. While there is no guidance on comparison of split sample data, a rule-of-thumb of 50% relative percent difference (RPD) for soil is considered adequate. The RPD is calculated by subtracting the mobile laboratory concentration from the fixed-based laboratory concentration, then dividing this number by the sum of the mobile and fixed-based concentrations, dividing the result of this calculation by 2, then multiplying by 100.

For the data collected in 2004, there were three soil sample splits collected and both the fixed-based and mobile laboratory reported non-detect for most VOCs. The mobile laboratory detected m/p xylenes while the fixed-based laboratory did not, resulting in an RPD of approximately 28%. However, this RPD may be misleading because the mobile laboratory detected concentration for m/p xylenes was below the detection limits for the fixed-based laboratory. Both Laboratories detected toluene, with an RPD of nearly 37%. Both values fall within the expected RPD range and there is excellent agreement between the non-detects in each of the samples.

The 2005 soil data was similar to the 2004 data. There were five samples collected for split sample analysis. Of the ten compounds detected in the split samples, four were not included in the list of compounds analyzed by the fixed-based laboratory, and two were not included in the list of compounds analyzed by the mobile laboratory, leaving four compounds to compare. Although the RPD for these four compounds ranged from 0% to nearly 50%, in all but one case the compound was detected by the mobile laboratory at a concentration below the detection limit of the fixed-based laboratory. The only exception was sample SWMU318-SB26-02, where trans-1,2-DCE was detected in the sample sent to the fixed-based laboratory and detected at 3J μg/kg and the mobile laboratory did not detect this compound. The RPD was calculated to be nearly 20%, well within the acceptable range.

Tables 4-3 and 4-4 present the groundwater sample split data collected in 2004 and 2005, respectively. Because groundwater is expected to be more homogeneous, a 40% RPD is considered acceptable for groundwater. Table 4-3 provides a comparison of the six split samples collected in 2004, comparing 16 VOCs, for a total of 144 comparison pairs. In each case that a constituent exceeded 20% RPD, it was observed that either the fixed-based or mobile laboratory did not detect the constituent because it was below the method detection limit for that laboratory. In each of these cases, the laboratory with a lower detection limit for a given sample was able to detect a VOC, generally at estimated levels. Rather than laboratory error, these high RPDs can be attributed to comparing relatively high detection limits (e.g., 10 ppb) to relatively low detections (e.g., 1 ppb). The remaining comparisons resulted in a RPD of approximately 17% or less. This indicates very good correlation between the two laboratories for positive detections.

The 2005 groundwater split sample data is compared on Table 4-4. This data is very similar to the 2004 data except that the RPD for those constituents that were detected by both laboratories was slightly higher. Instead of comparison of these detected constituents being less than approximately 17%, the 2005 data approached 29%. This RPD is still within the acceptable range and therefore, indicates good correlation between the two laboratories for the positively detected compounds. The split data collected during the three phases of the RFI indicates that the mobile laboratory data is sufficient for determining the nature and extent of contamination at SWMUs 303/318.

The mobile laboratories used for all three phases of the RFI were able to achieve detection limits below the North Carolina Administrative Code (NCAC) 2L Standard for most of the constituents of concern. In soils, detection limits for some compounds were above NCAC 2L Standard, including benzene, methylene chloride, tetrachloroethene (PCE), and bromoform. In groundwater, detection limits for some compounds were above NCAC 2L Standard, including benzene, bromodichloromethane, bromoform, hexachlorobutadiene, PCE, and vinyl chloride.

Current analytical methods cannot achieve the parts per trillion (ppt) necessary to detect vinyl chloride below the NCAC 2L Standard. Detection limits below the NCAC 2L standard can be achieved for PCE in situations were interferences are limited. Thus, in accordance with NCAC 2L Groundwater Quality Standards, the extent of PCE and vinyl chloride are to "practical quantitation limits" (detection limits).

4.1.2 Non-SWMU Related Contaminants

Some constituents detected in soil and groundwater at the SWMU can be attributed to non-SWMU related conditions or activities. Two primary sources of non-SWMU related results include laboratory contaminants and naturally occurring inorganic elements. A discussion of non-SWMU related contaminants is provided in the sections that follow.

Laboratory Contaminants

Blank samples (e.g., equipment rinsate blanks, field blanks, laboratory blanks) provide a measure of contamination that has been introduced into a sample set during the collection, transportation, preparation, and/or analysis of the samples. To remove non-SWMU related contaminants from further consideration, the data validator compared concentrations of constituents detected in the blanks to concentrations of the same constituents detected in the environmental samples.

Common laboratory contaminants (i.e., acetone, 2-butanone, methylene chloride, toluene, and phthalate esters) were considered as positive results in the environmental samples only when observed concentrations exceeded ten times the concentration detected in the associated blank(s). If the concentration of a common laboratory contaminant was less than ten times the concentration detected in the associated blank(s), then it was concluded that the constituent was "Not Detected" in that particular sample (USEPA, 1989a). Methylene chloride and toluene were

the only common laboratory contaminants detected in any of the blank samples. Methylene chloride was detected in all five trip blanks submitted for analysis and toluene was detected in equipment rinsate blank samples ER01-020205 and ER04-020805.

Other constituents detected in blanks that are not considered common laboratory contaminants were considered as positive results in the environmental samples only when observed concentrations exceeded five times the concentration detected in the associated blank(s) (USEPA, 1989a). Constituent concentrations less than five times the concentration detected in the associated blank(s) were considered to be "Not Detected" in that sample. A summary of constituents detected in the equipment rinsate blanks, trip blanks, and field blanks are provided in Appendix F.

Field Blank sample number FB03-021805 was collected from a potable water source located adjacent to the wash pad and used for decontamination of drilling and sampling equipment via steam cleaning. This sample contained the majority of the compounds that were detected in the blank samples. This field blank contained detectable levels of bromodichloromethane, chloroform, dibromochloromethane, arsenic, barium, mercury, selenium, and silver. The bromodircloromethane, chloroform, dibromochloromethane are likely the result of chlorination process for potable water sources. The inorganics detected in this sample were all below the NCAC 2L groundwater standard.

Naturally-Occurring Inorganic Elements

Naturally occurring inorganic elements occur ubiquitously in soil and groundwater and distinguishing between background concentrations and SWMU-related concentrations can be difficult. As a result, a Base background soil study and Area of Concern (AOC) background soil study were conducted at the Base in June and July 2000. A Base background groundwater study was conducted in March and April 2002.

The Base background soil study (Baker, 2001a) included surface and subsurface soil sampling at 50 borings advanced in areas that had no known history of any activity that may have biased inorganic concentrations in the soils. The samples were analyzed for Target Analyte List (TAL) metals. There were observed differences between the data sets but these differences were primarily based on the soil type within each soil horizon. As the soils were separated into data

sets based on soil type, it became apparent that the majority of detected constituents were more prevalent in fine-grained soils (clay and silts) than in coarse-grained soils (sands). This was an expected finding since metals are known to adsorb onto clays through formation of ionic bonds.

The purpose of the AOC background soil study (Baker, 2001b) was to establish background concentrations of inorganics for the group of SWMUs located within the AOCs that would be representative of conditions immediately surrounding the SWMU. An inorganic constituent could be eliminated as a COPC if its concentration is less than the AOC background value for that constituent; arguing that the concentration is a result of Base activities in that AOC and is not directly associated with the SWMU. The AOCs were established based on geographical location, geology, and type of SWMU(s). Surface and subsurface soil samples were collected from 165 borings and analyzed for TAL metals.

The background groundwater study (Baker, 2002) included installing temporary monitoring wells at 25 locations selected to provide spatial coverage across the Base. Two clustered wells were installed at each location. Each cluster contained one shallow well (upper surficial aquifer) and one deeper well (lower surficial aquifer) for a total of 50 temporary wells. Groundwater samples were collected from each well and analyzed TAL metals. In general, similar inorganic constituents were detected in both the shallow and deeper portions of the surficial aquifer. However, the deeper portion of the surficial aquifer appeared to exhibit higher concentrations of metals than the shallow portion.

Statistical analyses were performed on the soil and groundwater data sets to determine the underlying distribution of the data, identify outliers, determine means and standard deviations, and compare data sets of different lithology and depth. The surface and subsurface soil data sets were then segregated according to soil type. The groundwater data set was segregated according to depth.

4.2 Comparison Criteria and Standards

To assist in evaluation of the laboratory analytical results and extent of contamination, the concentrations of constituents detected in soil were compared to USEPA Region IX Preliminary Remediation Goals (PRGs) and North Carolina Soil-to-Groundwater Concentrations (STGCs). Concentrations of constituents detected in groundwater were compared to North Carolina Water

Quality Standards for Groundwater (2L Standards) and USEPA Region IX Tap Water PRGs. As a secondary comparison, metals detected in soil and groundwater at concentrations exceeding the regulatory-driven screening criteria (e.g., PRGs, STGCs, 2L Standards) were compared to Base-wide and/or AOC-specific background screening values. A brief explanation of the criteria used for comparison of the SWMU-specific data is presented below.

USEPA Region IX Industrial Soil and Tap Water PRGs

USEPA Region IX PRGs (USEPA, 2004) are risk-based tools used to screen constituents in environmental media, trigger further investigation, and/or provide an initial cleanup goal if applicable. They are being used to streamline and standardize all stages of the risk decision-making process. The PRGs combine current EPA toxicity values with "standard" exposure factors to estimate constituent concentrations in environmental media (soil, water, and air) that are considered protective of humans, including sensitive groups, over a lifetime. Constituent concentrations above these levels would not automatically trigger a response action; however, exceeding a PRG suggests that further evaluation of the potential risks that may be posed by site contamination is appropriate.

Given the land use of SWMUs 303/318 and surrounding area, use of the industrial PRGs for soil was considered appropriate.

North Carolina STGCs

North Carolina STGCs (NC, 2005) are soil screening levels protective of groundwater and are based on the current 2L Standards or Interim Maximum Allowable Concentrations (IMACs). If there are no 2L Standards or IMAC values, a soil-to-groundwater concentration can be calculated based on the recommended 2L Standard, or if a recommended 2L Standard is not available, the Maximum Contaminant Level Goals (MCLGs), which are based on a 10^{-6} carcinogenic risk.

North Carolina 2L Standards

NCAC 2L Standards (NC, 2005) are maximum allowable concentrations resulting from any discharge of contaminants to the land or waters of the state, which may be tolerated without

creating a threat to human health or which otherwise render the groundwater unsuitable for its intended purpose.

Base Background (Soil and Groundwater)/AOC-Specific Background (Soil)

Based on statistical evaluation of the background data sets, metals frequently detected in soil and groundwater were either normally or log-normally distributed. Metals with frequent non-detections were considered neither normally or log-normally distributed. In the later case, the underlying distribution was assumed to be normal. Background values for metals with a normal or assumed normal distribution pattern (neither normally or log-normally distributed) were calculated based on the arithmetic mean plus two standard deviations. Background values for metals with a lognormal distribution pattern were calculated based on the log arithmetic mean plus two standard deviations. The combined surface soil, sand subsurface soil (Baker, 2001a), and uppermost and lowermost surficial groundwater (Baker, 2002) Base background data sets were used for comparison. In addition, the AOC 2 background data set for surface and subsurface soil (Baker, 2001b) was used for comparison.

The following decision process was adopted for this report to screen each constituent to determine if an evaluation of the nature and extent of that constituent was warranted:

- If a constituent did not exceed the regulatory-driven screening values (e.g., PRGs, STGCs, 2L Standards), then it was considered as a constituent below screening levels that requires no further action. An evaluation of the nature and extent was not discussed.

- If a constituent exceeded the regulatory-driven screening values and background screening values (metals only), that constituent may be attributable to past practices at the SWMU, and an evaluation of the nature and extent was discussed (see Section 4.4).

- If a constituent exceeded the regulatory-driven screening values, but not the background screening values (metals only), that constituent was considered present at background concentrations and an evaluation of the nature and extent was not discussed even though the constituent exceeded the regulatory-driven screening values.

- If a constituent exceeded the background screening values (metals only), but not the regulatory-driven screening values, that constituent might be a SWMU-related contaminant, but poses no risk to human health or groundwater. An evaluation of the nature and extent was not discussed.

It should be noted that human health and ecological risk assessments generally follow guidelines that are independent of any discussion regarding the nature and extent of contamination. Thus, the list of COPCs may differ between the nature and extent and the risk assessments. Resolution of any differences will be performed in Section 8.0, Conclusions and Recommendations.

4.3 Analytical Results

This section discusses the analytical results for SWMUs 303/318. The analytical results tables presented in this section include only those constituents that were detected (i.e., "Hits"); the tables do not include results for every constituent analyzed. Complete sets of analytical results are included as Appendix F. This report includes the analysis of SWMU 318 data only. The most recent LTM data from the downgradient Site 86 was included to support the analysis of SWMU 318 data and is included in Appendix F. The Amended RI data from Site 86 was not included since it is now at least three years old compared with the SWMU 318 data. Consequently, constituent distribution patterns rendered herein do not represent known conditions at Site 86.

Isopleth maps were used to depict the distribution of constituents within soil. Only three constituents were modeled. They included naphthalene, isopropylbenzene, and butylbenzene. They were chosen because they are the most widely distributed constituents and exhibit the highest concentrations. Other constituents did not exceed screening criteria or were not distributed in any discernable pattern, and therefore were not modeled. Naphthalene and butylbenzene were detected throughout the soil zone. Isopropylbenzene was detected mainly in surface soil samples, with only one detection in subsurface soil. Consequently, the distribution of isopropylbenzene was only modeled in surface soil.

The constituent distributed was modeled using the Kriging algorithm in Surfer v7.0 software. Multiple algorithms were examined, however the Kriging solution showed the best fit to the data. A logarithmic distribution was used.

For groundwater detections, five constituents were selected to depict their distribution pattern. They were benzene, naphthalene, trichloroethene (TCE), cis-1,2-dichloroethylene (cis-1,2-DCE), and vinyl chloride. As with the compounds modeled in the soils, these constituents were chosen because they are the most widely distributed constituents and exhibit the highest concentrations. Other constituents did not exceed screening criteria or were not distributed in any discernable pattern.

The constituent distributed was modeled using the Kriging algorithm in Surfer v7.0 software. As with the soil data, multiple algorithms were examined with the Kriging solution showing the best fit to the data. Again, a logarithmic distribution was used. Additionally, the data pattern appeared to exhibit an anisotropy (along an approximately east-west line). For the Kriging algorithm, this translated to an anisotropy factor of 0.6 at a -70° angle.

In order to get a complete evaluation of the site, the data used in the modeling represent multiple points in time. Groundwater grab samples from borings GW01 through GW30 were collected in 2004 and additional grab samples (GW31 through GW51) were collected in 2005. Permanent groundwater monitoring wells were sampled in both 2004 and 2005. Some wells were sampled multiple times and others were not. In the cases where the wells were sampled multiple times, the most recent data available was used for this modeling exercise.

4.3.1 Surface Soil

Surface soil samples from 26 locations were analyzed for VOCs, SVOCs, and/or metals. Mobile Laboratory analytical results for positive detections are presented on Table 4-5 and the fixed-based analytical results for positively detected constituents are listed on Table 4-6.

Volatile Organic Compounds

Nineteen VOCs were detected in one or more of the surface soil samples. Of these 19 VOCs, the following four constituents were detected at concentrations that exceeded the established regulatory-driven screening values:

- Butylbenzene – Butylbenzene was detected in five of the surface soil samples at concentrations ranging from 976 to 31,700 µg/kg. The detected concentrations in

samples SWMU318-SB07-00 and SWMU318-SB08-00 exceeded the North Carolina STGC (4,310 µg/kg). The distribution of this compound in the surface soils is illustrated on Figure 4-1.

- Isopropylbenzene – Isopropylbenzene was detected in 3 of the surface soil samples at concentrations ranging from 384 to 1,786 µg/kg. The detected concentration in sample SWMU318-SB02-00 (1,786 µg/kg) exceeded the North Carolina STGC (1,680 µg/kg). The distribution of isopropylbenzene is depicted on Figure 4-2.

- Naphthalene – Naphthalene was detected in seven of the surface soil samples at concentrations ranging from 1.1J to 57,800 µg/kg. Five of the seven detections were at concentrations exceeding the North Carolina STGC (585 µg/kg). No concentrations exceeded the USEPA Region IX PRG. The distribution of naphthalene in surface soils is depicted on Figure 4-3.

- Tetrachloroethene – Tetrachloroethene was detected in one surface soil sample. The constituent was detected in sample SWMU318-SB07-00 at a concentration (42 J µg/kg) exceeding the North Carolina STGC (7.42 µg/kg) but below the USEPA Region IX PRG (3,422 µg/kg). Given the limited number of detections, the distribution of this compound in surface soils is not represented on a map.

Semi-Volatile Organic Compounds

Twenty SVOCs (primarily polynuclear aromatic hydrocarbons [PAHs]) were detected in one or more of the surface soil samples. Of these 20 SVOCs, benzo(a)anthracene (350 J µg/kg), benzo(a)pyrene (380 J µg/kg), and naphthalene (2900 µg/kg) were detected in sample SWMU318-SB01-00 at concentrations exceeding the North Carolina STGCs. In addition, benzo(a)pyrene exceeded the USEPA Region IX PRG. The remaining SVOCs detected in the samples did not exceed the established regulatory-driven screening values. Table 4-6 summarized the detected SVOCs and demonstrates the distribution of SVOC exceedences in surface soil. Given the limited number of detected compounds, maps illustrating the distribution of detected compounds were not developed. However, it should be noted that the sample containing these SVOCs was located directly beneath the wash pad in the vicinity of the sample locations where the VOCs were detected at concentrations exceeding criteria.

Metals

Each of the eight RCRA metals were detected in one or more of the surface soil samples. Of these eight metals, the following two exceeded the regulatory-driven screening values, as well as the background screening values:

- Arsenic – Arsenic was detected in five of the surface soil samples at concentrations ranging from 0.48 J to 2.6 mg/kg. The detected concentration in sample SWMU318-SB09-00 (2.6 mg/kg) exceeded the USEPA Region IX PRG (1.59 mg/kg), as well as the AOC and Base background screening values (1.71 mg/kg and 0.88 mg/kg, respectively). The other four detected concentrations did not exceed the regulatory-driven screening values. A map was not prepared for this constituent since it was detected at a single location at concentrations exceeding criteria. The detected concentration in sample SWMU318-SB09-00 was not much higher than demonstrated background concentrations and is likely the result of naturally occurring or anthropogenic activities.

- Silver – Silver (4.6 J mg/kg) was detected in sample SWMU318-SB01-00 at concentrations exceeding the North Carolina STGC (0.223 mg/kg), as well as the AOC and Base background screening values (0.23 mg/kg and 0.37 mg/kg, respectively). Silver was not detected in the any of the remaining samples. The detection of this compound appears to be isolated and unrelated to historic operations at the SWMU.

Mercury was detected in two of the surface soil samples at concentrations exceeding the North Carolina STGC. However, the concentrations were below the background concentrations and therefore considered not to be a result of SWMU-related activities.

4.3.2 Subsurface Soil

Subsurface soil samples from 29 locations were analyzed for VOCs, SVOCs, total oxidant demand (TOD), total organic carbon (TOC), and/or metals. The TOD and TOC analyses were for use in the remedial technology evaluation. These data were collected in case a Corrective Measure Study (CMS) is required at these SWMUs. Mobile laboratory analytical results for positive detections are presented on Table 4-7 and the positive detections reported by the fixed-based laboratory are presented on Table 4-8.

Volatile Organic Compounds

Twenty-three VOCs were detected by the mobile laboratory in one or more of the subsurface soil samples. Of these 23 VOCs, only bromoform (5 J µg/kg) and naphthalene (3,630 µg/kg) were detected in sample SWMU318-SB03-04 at concentrations exceeding the North Carolina STGCs (1.25 µg/kg and 585 µg/kg, respectively). The remaining VOCs detected in the subsurface soil samples did not exceed the established screening criteria. It should be noted that this sample was collected along the southern edge of the wash pad. Figures 4-4 and 4-5 depict the naphthalene concentrations in the subsurface soils.

Semivolatile Organic Compounds

Twenty-one SVOCs (primarily polynuclear aromatic hydrocarbons [PAHs]) were detected in one or more of the subsurface soil samples. One of these compounds is naphthalene which was analyzed by the mobile laboratory as a volatile organic. This compound is in the VOCs list as well as the SVOCs list. Of the 21 SVOCs, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenzo(a,h)anthracene were detected in sample SWMU318-SB05-03 at concentrations exceeding the North Carolina STGCs. In addition, the detected concentration of benzo(a)pyrene in this sample also exceeded the USEPA Region IX PRG. Soil boring SWMU318-SB05 was advanced just north of the center of the wash pad. The remaining SVOCs detected in the samples did not exceed the screening criteria. Given the limited number of detected compounds that possessed concentrations in excess of the comparison criteria, a map was not prepared. These compounds were not detected frequently enough to require that a map be produced to better explain the pattern of detections.

Metals

Seven metals were detected in one or more of the subsurface soil samples. Of these seven metals, the following two exceeded the regulatory-driven screening values, as well as the background screening values:

- Arsenic – Arsenic was detected in 24 of the subsurface soil samples at concentrations ranging from 1 J to 51 mg/kg. The detected concentration in samples SWMU318-SB04-02 (51 mg/kg), SWMU318-SB14-03 (37.4 mg/kg), SWMU318-SB15-03 (20.7 mg/kg),

and SWMU318-SB17-03 (20.8 mg/kg) exceeded the North Carolina STGC (5.24 mg/kg) and USEPA Region IX PRG (1.59 mg/kg), as well as the AOC and Base background screening values (13.56 mg/kg and 1.62 mg/kg, respectively). Some of the other detected concentrations exceeded the regulatory-driven screening values; however, the concentrations were below AOC and/or Base background screening values. Soil boring location SWMU318-SB04 is located along the southern edge of the wash pad, and soil borings SWMU318-SB14, SWMU318-SB15, and SWMU318-SB17 are located along the eastern edge of Building AS 515.

- Mercury – Mercury was detected in 20 of the subsurface soil samples at concentrations ranging from 0.03 J to 0.11 mg/kg. The detected concentration in sample SWMU318-SB06-02 (0.11 mg/kg) exceeded the North Carolina STGC (0.015 mg/kg), as well as the AOC and Base background screening values (0.07 mg/kg and 0.08 mg/kg, respectively). This soil boring was advanced off the northeast corner of the wash pad. Some of the other detected concentrations exceeded the regulatory-driven screening values; however, the concentrations were below the AOC and/or Base background screening values.

Chromium was detected in six of the subsurface soil samples at concentrations exceeding the North Carolina STGC. However, the concentrations were below the AOC background screening value.

4.3.3 Groundwater

Groundwater samples were collected from 51 groundwater grab locations and 17 monitoring wells during the three phases of the RFI. Thirty grab sample locations and seven wells were sampled in 2004 and twenty-one grab sample locations and seventeen wells were sampled in 2005. Some of the monitoring wells were sampled in 2004 and then again in 2005. During the three phases of the RFI, the samples collected from groundwater grab locations and monitoring wells were analyzed for VOCs, SVOCs, and/or metals. The analytical results are divided into six tables. Not only are they divided into tables based on depth (shallow, intermediate, and deep groundwater), they are separated by mobile versus fixed-based laboratory results. Laboratory analytical results for positive detections are presented on Tables 4-9 through 4-14.

The following paragraphs discuss the groundwater results. Figures were developed illustrating the concentrations of benzene, naphthalene, TCE, cis-1,2-DCE and vinyl chloride in each of the groundwater intervals sampled. These constituents were chosen because they are the most widely distributed constituents and exhibit the highest concentrations. Other constituents did not exceed screening criteria or were not distributed in any discernable pattern.

Volatile Organic Compounds

Forty-seven VOCs were detected in one or more of the groundwater samples. Of these 47 VOCs, the following five VOCs were the prominent constituents detected in groundwater at the SWMU:

- Benzene – Benzene was detected in 52 of the groundwater samples at concentrations that exceeded comparison criteria. The detected concentrations ranged from 0.36 J to 220 µg/L. Thirty-eight of the detections were at concentrations that exceeded North Carolina 2L Standard (1 µg/L) and all exceeded the USEPA Region IX Tap Water PRGs (0.35 µg/L). It should be noted that the USEPA Region IX Tap Water PRGs are a very conservative comparison criteria. These values are developed for water that is intended for consumption.

- Naphthalene – Naphthalene was detected in 27 of the groundwater samples at concentrations exceeding comparison criteria. These concentrations range from 6.4 µg/L to 3,040 µg/L. Sixteen of the detected concentrations exceeded the North Carolina 2L Standard (21 µg/L) and all of these samples contained concentrations exceeding the USEPA Tap Water PRG (6.20 µg/L).

- Trichloroethene – Trichloroethene was detected in 77 of the groundwater samples at concentrations that exceed comparison criteria. These results range from 0.33 J to 7,120 D µg/L. Forty-three of the detected concentrations exceeded the North Carolina 2L Standard (2.8 µg/L) and all seventy-six of the detected concentrations exceeded the USEPA Tap Water PRG (0.03 µg/L).

- cis-1,2-Dichloroethene – cis-1,2-Dichloroethene was detected in 18 samples at concentrations ranging from 64 to 840 µg/L. Seventeen of these samples contained concentrations exceeding the North Carolina 2L Standard (70 µg/L) and all eighteen exceeded the USEPA Tap Water PRG (60.8 µg/L).

- Vinyl chloride – Vinyl chloride was detected in 35 of the groundwater samples at concentrations exceeding comparison criteria. The detected results for these samples range from 0.57 J to 203 µg/L. All of these samples exceeded the North Carolina 2L Standard (0.015 µg/L) and USEPA Tap Water PRG (0.02 µg/L).

Semivolatile Organic Compounds

Eight SVOCs were detected in one or more of the groundwater samples at concentrations exceeding comparison criteria. Naphthalene was not included as one of these SVOCs because it was analyzed as a VOC by the mobile laboratory and was included in the evaluation of VOCs. The following compounds were prominent constituents in groundwater samples collected during this investigation:

- Acenaphthene – Acenaphthene was detected in four of the groundwater samples at concentrations exceeding the North Carolina 2L Standard (80 µg/L). These detections ranged in concentration from 95 to 280 DJ µg/L. None of the detected concentrations exceeded the USEPA Tap Water PRG (365 µg/L).

- Carbazole – Carbazole was detected in seven groundwater samples at concentrations exceeding the USEPA Tap Water PRG (3.36 µg/L). These results ranged from 9 J to 52 µg/L.

- Dibenzofuran – Dibenzofuran was detected in five of the groundwater samples at concentrations exceeding comparison criteria. The detected concentrations ranged from 26 to 73 µg/L.

- 2,4-Dimethylphenol – 2,4-Dimethylphenol was detected in two of the groundwater samples at concentrations exceeding comparison criteria. One of the samples (SWMU318-GW06-01) contained concentrations exceeding both criteria at 990 D µg/L and the other sample (SWMU318-GW35) contained 370 J µg/L, exceeding the North Carolina 2L Standard of 140 µg/L but not the USEPA Tap Water PRG (730 µg/L).

- 2-Methylnaphthalene – 2-Methylnaphthalene was detected in eight groundwater samples at concentrations exceeding comparison criteria. Seven of the detected concentrations exceeded the North Carolina 2L Standard (14 µg/L) and all eight exceeded the USEPA Tap Water PRG (6.2 µg/L).

- 4-Methylphenol – 4-Methylphenol was detected in two of the groundwater samples (SWMU318-GW06-01 and SWMU318-GW35) at concentrations in excess of the North Carolina 2L Standard (3.5 µg/L).

- 2-Methylphenol – 2-Methylphenol was detected in five samples at concentrations exceeding the comparison criteria.

- Bis(2-ethylhexyl)phthalate – Bis(2-ethylhexyl)phthalate was detected in three groundwater samples at concentrations exceeding both criteria.

Given the limited number of detected compounds that possessed concentrations in excess of the comparison criteria, a map was not prepared. These compounds were not detected frequently enough to require that a map be produced to better explain the pattern of detections.

Metals

Arsenic was the only constituent detected at a concentration that exceeded any of the comparison criteria. The detected concentration in sample SWMU318-MW01 exceeded the USEPA Tap Water PRG; however, the concentration was below the Base background screening value. Therefore, metals are not considered a concern in the groundwater media at this SWMU.

4.4 Nature and Extent of Contamination

To facilitate a comprehensive understanding of the extent of contamination at the SWMU, data from this RFI was supplemented with long-term monitoring (LTM) data from Site 86 (Appendix F). The distributions of constituents exceeding screening values in soil and groundwater are presented on Figures 4-1 through 4-20.

4.4.1 Soil

The extent of soil contamination in the vicinity of the wash pad is based on soil COPCs identified from the RFI and includes naphthalene, isopropylbenzene, and butylbenzene. These three COPCs represent the highest and most-frequent detections above the NC STGC. Three distinct depth intervals were investigated: surface soil, intermediate subsurface soil, and deep subsurface soil. Surface soil samples were collected from the zero to one foot interval or in some cases, immediately below the concrete. The deep subsurface soil samples were collected immediately above the groundwater table (with a depth range generally between 6- and 8-feet bgs). The intermediate subsurface soil samples were collected in between the surface soil and deep subsurface soil samples (with a depth range generally between 2- and 4-feet bgs).

Figure 4-1 shows the distribution of butylbenzene concentrations in the surface soils. Exceedences of the NC STGC are located beneath the concrete wash pad on the western end. The extent of butylbenzene concentrations in soil that exceed the NC STGC is bounded. There were no detections of this constituent in the subsurface soils at concentrations exceeding the comparison criteria. Therefore, the extent of this compound is both horizontally and vertically delineated.

Figure 4-2 illustrates the distribution of isopropylbenzene in the surface soils. This constituent is present mainly on the eastern end of the wash pad. Detected concentrations exceeding the NC STGC are limited to one sample, from boring SWMU318-SB02. Isopropylbenzene did not exceed the NC STGC in subsurface soils, therefore providing evidence that it is vertically delineated.

Figure 4-3 illustrates the concentrations of naphthalene in the surface soils. This constituent was detected primarily beneath the wash pad. Concentrations exceeding the NC STGC were identified in samples SWMU318-SB01-00, SWMU318-SB02-00, SWMU318-SB07-00 and SWMU318-SB08-00. The highest concentrations of the constituent were detected in samples located on the western end of the wash pad. Naphthalene detections in subsurface soils at concentrations exceeding comparison criteria are scattered. Concentrations in the intermediate soil sample depths did not exceed the NC STGC (Figure 4-4). However, there was one sample that contained naphthalene at a concentration exceeding criteria in the deep soil samples (Figure 4-5). That sample was SWMU318-SB03-04. The extent of naphthalene in soil is generally bounded. The exception is at soil boring SWMU318-SB03, where the extent is unbounded to the south. However, it is possible since the detection of naphthalene was not observed in the intermediate soil sample from this boring, that the detection of this compound in the deep sample may be the result of groundwater contamination and not the result of soil contamination that has migrated from the surface.

4.4.2 Groundwater

The extent of groundwater contamination in the vicinity of the wash pad is based on groundwater COPCs from the RFI and includes benzene, naphthalene, TCE, cis-1,2-DCE, and vinyl chloride. These five COPCs represent the highest and most-frequent detections above the comparison criteria. Benzene and naphthalene were chosen as COPCs because they are the most frequently detected fuel-related constituents above screening criteria and exhibit the highest detections. TCE exhibits the highest detections, is the most frequently detected constituent above screening criteria, and represents the parent chlorinated solvent compound. The daughter products of cis-1,2-DCE and vinyl chloride have also been mapped based on frequency of detection above screening criteria compared with other daughter products. As stated earlier in this section of the report, other constituents did not exceed screening criteria or were not distributed in any discernable pattern.

Three distinct depth intervals were evaluated as part of this RFI. These depth intervals were 10 to 14 feet bgs, 25 to 34 feet bgs, and 40 to 44 feet bgs. The data combines SWMUs 303/318 RFI data and Site 86 Amended RI data. The depth intervals are slightly different between the RFI and RI. Thus, the intermediate interval consists of the 25 to 29 feet interval from the RFI and the 30 to 34 feet interval from the Site 86 Amended RI.

Fuel and chlorinated solvent related contamination is evident in groundwater. The extent of benzene, naphthalene, TCE, cis-1,2-DCE, and vinyl chloride, concentrations in groundwater are shown on Figures 4-6 through 4-20. It is evident in the figures that constituents related to SWMUs 303/318 have migrated onto IR Site 86 and have now commingled with the chlorinated solvent contamination associated with IR Site 86. Only those portions of the IR Site 86 plume relating to SWMUs 303/318 commingling are shown on the figures.

Contamination in shallow groundwater (10 to 14 feet bgs) is relatively low compared with other depth intervals. Figures 4-6 and 4-7 show the extent of benzene and naphthalene in groundwater. The highest detections of both benzene and naphthalene can be observed at borings on the west and east sides of the wash pad. Both plumes have a west to east trend with the majority of the constituent's concentrations being detected beneath Building AS515. Given the fact that groundwater primarily travels north to northeast under normal conditions, this trend lends some credence to the suspicion that past activities prior to the construction of Building AS515, the wash pad, and the SWMUs, may have been responsible for some of the contamination detected at the site.

Figure 4-8 shows that TCE concentrations in the shallow groundwater are distributed in a bi-nodal pattern. But much like benzene and naphthalene, the distribution of this constituent has a west to east trend. As with benzene and naphthalene, it is suspected that this contaminant may have not been released to the environment as a result of SWMU-related activities, but rather as a result of activities conducted prior to the construction of the SWMU and the structures adjacent to it. The extent of cis-1,2-DCE in shallow groundwater is broader than TCE, which is expected given it is a degradation product of TCE and is also more mobile. The distribution of this constituent appears to show evidence that the groundwater flow direction may be affecting the shape of this plume as indicated in Figure 4-9. Figure 4-10 shows that positive detections of vinyl chloride are limited to SWMU318-GW06, which also exhibits TCE and cis-1,2-DCE concentrations above NC 2L Standards. These figures also show that contamination in shallow groundwater has generally been sufficiently bounded horizontally. The only exception is the detection of TCE in the groundwater sample collected from SWMU318-MW07.

The highest concentration and most extensive levels of contamination are observed in the intermediate groundwater interval (25- to 34-feet bgs). Figure 4-11 shows that the highest level of benzene (above 100 ppb) occurs at boring SWMU318-GW15, immediately below some of the

highest levels of benzene detected in the shallow groundwater. As with the shallow plume, the intermediate plume for this constituent trends west to east in the vicinity of the SWMUs and the wash pad, and also to the north and northeast indicating that predominant groundwater flow is affecting the shape of the plume. Figure 4-12 shows that the highest level of naphthalene (above 1,000 ppb) also occurs in the vicinity of boring SWMU318-GW15 and again tends to have a west to east trend like its shallow counterpart.

Figure 4-13 shows that TCE in this intermediate zone is extensive. The highest levels of TCE are just north of Building AS515, the SWMUs, and the washpad. This band of high concentrations trend west to east with a northeastern component. The figure also shows TCE in groundwater at Site 86 (which is at a slightly deeper depth), with a "hot spot" located northeast of the Crash and Rescue building. Given the predominant northeasterly groundwater flow direction (Section 3.3.2), it is apparent that TCE has encroached on Site 86 and is commingling with Site 86 groundwater contamination. Figure 4-14 shows that the extent of cis-1,2-DCE is similar to TCE, but its concentrations are lower (less than 1,000 ppb). A west to east distribution pattern is evident once again for this constituent. Cis-1,2-DCE also commingles with groundwater contamination at Site 86. The extent of vinyl chloride is similar to cis-1,2-DCE but at lower concentrations than cis-1,2-DCE (generally less than 100 ppb) as depicted on Figure 4-15. Elevated detections appear somewhat scattered but a west to east trend is again noticeable. As with the shallow plumes, the intermediate plumes provide little evidence that they may have originated from activities at the SWMUs, but the west to east trends they display would be likely given the past activities conducted prior to the construction of the SWMUs and the surrounding structures. Hence, lending credence once again to the theory that these constituents are not SWMU-related.

The concentrations of these five constituents are significantly lower in samples collected from the deepest sampled interval (40 to 44 feet bgs); however, detections are still above NC 2L Standards for some constituents. Figure 4-16 shows that benzene was detected in a few samples collected from this interval, and Figure 4-17 shows the same for naphthalene. Figures 4-18, 4-19, and 4-20 depict concentrations of TCE, cis-1,2-DCE and vinyl chloride in the deepest samples collected as part of this RFI. An interesting pattern is observed when these figures are reviewed. Spotty detections of benzene, naphthalene, and TCE may be indicating that the semi-confining unit (Belgrade formation) may be leaking contamination through in particular areas thus letting contamination travel downward in localized areas and yet holding it back in other areas. The

other noticeable trend is that when figures 4-18, 4-19, and 4-20 are laid over each other, it becomes obvious that the cis-1,2-DCE and vinyl chloride is the byproduct of TCE biodegradation.

4.5 References

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TABLES

TABLE 4-1

FIXED-BASED AND MOBILE LABORATORY COMPARISON - SOIL 2004
SWMU 318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SOIL SAMPLES									
Site Sample I.D.	SWMU318-SB02-00			SWMU318-SB06-00			SWMU318-SB04-01		
Sample Date	3/16/2004			3/16/2004			3/16/2004		
Laboratory	Fixed-Base	Mobile	RPD	Fixed-Base	Mobile	RPD	Fixed-Base	Mobile	RPD
Volatiles (ug/kg)									
1,1,1-Trichloroethane	500 U	119 U	0.00	10 U	12 U	0.00	10 U	5.9 U	0.00
1,1-Dichloroethane	500 U	119 U	0.00	10 UJ	12 U	0.00	10 UJ	5.9 U	0.00
1,1-Dichloroethene	500 U	119 U	0.00	10 UJ	12 U	0.00	10 UJ	5.9 U	0.00
Benzene	500 U	119 U	0.00	10 U	12 U	0.00	10 U	5.9 U	0.00
cis-1,2-Dichloroethene	500 U	119 U	0.00	10 U	12 U	0.00	10 U	5.9 U	0.00
Ethyl Benzene	500 U	119 U	0.00	10 U	12 U	0.00	10 U	5.9 U	0.00
m/p-Xylenes	500 U	238 U	0.00	10 U	25 U	0.00	10 U	2.8 J	28.13
Methylene Chloride	500 U	119 U	0.00	10 U	12 U	0.00	10 U	12 U	0.00
o-Xylene	500 U	119 U	0.00	10 U	12 U	0.00	10 U	5.9 U	0.00
Tetrachloroethene	500 U	119 U	0.00	10 U	12 U	0.00	10 U	5.9 U	0.00
Toluene	500 U	119 U	0.00	10 U	12 U	0.00	0.9 J	5.9 J	36.76
trans-1,2-Dichloroethene	500 U	119 U	0.00	10 U	12 U	0.00	10 U	5.9 U	0.00
Trichloroethene	500 U	119 U	0.00	10 U	12 U	0.00	10 U	5.9 U	0.00

Notes:
U - Not detected
J - Reported value estimated
RPD - Relative percent difference, as calculated by: (Fixed-Base - Mobile/Fixed-Base + Mobile)/2 x 100
NA - Not Analyzed

TABLE 4-2

FIXED-BASED AND MOBILE LABORATORY COMPARISON - SOIL 2005
SWMU 318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Site Sample I.D.	SWMU318-SB16-00			SWMU318-SB20-00			SWMU318-SB21-02		
Sample Date	2/4/2005			2/3/2005			2/3/2005		
Laboratory	Fixed-Base	Mobile	RPD	Fixed-Base	Mobile	RPD	Fixed-Base	Mobile	RPD
Volatiles (ug/kg)									
1,2,3-Trichlorobenzene	NA	0.78 J	0.00	NA	0.82 J	0.00	NA	6 U	0.00
1,2,4-Trichlorobenzene	11 U	0.65 J	44.42	12 UJ	0.56 J	45.54	12 U	6 U	0.00
1,2,4-Trimethylbenzene	NA	2 U	0.00	NA	0.59 J	0.00	NA	3 U	0.00
1,2-Dichloroethylene (total)	11 U	NA	0.00	12 UJ	NA	0.00	12 U	NA	0.00
1,3,5-Trimethylbenzene	NA	2 U	0.00	NA	0.47 J	0.00	NA	3 U	0.00
Acetone	11 U	NA	0.00	12 UJ	NA	0.00	11 J	NA	0.00
cis-1,2-Dichloroethene	11 U	1 U	0.00	12 UJ	1 U	0.00	12 U	1 U	0.00
Naphthalene	390 U	6 U	0.00	NA	1.1 J	0.00	NA	6 U	0.00
n-Butylbenzene	NA	2 U	0.00	NA	2 U	0.00	NA	3 U	0.00
trans-1,2-Dichloroethene	11 U	1 U	0.00	12 UJ	1 U	0.00	12 U	1 U	0.00

Notes:
U - Not detected
J - Reported value estimated
RPD - Relative percent difference, as calculated by:
NA - Not Analyzed

Please note: Mobile laboratory analyzed napthalene using volatile purging analysis, fixed base laboratory analyzed napthalene using the semivolatile extraction method.

(Fixed-Base - Mobile/Fixed-Base + Mobile)/2 x 100

TABLE 4-2

FIXED-BASED AND MOBILE LABORATORY COMPARISON - SOIL 2005
SWMU 318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Site Sample I.D.	SWMU318-SB23-02			SWMU318-SB26-02		
Sample Date	2/3/2005			2/4/2005		
Laboratory	Fixed-Base	Mobile	RPD	Fixed-Base	Mobile	RPD
Volatiles (ug/kg)						
1,2,3-Trichlorobenzene	NA	1.3 J	0.00	NA	6 U	0.00
1,2,4-Trichlorobenzene	11 U	1.1 J	40.91	12 U	0.46 J	46.31
1,2,4-Trimethylbenzene	NA	0.64 J	0.00	NA	3 U	0.00
1,2-Dichloroethylene (total)	11 U	NA	0.00	21	NA	0.00
1,3,5-Trimethylbenzene	NA	2 U	0.00	NA	3 U	0.00
Acetone	8 J	NA	0.00	10 J	NA	0.00
cis-1,2-Dichloroethene	11 U	1 U	0.00	18	0.7 J	46.26
Naphthalene	400 U	1.3 J	49.68	430 U	6 U	0.00
n-Butylbenzene	NA	0.61 J	0.00	NA	3 U	0.00
trans-1,2-Dichloroethene	11 U	1 U	0.00	3 J	1 U	19.79

Notes:
U - Not detected
J - Reported value estimated
RPD - Relative percent difference, as calculated by: (Fixed-Base - Mobile/Fixed-Base + Mobile)/2 x 100
NA - Not Analyzed

Please note: Mobile laboratory analyzed napthalene using volatile purging analysis, fixed base laboratory analyzed napthalene using the semivolatile extraction method.

TABLE 4-3

FIXED-BASED AND MOBILE LABORATORY COMPARISON - GROUNDWATER 2004
SWMU 318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB, CAMP LEJEUNE, NORTH CAROLINA

GROUNDWATER SAMPLES									
Site Sample ID	SWMU318-GW01			SWMU318-GW04-01			SWMU318-GW07		
Sample Date	3/19/2004			3/18/2004			3/18/2004		
Laboratory	Fixed-Base	Mobile	RPD	Fixed-Base	Mobile	RPD	Fixed-Base	Mobile	RPD
Volatiles (ug/L)									
1,1,1-Trichloroethane	10 U	2 U	0.00	10 U	2 U	0.00	10 U	2 U	0.00
1,1-Dichloroethane	10 U	2 U	0.00	10 U	0.7 J	43.46	10 U	2 U	0.00
1,1-Dichloroethene	10 U	2 U	0.00	10 U	2 U	0.00	10 U	2 U	0.00
Benzene	10 U	2 U	0.00	5 J	4	5.56	10 U	2 U	0.00
Bromodichloromethane	10 U	2 U	0.00	10 U	2 U	0.00	10 U	2 U	0.00
Chloroform	10 U	2 U	0.00	10 U	2 U	0.00	10 U	2 U	0.00
cis-1,2-Dichloroethene	2 J	3	10.00	2 J	2	0.00	10 U	0.4 J	46.15
Dibromochloromethane	10 U	2 U	0.00	10 U	2 U	0.00	10 U	2 U	0.00
Ethylbenzene	1 J	2 J	16.67	10 U	0.8 J	42.59	10 U	2 U	0.00
Isopropylbenzene	2 J	4	16.67	10 U	1 J	40.91	10 U	1 J	40.91
m-,p-Xylene	10 U	2 J	33.33	10 U	2 J	33.33	10 U	2 J	33.33
o-Xylene	10 U	2 U	0.00	10 U	1 J	40.91	10 U	1 J	40.91
Tetrachloroethene	10 U	2 U	0.00	10 U	2 U	0.00	10 U	2 U	0.00
Toluene	10 U	0.8 J	42.59	10 U	0.9 J	41.74	10 U	2 U	0.00
Trichloroethene	10 U	0.9 J	41.74	2 J	2	0.00	10 U	1 J	40.91
Vinyl Chloride	10 U	2 U	0.00	10 U	2 U	0.00	10 U	2 U	0.00

Notes:
U - Not detected
J - Reported value estimated
RPD - Relative percent difference, as calculated by: (Fixed-Base - Mobile/Fixed-Base + Mobile) (Fixed-Base - Mobile/Fixed-Base + Mobile)/2 x 100
NA - Not Analyzed

TABLE 4-3

FIXED-BASED AND MOBILE LABORATORY COMPARISON - GROUNDWATER 2004
SWMU 318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB, CAMP LEJEUNE, NORTH CAROLINA

GROUNDWATER SAMPLES									
Site Sample ID	SWMU318-GW10-01			SWMU318-GW13			SWMU318-GW17		
Sample Date	3/20/2004			3/20/2004			6/23/2004		
Laboratory	Fixed-Base	Mobile	RPD	Fixed-Base	Mobile	RPD	Fixed-Base	Mobile	RPD
Volatiles (ug/L)									
1,1,1-Trichloroethane	10 U	2 U	0.00	10 U	2 U	0.00	1 U	2 U	0.00
1,1-Dichloroethane	10 U	1 J	40.91	2 J	2 U	0.00	1 U	2 U	0.00
1,1-Dichloroethene	4 J	4	0.00	10 U	2 U	0.00	1 U	2 U	0.00
Benzene	2 J	1 J	16.67	10 U	2 U	0.00	1 U	2 U	0.00
Bromodichloromethane	10 U	2 U	0.00	10 U	0.6 J	44.34	1 U	2 U	16.67
Chloroform	10 U	2 U	0.00	10 U	2 U	0.00	1 U	2 U	0.00
cis-1,2-Dichloroethene	670 D	575	3.82	1 J	1 J	0.00	0.9 J	2 U	18.97
Dibromochloromethane	10 U	2 U	0.00	10 U	2 U	0.00	1 U	2 U	0.00
Ethylbenzene	3 J	2	10.00	10 U	0.6 J	44.34	1 U	2 U	0.00
Isopropylbenzene	10 U	1 J	40.91	10 U	1 J	40.91	NA	2 U	0.00
m-,p-Xylene	5 J	5	0.00	10 U	2 J	33.33	2 U	NA	0.00
o-Xylene	4 J	4	0.00	10 U	2 U	0.00	1 U	2 U	0.00
Tetrachloroethene	10 U	2 U	0.00	10 U	2 U	0.00	1 U	2 U	0.00
Toluene	33	35	1.47	10 U	0.8 J	42.59	3	2 U	10.00
Trichloroethene	1200 D	965	5.43	10 U	2 J	33.33	0.3 J	2 U	36.96
Vinyl Chloride	140	93	10.09	10 U	2 U	0.00	2 U	2 U	0.00

Notes:
U - Not detected
J - Reported value estimated
RPD - Relative percent difference, as calculated by: (Fixed-Base - Mobile/Fixed-Base + Mobile)/2 x 100
NA - Not Analyzed

TABLE 4-3

FIXED-BASED AND MOBILE LABORATORY COMPARISON - GROUNDWATER 2004
SWMU 318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB, CAMP LEJEUNE, NORTH CAROLINA

GROUNDWATER SAMPLES									
Site Sample ID	SWMU318-GW20-02A			SWMU318-GW23-01			SWMU318-GW24-01		
Sample Date	6/24/2004			6/23/2004			6/22/2004		
Laboratory	Fixed-Base	Mobile	RPD	Fixed-Base	Mobile	RPD	Fixed-Base	Mobile	RPD
Volatiles (ug/L)									
1,1,1-Trichloroethane	1 U	2 U	0.00	1 U	2 U	0.00	1 U	2 U	0.00
1,1-Dichloroethane	10	2 U	33.33	1 U	2 U	0.00	1 U	2 U	0.00
1,1-Dichloroethene	0.3 J	2 U	0.00	1 U	2 U	0.00	1 U	2 U	0.00
Benzene	1	2 U	16.67	1	2 U	16.67	1 U	2 U	0.00
Bromodichloromethane	1 U	2 U	0.00	1 U	2 U	0.00	1 U	2 U	0.00
Chloroform	1 U	2 U	0.00	1 U	2 U	0.00	1 U	2 U	0.00
cis-1,2-Dichloroethene	24	2 U	42.31	460 D	336	7.79	1 U	2 U	0.00
Dibromochloromethane	1 U	2 U	0.00	1 U	2 U	0.00	1 U	2 U	0.00
Ethylbenzene	2	2 U	0.00	1 U	2 U	0.00	1 U	2 U	0.00
Isopropylbenzene	NA	2 U	0.00	NA	2 U	0.00	NA	2 U	0.00
m-,p-Xylene	0.9 J	NA	0.00	2 U	NA	0.00	2 U	NA	0.00
o-Xylene	0.3 J	2 U	36.96	0.3 J	2 U	36.96	1 U	2 U	0.00
Tetrachloroethene	1 U	2 U	0.00	1 U	2 U	0.00	1 U	2 U	0.00
Toluene	3	2 U	10.00	3	2 U	10.00	1 U	2 U	0.00
Trichloroethene	64	48.5	6.89	140	102	7.85	1 U	2 U	0.00
Vinyl Chloride	5	2 U	21.43	140	203	9.18	2 U	2 U	0.00

Notes:
U - Not detected
J - Reported value estimated
RPD - Relative percent difference, as calculated by: (Fixed-Base - Mobile/Fixed-Base + Mobile)/2 x 100
NA - Not Analyzed

TABLE 4-4

FIXED-BASED AND MOBILE LABORATORY COMPARISON - GROUNDWATER 2005
SWMU 318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Site Sample I.D.	SWMU318-GW31			SWMU318-GW33-01			SWMU318-GW35-01		
Sample Date	2/3/2005			2/4/2005			2/5/2005		
Laboratory	Fixed	Mobile	RPD	Fixed	Mobile	RPD	Fixed	Mobile	RPD
Volatiles (ug/L)									
1,1-Dichloroethane	10 U	1 U	0.00	10 U	1 U	0.00	5 J	10 U	16.67
1,1-Dichloroethene	10 U	1 U	0.00	10 U	1 U	0.00	10 U	10 U	0.00
1,2,3-Trichlorobenzene	NA	5 U	0.00	NA	5 U	0.00	NA	3.4 J	0.00
1,2,4-Trichlorobenzene	10 U	5 U	0.00	10 U	5 U	0.00	10 U	50 U	0.00
1,2,4-Trimethylbenzene	NA	2 U	0.00	NA	2 U	0.00	NA	20	0.00
1,2-Dichloroethylene	10 U	NA	0.00	10 U	NA	0.00	12	NA	0.00
1,3,5-Trimethylbenzene	NA	2 U	0.00	NA	2 U	0.00	NA	7.4 J	0.00
1,3-Dichlorobenzene	10 U	2 U	0.00	1 J	0.33 J	25.19	10 U	20 U	0.00
4-Isopropyltoluene	NA	2 U	0.00	NA	2 U	0.00	NA	7.4 J	0.00
Benzene	10 U	1 U	0.00	2 J	0.54 J	28.74	140	50	23.68
cis-1,2-Dichloroethene	10 U	1 U	0.00	10 U	1 U	0.00	12	3.3 J	28.43
Ethylbenzene	10 U	1 U	0.00	10 U	1 U	0.00	110	31	28.01
Isopropylbenzene	10 U	2 U	0.00	10 U	2 U	0.00	5 J	1.7 J	24.63
m-,p- Xylene	10 U	2 U	0.00	10 U	0.29 J	47.18	78	42	15.00
Methyl-tert-butyl ether (MTBE)	10 U	NA	0.00	120	NA	0.00	10 U	NA	0.00
Naphthalene	10 U	5 U	0.00	NA	5 U	0.00	NA	790	0.00
o-Xylene	10 U	1 U	0.00	10 U	1 U	0.00	110	30	28.57
Toluene	10 U	1 U	0.00	10 U	0.3 J	47.09	130	39	26.92
Trichloroethene	10 U	1 U	0.00	10 U	1 U	0.00	2 J	10 U	33.33
Vinyl chloride	10 U	2 U	0.00	10 U	2 U	0.00	6 J	2.9 J	17.42
Xylenes (total)	10 U	NA	0.00	10 U	NA	0.00	190	NA	0.00
n-Butylbenzene	NA	2 U	0.00	NA	2 U	0.00	NA	20 U	0.00
n-Propylbenzene	NA	2 U	0.00	NA	2 U	0.00	NA	1.8 J	0.00
sec-Butylbenzene	NA	2 U	0.00	NA	2 U	0.00	NA	20 U	0.00

Notes:
U - Not detected
J - Reported value estimated
RPD - Relative percent difference, as calculated by: (Fixed-Base - Mobile/Fixed-Base + Mobile)/2 x 100
NA - Not Analyzed

Please note: Mobile laboratory analyzed napthalene using volatile purging analysis, fixed base laboratory analyzed napthalene using the semivolatile extraction method.

TABLE 4-4

FIXED-BASED AND MOBILE LABORATORY COMPARISON - GROUNDWATER 2005
SWMU 318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Site Sample I.D.	SWMU318-GW37			SWMU318-GW51-01		
Sample Date	2/3/2005			2/7/2005		
Laboratory	Fixed	Mobile	RPD	Fixed	Mobile	RPD
Volatiles (ug/L)						
1,1-Dichloroethane	10 U	5 U	0.00	1 J	0.41 J	20.92
1,1-Dichloroethene	10 U	5 U	0.00	1 J	0.44 J	19.44
1,2,3-Trichlorobenzene	NA	2.4 J	0.00	NA	0.46 J	0.00
1,2,4-Trichlorobenzene	10 U	25 U	0.00	10 U	0.37 J	46.43
1,2,4-Trimethylbenzene	NA	8.6 J	0.00	NA	0.32 J	0.00
1,2-Dichloroethylene	2 J	NA	0.00	7 J	NA	0.00
1,3,5-Trimethylbenzene	NA	3.4 J	0.00	NA	2 U	0.00
1,3-Dichlorobenzene	10 U	10 U	0.00	10 U	2 U	0.00
4-Isopropyltoluene	NA	1.6 J	0.00	NA	2 U	0.00
Benzene	17	6.7	21.73	4 J	1.3	25.47
cis-1,2-Dichloroethene	2 J	5 U	21.43	7 J	2.5	23.68
Ethylbenzene	15	6.7	19.12	10 U	1 U	0.00
Isopropylbenzene	10 U	0.89 J	41.83	10 U	2 U	0.00
m-,p- Xylene	32	15	18.09	10 U	2 U	0.00
Methyl-tert-butyl ether (MTBE)	10 U	NA	0.00	10 U	NA	0.00
Naphthalene	430	630	9.43	NA	0.68 J	0.00
o-Xylene	15	7.3	17.26	10 U	1 U	0.00
Toluene	12	5.5	18.57	10 U	1 U	0.00
Trichloroethene	10 U	5 U	0.00	4 J	1.2	26.92
Vinyl chloride	10 U	10 U	0.00	10 U	2 U	0.00
Xylenes (total)	47	NA	0.00	10 U	NA	0.00
n-Butylbenzene	NA	10 U	0.00	NA	0.31 J	0.00
n-Propylbenzene	NA	0.85 J	0.00	NA	2 U	0.00
sec-Butylbenzene	NA	0.58 J	0.00	NA	2 U	0.00

Notes:
U - Not detected
J - Reported value estimated
RPD - Relative percent difference, as calculated by: (Fixed-Base - Mobile/Fixed-Base + Mobile)/2 x 100
NA - Not Analyzed

Please note: Mobile laboratory analyzed napthalene using volatile purging analysis, fixed base laboratory analyzed napthalene using the semivolatile extraction method.

TABLE 4-5
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB01-00	SWMU318-SB02-00	SWMU318-SB02-00D	SWMU318-SB03-00	SWMU318-SB04-00	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB07-00	SWMU318-SB08-00
Sample Date	Groundwater	Industrial Soil	3/16/2004	3/16/2004	3/16/2004	3/19/2004	3/16/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004
Sample Depth (ft bgs)	Standards	PRGs	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)											
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]	116 U	119 U	116 U	13 U		12 U	12 U	114 U	110 U
1,2,4-Trichlorobenzene	2,610	215,925	116 U	119 U	116 U	13 U		12 U	12 U	114 U	110 U
1,2,4-Trimethylbenzene	7,490	170,272	116 U	119 U	116 U	13 U		12 U	12 U	114 U	110 U
1,2-Dichloroethene (cis)	350	146,301	116 U	119 U	116 U	13 U		12 U	12 U	114 U	110 U
1,3,5-Trimethylbenzene	7,330	69,712	116 U	119 U	116 U	13 U		12 U	12 U	455	593
4-Isopropyltoluene	7,270 [2]	520,000 [2]	116 U	226	116 U	13 U		12 U	12 U	114 U	110 U
Benzene	5.62	1,409	116 U	119 U	116 U	13 U		12 U	12 U	114 U	110 U
Butylbenzene, sec-	3,330	220,000	116 U	81 J	116 U	13 U		12 U	12 U	125	109 J
Butylbenzene, tert-	3,360	390,000	116 U	190	116 U	13 U		12 U	12 U	114 U	110 U
Ethylbenzene	241	395,000	116 U	119 U	116 U	13 U		12 U	12 U	114 U	110 U
Isopropylbenzene (Cumene)	1,680	1,977,451	698	1786	384	13 U		12 U	12 U	568 U	2220 U
Methylene Chloride	22.0	20,527	116 U	119 U	116 U	13 U		12 U	12 U	114 U	110 U
Naphthalene	585	187,691	2490	2140	5380	13 U		12 U	12 U	10600	57800
n-Butylbenzene	NE	240,000	1430	976	3670	13 U		12 U	12 U	31700	18100
Tetrachloroethene (PCE)	7.42	1,309	116 U	119 U	116 U	13 U		12 U	12 U	42 J	110 U
Toluene	7,270	520,000	116 U	119 U	116 U	13 U		4 J	12 U	114 U	34 J
Xylene, m-	4960 [3]	420,000 [3]	233 U	238 U	233 U	26 U		2 J	25 U	25 J	19 J
Xylene, o-	4960 [3]	420,000 [3]	116 U	119 U	116 U	4 J		12 U	12 U	44 J	35 J

SAMPLE WAS NOT COLLECTED.

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, the value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[3] Based on professional judgement, the value used is for total xylenes as a surrogate compound.

TABLE 4-5
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB11-00	SWMU318-SB12-00	SWMU318-SB13-00	SWMU318-SB14-00	SWMU318-SB15-00	SWMU318-SB16-00	SWMU318-SB16-00D
Sample Date	Groundwater	Industrial Soil	3/22/2004	3/23/2004	3/22/2004	3/22/2004	3/23/2004	2/5/2005	2/5/2005	2/4/2005	2/4/2005
Sample Depth (ft bgs)	Standards	PRGs	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)											
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			0.78 J	6 U
1,2,4-Trichlorobenzene	2,610	215,925	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			0.65 J	6 U
1,2,4-Trimethylbenzene	7,490	170,272	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			2 U	2 U
1,2-Dichloroethene (cis)	350	146,301	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			1 U	1 U
1,3,5-Trimethylbenzene	7,330	69,712	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			2 U	2 U
4-Isopropyltoluene	7,270 [2]	520,000 [2]	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			NA	NA
Benzene	5.62	1,409	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			1 U	1 U
Butylbenzene, sec-	3,330	220,000	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			2 U	2 U
Butylbenzene, tert-	3,360	390,000	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			2 U	2 U
Ethylbenzene	241	395,000	6.3 U	5.6 U	5.7 U	6.2 U	7.3			1 U	1 U
Isopropylbenzene (Cumene)	1,680	1,977,451	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			2 U	2 U
Methylene Chloride	22.0	20,527	13 U	11 U	11 U	13	11 U			6 U	6 U
Naphthalene	585	187,691	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			6 U	6 U
n-Butylbenzene	NE	240,000	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			2 U	2 U
Tetrachloroethene (PCE)	7.42	1,309	6.3 U	5.6 U	5.7 U	6.2 U	5.4 U			1 U	1 U
Toluene	7,270	520,000	6.3 U	5.6 U	5.7 U	6.2 U	3.6 J			1 U	1 U
Xylene, m-	4960 [3]	420,000 [3]	6.3 U	4.7 J	5.7 U	6.2 U	26			2 U	2 U
Xylene, o-	4960 [3]	420,000 [3]	6.3 U	5.6 U	5.7 U	6.2 U	8.3			1 U	1 U

SAMPLE WAS NOT COLLECTED.

SAMPLE WAS NOT COLLECTED.

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, the value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[3] Based on professional judgement, the value used is for total xylenes as a surrogate compound.

TABLE 4-5
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB17-00	SWMU318-SB18-00	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB21-00	SWMU318-SB22-00	SWMU318-SB23-00	SWMU318-SB24-00	SWMU318-SB25-00
Sample Date	Groundwater	Industrial Soil	2/5/2005	2/7/2005	2/4/2005	2/3/2005	2/3/2005	2/7/2005	2/3/2005	2/7/2005	2/8/2005
Sample Depth (ft bgs)	Standards	PRGs	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)											
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]		0.67 J	6 U	0.82 J	5 U	0.7 J	6 U	6 U	6 U
1,2,4-Trichlorobenzene	2,610	215,925		0.47 J	6 U	0.56 J	5 U	0.53 J	6 U	6 U	6 U
1,2,4-Trimethylbenzene	7,490	170,272		2 U	2 U	0.59 J	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	350	146,301		0.86 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	7,330	69,712		2 U	2 U	0.47 J	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	7,270 [2]	520,000 [2]		NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5.62	1,409		0.9 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Butylbenzene, sec-	3,330	220,000		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, tert-	3,360	390,000		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	241	395,000		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene (Cumene)	1,680	1,977,451		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Chloride	22.0	20,527		6 U	6 U	6 U	5 U	5 U	6 U	6 U	6 U
Naphthalene	585	187,691		6 U	6 U	1.1 J	5 U	5 U	6 U	6 U	6 U
n-Butylbenzene	NE	240,000		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene (PCE)	7.42	1,309		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	7,270	520,000		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene, m-	4960 [3]	420,000 [3]		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Xylene, o-	4960 [3]	420,000 [3]		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

SAMPLE WAS NOT COLLECTED.

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, the value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[3] Based on professional judgement, the value used is for total xylenes as a surrogate compound.

TABLE 4-5
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB26-00	SWMU318-SB27-00	SWMU318-SB28-00
Sample Date	Groundwater	Industrial Soil	2/4/2005	2/7/2005	2/8/2005
Sample Depth (ft bgs)	Standards	PRGs	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)					
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]	1.3 J	6 U	6 U
1,2,4-Trichlorobenzene	2,610	215,925	0.94 J	6 U	6 U
1,2,4-Trimethylbenzene	7,490	170,272	0.65 J	2 U	2 U
1,2-Dichloroethene (cis)	350	146,301	1 U	1 U	1 U
1,3,5-Trimethylbenzene	7,330	69,712	2 U	2 U	2 U
4-Isopropyltoluene	7,270 [2]	520,000 [2]	NA	NA	NA
Benzene	5.62	1,409	1 U	1 U	1 U
Butylbenzene, sec-	3,330	220,000	2 U	2 U	2 U
Butylbenzene, tert-	3,360	390,000	2 U	2 U	2 U
Ethylbenzene	241	395,000	1 U	1 U	1 U
Isopropylbenzene (Cumene)	1,680	1,977,451	2 U	2 U	2 U
Methylene Chloride	22.0	20,527	6 U	6 U	6 U
Naphthalene	585	187,691	1.5 J	6 U	6 U
n-Butylbenzene	NE	240,000	0.66 J	2 U	2 U
Tetrachloroethene (PCE)	7.42	1,309	1 U	1 U	1 U
Toluene	7,270	520,000	1 U	1 U	1 U
Xylene, m-	4960 [3]	420,000 [3]	2 U	2 U	2 U
Xylene, o-	4960 [3]	420,000 [3]	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, the value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[3] Based on professional judgement, the value used is for total xylenes as a surrogate compound.

TABLE 4-6
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	AOC 2	**Combined**	NC Soil to	USEPA Region IX	SWMU318-SB01-00	SWMU318-SB02-00	SWMU318-SB02-00D	SWMU318-SB03-00	SWMU318-SB04-00	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB06-00D
Sample Date	Surface Soil	**Surface Soil**	Groundwater	Industrial Soil	3/16/2004	3/16/2004	3/16/2004	3/19/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004
Sample Depth (ft bgs)	Background	**Background**	Standards	PRGs	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)												
Trichlorofluoromethane	NE	NE	31,500	2,000,000	NA	500 U		NA			10 UJ	10 UJ
Semivolatile Organic Compounds (ug/kg)												
1,1'-Biphenyl	NE	NE	8,910	23,340,505	11 J	NA	SAMPLE WAS NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	400 U	SAMPLE NOT COLLECTED.	SAMPLE WAS NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	NA	NA
2-Methylnaphthalene	NE	NE	1,720	187,691 [1]	180 J	NA		400 U			NA	NA
Acenaphthene	NE	NE	8,160	29,219,327	220 J	NA		400 U			NA	NA
Anthracene	NE	NE	995,000	100,000,000	32 J	NA		400 U			NA	NA
Benzo(a)anthracene	NE	NE	343	2,110	350 J	NA		400 U			NA	NA
Benzo(a)pyrene	NE	NE	93	211	380 J	NA		400 U			NA	NA
Benzo(b)fluoranthene	NE	NE	1,180	2,110	430	NA		400 U			NA	NA
Benzo(k)fluoranthene	NE	NE	11,800	21,096	300 J	NA		400 U			NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6,670	123,121	390 U	NA		400 UJ			NA	NA
Carbazole	NE	NE	NE	86,185	19 J	NA		400 UJ			NA	NA
Chrysene	NE	NE	38,150	210,962	390	NA		400 U			NA	NA
Dibenz(a,h)anthracene	NE	NE	172	211	68 J	NA		400 U			NA	NA
Dibenzofuran	NE	NE	4,660	1,563,342	150 J	NA		400 U			NA	NA
Di-n-butyl Phthalate (DBP)	NE	NE	24,800	61,560,629	31 J	NA		400 U			NA	NA
Fluoranthene	NE	NE	276,000	22,000,353	650	NA		400 U			NA	NA
Fluorene	NE	NE	44,300	26,281,433	160 J	NA		400 U			NA	NA
Indeno(1,2,3-cd)pyrene	NE	NE	3,320	2,110	210 J	NA		400 U			NA	NA
Naphthalene	NE	NE	585	187,691	2900	NA		400 U			NA	NA
Phenanthrene	NE	NE	59,600	29,126,201 [2]	120 J	NA		400 U			NA	NA
Pyrene	NE	NE	286,000	29,126,201	830	NA		400 U			NA	NA
Metals (mg/kg)												
Arsenic	1.71	0.88	5.24	1.59	0.71 J	NA		1.4 U			NA	NA
Barium	32.6	19.4	848	66,577	10.3 J	NA		4.6 J			NA	NA
Cadmium	NE	0.0525	2.72	451	**0.43 J**	NA		10 U			NA	NA
Chromium	19.0	8.93	27.2	448	6.1 J	NA		2.8 J			NA	NA
Lead	22.6	25.8	270	800	19.8	NA		2 J			NA	NA
Mercury	0.095	0.120	0.0150	307	0.01 U	NA		0.01 U			NA	NA
Selenium	1.21	1.25	12.2	5,110	0.42 J	NA		0.39 U			NA	NA
Silver	0.227	0.372	223	5,110	**4.6 J**	NA		0.2 U			NA	NA

Notes:

Shaded values exceed AOC 2 background concentrations for surface soil.
Bolded values exceed Base background concentrations for combined surface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[3] Based on professional judgement, value used is for naphthalene as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-6
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	AOC 2	**Combined**	NC Soil to	USEPA Region IX	SWMU318-SB07-00	SWMU318-SB08-00	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB11-00	SWMU318-SB12-00	SWMU318-SB13-00	SWMU318-SB14-00
Sample Date	Surface Soil	**Surface Soil**	Groundwater	Industrial Soil	3/20/2004	3/20/2004	3/22/2004	3/23/2004	3/22/2004	3/22/2004	3/23/2004	2/5/2005
Sample Depth (ft bgs)	Background	**Background**	Standards	PRGs	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)												
Trichlorofluoromethane	NE	NE	31,500	2,000,000	NA	NA	2 J	NA				
Semivolatile Organic Compounds (ug/kg)												
1,1'-Biphenyl	NE	NE	8,910	23,340,505	400 U	9000 U	390 U	400 U				
2-Methylnaphthalene	NE	NE	1,720	187,691 (1)	400 U	9000 U	390 U	400 U				
Acenaphthene	NE	NE	8,160	29,219,327	400 U	9000 U	390 U	400 U				
Anthracene	NE	NE	995,000	100,000,000	400 U	9000 U	390 U	400 U				
Benzo(a)anthracene	NE	NE	343	2,110	400 U	9000 U	390 U	400 U				
Benzo(a)pyrene	NE	NE	93	211	400 U	9000 U	390 U	400 U				
Benzo(b)fluoranthene	NE	NE	1,180	2,110	400 U	9000 U	390 U	400 U				
Benzo(k)fluoranthene	NE	NE	11,800	21,096	400 U	9000 U	390 U	400 U				
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6,670	123,121	400 UJ	9000 U	390 U	400 U				
Carbazole	NE	NE	NE	86,185	400 UJ	9000 U	390 U	400 U				
Chrysene	NE	NE	38,150	210,962	400 U	9000 U	390 U	400 U				
Dibenz(a,h)anthracene	NE	NE	172	211	400 U	9000 U	390 U	400 U				
Dibenzofuran	NE	NE	4,660	1,563,342	400 U	9000 U	390 U	400 U				
Di-n-butyl Phthalate (DBP)	NE	NE	24,800	61,560,629	400 U	9000 U	390 U	400 U				
Fluoranthene	NE	NE	276,000	22,000,353	400 U	9000 U	390 U	400 U				
Fluorene	NE	NE	44,300	26,281,433	400 U	9000 U	390 U	400 U				
Indeno(1,2,3-cd)pyrene	NE	NE	3,320	2,110	400 U	9000 U	390 U	400 U				
Naphthalene	NE	NE	585	187,691	400 U	32000	390 U	400 U				
Phenanthrene	NE	NE	59,600	29,126,201 (2)	400 U	9000 U	390 U	400 U				
Pyrene	NE	NE	286,000	29,126,201	400 U	9000 U	390 U	400 U				
Metals (mg/kg)												
Arsenic	1.71	0.88	5.24	1.59	0.48 J	**1.1 J**	**2.6**	0.82 J				
Barium	32.6	19.4	848	66,577	5.9	**22.1**	**20.3 J**	11.7 J				
Cadmium	NE	0.0525	2.72	451	0.04 U	**1.3 J**	**0.55 J**	0.87 U				
Chromium	19.0	8.93	27.2	448	3.8	**10.7**	**10.3**	3.7				
Lead	22.6	25.8	270	800	2.8	2.2	21.7 J	8.4 J				
Mercury	0.095	0.120	0.0150	307	0.01 J	0.01 J	0.03 J	0.02 J				
Selenium	1.21	1.25	12.2	5,110	0.38 J	0.34 U	0.69 J	0.4 U				
Silver	0.227	0.372	223	5,110	0.17 U	0.17 U	0.22 U	0.2 U				

SAMPLE WAS NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

SAMPLE WAS NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

SAMPLE WAS NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

SAMPLE NOT COLLECTED.

Notes:

Shaded values exceed AOC 2 background concentrations for surface soil.
Bolded values exceed Base background concentrations for combined surface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected
UJ - Not detected. Reported value is estimated.

(3) Based on professional judgement, value used is for naphthalene as a surrogate compound.
(5) Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-6
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID Sample Date Sample Depth (ft bgs)	AOC 2 Surface Soil Background	**Combined Surface Soil Background**	NC Soil to Groundwater Standards	USEPA Region IX Industrial Soil PRGs	SWMU318-SB15-00 2/5/2005 0-1	SWMU318-SB16-00 2/4/2005 0-1	SWMU318-SB16-00D 2/4/2005 0-1	SWMU318-SB17-00 2/5/2005 0-1	SWMU318-SB18-00 2/7/2005 0-1	SWMU318-SB19-00 2/4/2005 0-1	SWMU318-SB20-00 2/3/2005 0-1	SWMU318-SB20-00D 2/8/2005 0-1
Volatile Organic Compounds (ug/kg)												
Trichlorofluoromethane	NE	NE	31,500	2,000,000		11 U				NA	12 UJ	10 U
Semivolatile Organic Compounds (ug/kg)												
1,1'-Biphenyl	NE	NE	8,910	23,340,505		390 U				390 U	NA	NA
2-Methylnaphthalene	NE	NE	1,720	187,691 (1)		390 U				390 U	NA	NA
Acenaphthene	NE	NE	8,160	29,219,327		390 U				390 U	NA	NA
Anthracene	NE	NE	995,000	100,000,000		390 U				390 U	NA	NA
Benzo(a)anthracene	NE	NE	343	2,110		390 U				390 U	NA	NA
Benzo(a)pyrene	NE	NE	93	211		390 U				390 U	NA	NA
Benzo(b)fluoranthene	NE	NE	1,180	2,110		390 U				390 U	NA	NA
Benzo(k)fluoranthene	NE	NE	11,800	21,096		390 U				390 U	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6,670	123,121		220 J				390 U	NA	NA
Carbazole	NE	NE	NE	86,185		390 U				390 U	NA	NA
Chrysene	NE	NE	38,150	210,962		390 U				390 U	NA	NA
Dibenz(a,h)anthracene	NE	NE	172	211		390 U				390 U	NA	NA
Dibenzofuran	NE	NE	4,660	1,563,342		390 U				390 U	NA	NA
Di-n-butyl Phthalate (DBP)	NE	NE	24,800	61,560,629		390 U				390 U	NA	NA
Fluoranthene	NE	NE	276,000	22,000,353		390 U				390 U	NA	NA
Fluorene	NE	NE	44,300	26,281,433		390 U				390 U	NA	NA
Indeno(1,2,3-cd)pyrene	NE	NE	3,320	2,110		390 U				390 U	NA	NA
Naphthalene	NE	NE	585	187,691		390 U				390 U	NA	NA
Phenanthrene	NE	NE	59,600	29,126,201 (2)		390 U				390 U	NA	NA
Pyrene	NE	NE	286,000	29,126,201		390 U				390 U	NA	NA
Metals (mg/kg)												
Arsenic	1.71	0.88	5.24	1.59		2 U				3.4 U	NA	NA
Barium	32.6	19.4	848	66,577		**23 J**				17.3 J	NA	NA
Cadmium	NE	0.0525	2.72	451		**3.1**				0.54 U	NA	NA
Chromium	19.0	8.93	27.2	448		**15.5**				**12.5**	NA	NA
Lead	22.6	25.8	270	800		**32.5**				**29.2**	NA	NA
Mercury	0.095	0.120	0.0150	307		0.07 U				0.05 U	NA	NA
Selenium	1.21	1.25	12.2	5,110		0.66 U				1 U	NA	NA
Silver	0.227	0.372	223	5,110		0.13 U				0.15 U	NA	NA

SAMPLE NOT COLLECTED.

SAMPLE WAS NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

SAMPLE NOT COLLECTED.

SAMPLE WAS NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Shaded values exceed AOC 2 background concentrations for surface soil.
Bolded values exceed Base background concentrations for combined surface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected
UJ - Not detected. Reported value is estimated.

(3) Based on professional judgement, value used is for naphthalene as a surrogate compound.
(5) Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-6
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	AOC 2	**Combined**	NC Soil to	USEPA Region IX	SWMU318-SB21-00	SWMU318-SB22-00	SWMU318-SB23-00	SWMU318-SB24-00	SWMU318-SB25-00	SWMU318-SB26-00	SWMU318-SB27-00	SWMU318-SB28-00
Sample Date	Surface Soil	**Surface Soil**	Groundwater	Industrial Soil	2/3/2005	2/7/2005	2/3/2005	2/7/2005	2/8/2005	2/4/2005	2/7/2005	2/8/2005
Sample Depth (ft bgs)	Background	**Background**	Standards	PRGs	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)												
Trichlorofluoromethane	NE	NE	31,500	2,000,000	NA		NA	NA				
Semivolatile Organic Compounds (ug/kg)												
1,1'-Biphenyl	NE	NE	8,910	23,340,505	360 U	SAMPLE WAS NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	400 U	390 U	SAMPLE WAS NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE WAS NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE WAS NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE WAS NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.
2-Methylnaphthalene	NE	NE	1,720	187,691 [1]	360 U		400 U	390 U				
Acenaphthene	NE	NE	8,160	29,219,327	360 U		400 U	390 U				
Anthracene	NE	NE	995,000	100,000,000	360 U		400 U	390 U				
Benzo(a)anthracene	NE	NE	343	2,110	360 U		400 U	390 U				
Benzo(a)pyrene	NE	NE	93	211	360 U		400 U	390 U				
Benzo(b)fluoranthene	NE	NE	1,180	2,110	360 U		400 U	390 U				
Benzo(k)fluoranthene	NE	NE	11,800	21,096	360 U		400 U	390 U				
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6,670	123,121	360 U		400 U	2,100				
Carbazole	NE	NE	NE	86,185	360 U		400 U	390 U				
Chrysene	NE	NE	38,150	210,962	360 U		400 U	390 U				
Dibenz(a,h)anthracene	NE	NE	172	211	360 U		400 U	390 U				
Dibenzofuran	NE	NE	4,660	1,563,342	360 U		400 U	390 U				
Di-n-butyl Phthalate (DBP)	NE	NE	24,800	61,560,629	360 U		400 U	390 U				
Fluoranthene	NE	NE	276,000	22,000,353	360 U		400 U	390 U				
Fluorene	NE	NE	44,300	26,281,433	360 U		400 U	390 U				
Indeno(1,2,3-cd)pyrene	NE	NE	3,320	2,110	360 U		400 U	390 U				
Naphthalene	NE	NE	585	187,691	360 U		400 U	390 U				
Phenanthrene	NE	NE	59,600	29,126,201 [2]	360 U		400 U	390 U				
Pyrene	NE	NE	286,000	29,126,201	360 U		400 U	390 U				
Metals (mg/kg)												
Arsenic	1.71	0.88	5.24	1.59	0.8 U		NA	2.3 U				
Barium	32.6	19.4	848	66,577	9.4 J		NA	**26.7 J**				
Cadmium	NE	0.0525	2.72	451	0.23 U		NA	**1.4**				
Chromium	19.0	8.93	27.2	448	5.6		NA	**17**				
Lead	22.6	25.8	270	800	12.8		NA	**60.8**				
Mercury	0.095	0.120	0.0150	307	0.03 U		NA	0.04 U				
Selenium	1.21	1.25	12.2	5,110	0.67 U		NA	0.78 U				
Silver	0.227	0.372	223	5,110	0.13 U		NA	0.13 U				

Notes:

Shaded values exceed AOC 2 background concentrations for surface soil.
Bolded values exceed Base background concentrations for combined surface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[3] Based on professional judgement, value used is for naphthalene as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-7
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB01-03	SWMU318-SB01-04	SWMU318-SB02-01	SWMU318-SB02-01D	SWMU318-SB02-04	SWMU318-SB02-06	SWMU318-SB03-01	SWMU318-SB03-04	SWMU318-SB04-01
Sample Date	Groundwater	Industrial Soil	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/19/2004	3/16/2004
Sample Depth (ft bgs)	Standards	PRGs	5-7	7-9	1-3	1-3	7-9	11-13	1-3	7-9	1-3
Volatile Organic Compounds (ug/kg)											
1,1,1,2-Tetrachloroethane	NE	7,275	13 U	15 U	SAMPLE NOT SELECTED FOR MOBILE LABORATORY ANALYSIS.	SAMPLE NOT SELECTED FOR MOBILE LABORATORY ANALYSIS.	133 U	13 U	11 U	3 J	5.9 U
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]	13 U	15 U			133 U	13 U	11 U	4 J	5.9 U
1,2,4-Trichlorobenzene	2,610	215,925	13 U	15 U			133 U	13 U	11 U	6 J	5.9 U
1,2,4-Trimethylbenzene	7,490	170,272	13 U	15 U			133 U	13 U	11 U	3 J	15
1,2-Dichlorobenzene (o-)	7,270	600,000	13 U	15 U			133 U	13 U	11 U	11 U	5.9 U
1,2-Dichloroethene (cis)	350	146,301	13 U	15 U			133 U	13 U	11 U	11 U	5.9 U
1,3,5-Trimethylbenzene	7,330	69,712	13 U	15 U			133 U	13 U	11 U	46	5.9 U
1,3-Dichlorobenzene (m-)	23,700	600,000	13 U	15 U			133 U	13 U	11 U	11 U	5.9 U
1,4-Dichlorobenzene (p-)	1,240	7,867	13 U	15 U			133 U	13 U	11 U	11 U	3.2 J
4-Isopropyltoluene	7,270 [2]	520,000 [2]	13 U	15 U			133 U	13 U	11 U	46	14
Bromoform	1.25	218,200	13 U	15 U			133 U	13 U	11 U	5 J	5.9 U
Butylbenzene, sec-	3,330	220,000	13 U	15 U			133 U	13 U	11 U	17	5.9 U
Chlorobenzene	438	530,466	13 U	15 U			133 U	13 U	11 U	11 U	5.9 U
Hexachlorobutadiene	257	22,099	13 U	15 U			133 U	13 U	11 U	7 J	5.9 U
Isopropylbenzene (Cumene)	1,680	1,977,451	13 U	15 U			133 U	13 U	11 U	549 U	5.9 U
Naphthalene	585	187,691	13 U	15 U			320	51	11 U	3630	84
n-Butylbenzene	4,310	240,000	13 U	15 U			133 U	13 U	11 U	1230	6
n-Propylbenzene	1,710	240,000	13 U	15 U			133 U	13 U	11 U	11 U	5.9 U
Styrene (Ethenylbenzene)	2,240	1,700,000	13 U	15 U			133 U	13 U	11 U	2 J	5.9 U
Toluene	7,270	520,000	13 U	15 U			133 U	13 U	11 U	3 J	5.9 J
Xylene, m-	4960 [3]	420,000 [3]	27 U	30 U			267 U	25 U	23 U	3 J	2.8 J
Xylene, o-	4960 [3]	420,000 [3]	13 U	15 U			133 U	13 U	11 U	4 J	5.9 U

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, the value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[3] Based on professional judgement, the value used is for total xylenes as a surrogate compound.

TABLE 4-7
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB04-02	SWMU318-SB04-04	SWMU318-SB05-02	SWMU318-SB05-02D	SWMU318-SB05-03	SWMU318-SB06-02	SWMU318-SB06-02D	SWMU318-SB06-04	SWMU318-SB07-02
Sample Date	Groundwater	Industrial Soil	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/20/2004
Sample Depth (ft bgs)	Standards	PRGs	3-5	7-9	3-5	3-5	5-7	3-5	3-5	7-9	3-5
Volatile Organic Compounds (ug/kg)											
1,1,1,2-Tetrachloroethane	NE	7,275	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
1,2,4-Trichlorobenzene	2,610	215,925	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
1,2,4-Trimethylbenzene	7,490	170,272	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	3.2 J
1,2-Dichlorobenzene (o-)	7,270	600,000	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.6
1,2-Dichloroethene (cis)	350	146,301	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	2.2 J
1,3,5-Trimethylbenzene	7,330	69,712	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
1,3-Dichlorobenzene (m-)	23,700	600,000	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
1,4-Dichlorobenzene (p-)	1,240	7,867	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
4-Isopropyltoluene	7,270 [2]	520,000 [2]	13 U	13 U	13 U	12 U	12 U	125 U	123 U	16	6.2 U
Bromoform	1.25	218,200	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
Butylbenzene, sec-	3,330	220,000	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
Chlorobenzene	438	530,466	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
Hexachlorobutadiene	257	22,099	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
Isopropylbenzene (Cumene)	1,680	1,977,451	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
Naphthalene	585	187,691	13 U	13 U	13 U	12 U	12 U	71 J	160	59	14
n-Butylbenzene	4,310	240,000	13 U	13 U	13 U	12 U	12 U	125 U	123 U	9 J	3.2 J
n-Propylbenzene	1,710	240,000	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
Styrene (Ethenylbenzene)	2,240	1,700,000	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
Toluene	7,270	520,000	13 U	13 U	13 U	12 U	12 U	125 U	123 U	14 U	6.2 U
Xylene, m-	4960 [3]	420,000 [3]	27 U	25 U	3 J	2 J	3 J	250 U	247 U	29 U	6.2 U
Xylene, o-	4960 [3]	420,000 [3]	13 U	13 U	13 U	4 J	3 J	125 U	123 U	14 U	6.2 U

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, the value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[3] Based on professional judgement, the value used is for total xylenes as a surrogate compound.

TABLE 4-7
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB07-04	SWMU318-SB08-02	SWMU318-SB08-04	SWMU318-SB09-02	SWMU318-SB09-03	SWMU318-SB10-02	SWMU318-SB10-03	SWMU318-SB11-01	SWMU318-SB11-03
Sample Date	Groundwater	Industrial Soil	3/20/2004	3/20/2004	3/20/2004	3/22/2004	3/22/2004	3/23/2004	3/23/2004	3/22/2004	3/22/2004
Sample Depth (ft bgs)	Standards	PRGs	7-9	3-5	7-9	3-5	5-7	3-5	5-7	1-3	5-7
Volatile Organic Compounds (ug/kg)											
1,1,1,2-Tetrachloroethane	NE	7,275	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.2 U
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.2 U
1,2,4-Trichlorobenzene	2,610	215,925	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.2 U
1,2,4-Trimethylbenzene	7,490	170,272	2 J	23	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	22
1,2-Dichlorobenzene (o-)	7,270	600,000	14 U	6.3 U	6.3 U	6 U	4 J	6.3 U	7.6 U	5.9 U	6.2 U
1,2-Dichloroethene (cis)	350	146,301	4 J	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.2 U
1,3,5-Trimethylbenzene	7,330	69,712	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	2.7 J
1,3-Dichlorobenzene (m-)	23,700	600,000	41	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.2 U
1,4-Dichlorobenzene (p-)	1,240	7,867	7 J	6.3 U	6.3 U	6 U	6.3	6.3 U	7.6 U	5.9 U	6.2 U
4-Isopropyltoluene	7,270 [2]	520,000 [2]	7 J	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.9
Bromoform	1.25	218,200	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.2 U
Butylbenzene, sec-	3,330	220,000	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.7
Chlorobenzene	438	530,466	14 U	6.3 U	6.3 U	6 U	17	6.3 U	7.6 U	5.9 U	6.2 U
Hexachlorobutadiene	257	22,099	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.2 U
Isopropylbenzene (Cumene)	1,680	1,977,451	39	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.2 U
Naphthalene	585	187,691	243 E	120	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	352
n-Butylbenzene	4,310	240,000	80	27	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	170
n-Propylbenzene	1,710	240,000	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.2 U
Styrene (Ethenylbenzene)	2,240	1,700,000	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.2 U
Toluene	7,270	520,000	4 J	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.2 U
Xylene, m-	4960 [3]	420,000 [3]	28 U	6.3 U	6.3 U	6 U	6 U	2.7 J	3.5 J	5.9 U	6.2 U
Xylene, o-	4960 [3]	420,000 [3]	5 J	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.2 U

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, the value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[3] Based on professional judgement, the value used is for total xylenes as a surrogate compound.

TABLE 4-7
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB11-03D	SWMU318-SB12-01	SWMU318-SB12-04	SWMU318-SB13-01	SWMU318-SB13-03	SWMU318-SB14-01	SWMU318-SB14-02	SWMU318-SB14-03	SWMU318-SB15-01
Sample Date	Groundwater	Industrial Soil	3/22/2004	3/22/2004	3/22/2004	3/23/2004	3/23/2004	2/5/2005	2/5/2005	2/5/2005	2/5/2005
Sample Depth (ft bgs)	Standards	PRGs	5-7	1-3	7-9	1-3	5-7	1-3	3-5	5-7	1-3
Volatile Organic Compounds (ug/kg)											
1,1,1,2-Tetrachloroethane	NE	7,275	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	0.79 J	0.66 J	0.73 J	0.53 J
1,2,4-Trichlorobenzene	2,610	215,925	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	0.64 J	0.52 J	0.57 J	0.54 J
1,2,4-Trimethylbenzene	7,490	170,272	100	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
1,2-Dichlorobenzene (o-)	7,270	600,000	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
1,2-Dichloroethene (cis)	350	146,301	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	7,330	69,712	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
1,3-Dichlorobenzene (m-)	23,700	600,000	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
1,4-Dichlorobenzene (p-)	1,240	7,867	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
4-Isopropyltoluene	7,270 [2]	520,000 [2]	19	5.8 U	6.4 U	6.1 U	7.7 U	NA	NA	NA	NA
Bromoform	1.25	218,200	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
Butylbenzene, sec-	3,330	220,000	41	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
Chlorobenzene	438	530,466	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	257	22,099	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	6 U	6 U	7 U	6 U
Isopropylbenzene (Cumene)	1,680	1,977,451	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
Naphthalene	585	187,691	148	5.8 U	6.4 U	6.1 U	7.7 U	0.99 J	6 U	7 U	6 U
n-Butylbenzene	4,310	240,000	659	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
n-Propylbenzene	1,710	240,000	2.6 J	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
Styrene (Ethenylbenzene)	2,240	1,700,000	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Toluene	7,270	520,000	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Xylene, m-	4960 [3]	420,000 [3]	2.9 J	5.8 U	6.4 U	4.2 J	7.7 U	2 U	2 U	3 U	2 U
Xylene, o-	4960 [3]	420,000 [3]	2.7 J	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, the value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[3] Based on professional judgement, the value used is for total xylenes as a surrogate compound.

TABLE 4-7
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB15-02	SWMU318-SB15-02D	SWMU318-SB15-03	SWMU318-SB16-02	SWMU318-SB16-03	SWMU318-SB17-01	SWMU318-SB17-02	SWMU318-SB17-03	SWMU318-SB18-01
Sample Date	Groundwater	Industrial Soil	2/5/2005	2/5/2005	2/5/2005	2/4/2005	2/4/2005	2/5/2005	2/5/2005	2/5/2005	2/7/2005
Sample Depth (ft bgs)	Standards	PRGs	3-5	3-5	5-7	3-5	5-7	1-3	3-5	5-7	1-3
Volatile Organic Compounds (ug/kg)											
1,1,1,2-Tetrachloroethane	NE	7,275	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]	0.72 J	0.64 J	0.57 J	0.59 J	7 U	0.57 J	1 J	0.95 J	
1,2,4-Trichlorobenzene	2,610	215,925	0.45 J	0.43 J	0.52 J	0.42 J	0.44 J	0.4 J	0.8 J	0.81 J	
1,2,4-Trimethylbenzene	7,490	170,272	2 U	2 U	3 U	2 U	3 U	2 U	0.46 J	0.43 J	
1,2-Dichlorobenzene (o-)	7,270	600,000	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	
1,2-Dichloroethene (cis)	350	146,301	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,3,5-Trimethylbenzene	7,330	69,712	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	
1,3-Dichlorobenzene (m-)	23,700	600,000	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	
1,4-Dichlorobenzene (p-)	1,240	7,867	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	
4-Isopropyltoluene	7,270 [2]	520,000 [2]	NA	NA	NA	NA	NA	NA	NA	NA	
Bromoform	1.25	218,200	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	
Butylbenzene, sec-	3,330	220,000	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	
Chlorobenzene	438	530,466	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Hexachlorobutadiene	257	22,099	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	
Isopropylbenzene (Cumene)	1,680	1,977,451	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	
Naphthalene	585	187,691	6 U	6 U	7 U	6 U	7 U	6 U	1.4 J	1.1 J	
n-Butylbenzene	4,310	240,000	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	
n-Propylbenzene	1,710	240,000	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	
Styrene (Ethenylbenzene)	2,240	1,700,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Toluene	7,270	520,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Xylene, m-	4960 [3]	420,000 [3]	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	
Xylene, o-	4960 [3]	420,000 [3]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	

SAMPLE ANALYZED FOR TOD AND TOC ONLY.

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

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NA - Not Applicable.
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U - Not Detected

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TABLE 4-7
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB18-02	SWMU318-SB18-03	SWMU318-SB19-02	SWMU318-SB19-05	SWMU318-SB20-02	SWMU318-SB20-04	SWMU318-SB21-02	SWMU318-SB21-04	SWMU318-SB22-03
Sample Date	Groundwater	Industrial Soil	2/7/2005	2/7/2005	2/4/2005	2/4/2005	2/3/2005	2/3/2005	2/3/2005	2/3/2005	2/7/2005
Sample Depth (ft bgs)	Standards	PRGs	3-5	5-7	3-5	9-11	3-5	7-9	3-5	7-9	5-7
Volatile Organic Compounds (ug/kg)											
1,1,1,2-Tetrachloroethane	NE	7,275	3 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]	6 U	0.83 J	0.91 J	7 U	6 U	6 U	6 U	1 J	0.84 J
1,2,4-Trichlorobenzene	2,610	215,925	6 U	0.53 J	0.75 J	7 U	6 U	6 U	6 U	0.97 J	0.71 J
1,2,4-Trimethylbenzene	7,490	170,272	3 U	3 U	0.43 J	3 U	3 U	2 U	3 U	0.63 J	3 U
1,2-Dichlorobenzene (o-)	7,270	600,000	3 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U
1,2-Dichloroethene (cis)	350	146,301	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	7,330	69,712	3 U	3 U	3 U	3 U	3 U	2 U	3 U	0.53 J	3 U
1,3-Dichlorobenzene (m-)	23,700	600,000	3 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U
1,4-Dichlorobenzene (p-)	1,240	7,867	3 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U
4-Isopropyltoluene	7,270 [2]	520,000 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	1.25	218,200	3 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U
Butylbenzene, sec-	3,330	220,000	3 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U
Chlorobenzene	438	530,466	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	257	22,099	6 U	7 U	6 U	7 U	6 U	6 U	6 U	7 U	6 U
Isopropylbenzene (Cumene)	1,680	1,977,451	3 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U
Naphthalene	585	187,691	6 U	7 U	6 U	7 U	6 U	6 U	6 U	1.4 J	1.2 J
n-Butylbenzene	4,310	240,000	3 U	3 U	3 U	3 U	3 U	2 U	3 U	0.66 J	3 U
n-Propylbenzene	1,710	240,000	3 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U
Styrene (Ethenylbenzene)	2,240	1,700,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	7,270	520,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene, m-	4960 [3]	420,000 [3]	3 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U
Xylene, o-	4960 [3]	420,000 [3]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, the value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[3] Based on professional judgement, the value used is for total xylenes as a surrogate compound.

TABLE 4-7
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB22-04	SWMU318-SB23-02	SWMU318-SB23-04	SWMU318-SB24-03	SWMU318-SB24-05	SWMU318-SB25-02	SWMU318-SB25-02D	SWMU318-SB25-04	SWMU318-SB25-04D
Sample Date	Groundwater	Industrial Soil	2/7/2005	2/3/2005	2/3/2005	2/7/2005	2/7/2005	2/8/2005	2/8/2005	2/8/2005	2/8/2005
Sample Depth (ft bgs)	Standards	PRGs	7-9	3-5	7-9	5-7	9-11	3-5	3-5	7-9	7-9
Volatile Organic Compounds (ug/kg)											
1,1,1,2-Tetrachloroethane	NE	7,275	3 U	2 U	3 U	3 U	3 U	2 U	SAMPLE NOT SELECTED FOR MOBILE LABORATORY ANALYSIS.	3 U	SAMPLE NOT SELECTED FOR MOBILE LABORATORY ANALYSIS.
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]	7 U	1.3 J	0.64 J	7 U	7 U	6 U		7 U	
1,2,4-Trichlorobenzene	2,610	215,925	7 U	1.1 J	0.59 J	7 U	7 U	6 U		7 U	
1,2,4-Trimethylbenzene	7,490	170,272	3 U	0.64 J	3 U	3 U	3 U	2 U		3 U	
1,2-Dichlorobenzene (o-)	7,270	600,000	3 U	2 U	3 U	3 U	3 U	2 U		3 U	
1,2-Dichloroethene (cis)	350	146,301	1 U	1 U	1 U	1 U	1 U	1 U		1 U	
1,3,5-Trimethylbenzene	7,330	69,712	3 U	2 U	3 U	3 U	3 U	2 U		3 U	
1,3-Dichlorobenzene (m-)	23,700	600,000	3 U	2 U	3 U	3 U	3 U	2 U		3 U	
1,4-Dichlorobenzene (p-)	1,240	7,867	3 U	2 U	3 U	3 U	3 U	2 U		3 U	
4-Isopropyltoluene	7,270 [2]	520,000 [2]	NA	NA	NA	NA	NA	NA		NA	
Bromoform	1.25	218,200	3 U	2 U	3 U	3 U	3 U	2 U		3 U	
Butylbenzene, sec-	3,330	220,000	3 U	2 U	3 U	3 U	3 U	2 U		3 U	
Chlorobenzene	438	530,466	1 U	1 U	1 U	1 U	1 U	1 U		1 U	
Hexachlorobutadiene	257	22,099	7 U	6 U	6 U	7 U	7 U	6 U		7 U	
Isopropylbenzene (Cumene)	1,680	1,977,451	3 U	2 U	3 U	3 U	3 U	2 U		3 U	
Naphthalene	585	187,691	7 U	1.3 J	0.97 J	7 U	7 U	6 U		7 U	
n-Butylbenzene	4,310	240,000	3 U	0.61 J	3 U	3 U	3 U	2 U		3 U	
n-Propylbenzene	1,710	240,000	3 U	2 U	3 U	3 U	3 U	2 U		3 U	
Styrene (Ethenylbenzene)	2,240	1,700,000	1 U	1 U	1 U	1 U	1 U	1 U		1 U	
Toluene	7,270	520,000	1 U	1 U	1 U	1 U	1 U	1 U		1 U	
Xylene, m-	4960 [3]	420,000 [3]	3 U	2 U	3 U	3 U	3 U	2 U		3 U	
Xylene, o-	4960 [3]	420,000 [3]	1 U	1 U	1 U	1 U	1 U	1 U		1 U	

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, the value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[3] Based on professional judgement, the value used is for total xylenes as a surrogate compound.

TABLE 4-7
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB26-01	SWMU318-SB26-02	SWMU318-SB27-02	SWMU318-SB27-02D	SWMU318-SB27-03	SWMU318-SB27-03D	SWMU318-SB28-02	SWMU318-SB28-02D	SWMU318-SB28-04
Sample Date	Groundwater	Industrial Soil	2/4/2005	2/4/2005	2/7/2005	2/7/2005	2/7/2005	2/7/2005	2/8/2005	2/8/2005	2/8/2005
Sample Depth (ft bgs)	Standards	PRGs	1-3	3-5	3-5	3-5	5-7	5-7	3-5	3-5	7-9
Volatile Organic Compounds (ug/kg)											
1,1,1,2-Tetrachloroethane	NE	7,275	2 U	3 U	3 U	SAMPLE NOT SELECTED FOR MOBILE LABORATORY ANALYSIS.	3 U	3 U	2 U	2 U	3 U
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]	6 U	6 U	6 U		7 U	7 U	6 U	6 U	7 U
1,2,4-Trichlorobenzene	2,610	215,925	0.47 J	0.46 J	6 U		0.52 J	7 U	6 U	6 U	7 U
1,2,4-Trimethylbenzene	7,490	170,272	2 U	3 U	3 U		3 U	3 U	2 U	2 U	3 U
1,2-Dichlorobenzene (o-)	7,270	600,000	2 U	3 U	3 U		3 U	3 U	2 U	2 U	3 U
1,2-Dichloroethene (cis)	350	146,301	1 U	0.7 J	0.84 J		0.95 J	2.9	1 U	1 U	1 U
1,3,5-Trimethylbenzene	7,330	69,712	2 U	3 U	3 U		3 U	3 U	2 U	2 U	3 U
1,3-Dichlorobenzene (m-)	23,700	600,000	2 U	3 U	3 U		3 U	3 U	2 U	2 U	3 U
1,4-Dichlorobenzene (p-)	1,240	7,867	2 U	3 U	3 U		3 U	3 U	2 U	2 U	3 U
4-Isopropyltoluene	7,270 [2]	520,000 [2]	NA	NA	NA		NA	NA	NA	NA	NA
Bromoform	1.25	218,200	2 U	3 U	3 U		3 U	3 U	2 U	2 U	3 U
Butylbenzene, sec-	3,330	220,000	2 U	3 U	3 U		3 U	3 U	2 U	2 U	3 U
Chlorobenzene	438	530,466	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	257	22,099	6 U	6 U	6 U		7 U	7 U	6 U	6 U	7 U
Isopropylbenzene (Cumene)	1,680	1,977,451	2 U	3 U	3 U		3 U	3 U	2 U	2 U	3 U
Naphthalene	585	187,691	6 U	6 U	6 U		7 U	7 U	6 U	6 U	7 U
n-Butylbenzene	4,310	240,000	2 U	3 U	3 U		3 U	3 U	2 U	2 U	3 U
n-Propylbenzene	1,710	240,000	2 U	3 U	3 U		3 U	3 U	2 U	2 U	3 U
Styrene (Ethenylbenzene)	2,240	1,700,000	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U
Toluene	7,270	520,000	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U
Xylene, m-	4960 [3]	420,000 [3]	2 U	3 U	3 U		3 U	3 U	2 U	2 U	3 U
Xylene, o-	4960 [3]	420,000 [3]	1 U	1 U	1 U		1 U	1 U	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, the value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[3] Based on professional judgement, the value used is for total xylenes as a surrogate compound.

TABLE 4-7
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	NC Soil to	USEPA Region IX	SWMU318-SB35-01	SWMU318-SB35-01D	SWMU318-SB35-02	SWMU318-SB35-03
Sample Date	Groundwater	Industrial Soil	2/5/2005	2/5/2005	2/5/2005	2/5/2005
Sample Depth (ft bgs)	Standards	PRGs	1-3	1-3	3-5	5-7
Volatile Organic Compounds (ug/kg)						
1,1,1,2-Tetrachloroethane	NE	7,275	2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	2,610 [1]	215,925 [1]	6 U	6 U	1 J	6 U
1,2,4-Trichlorobenzene	2,610	215,925	6 U	6 U	0.76 J	6 U
1,2,4-Trimethylbenzene	7,490	170,272	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	7,270	600,000	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	350	146,301	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	7,330	69,712	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	23,700	600,000	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	1,240	7,867	2 U	2 U	2 U	2 U
4-Isopropyltoluene	7,270 [2]	520,000 [2]	NA	NA	NA	NA
Bromoform	1.25	218,200	2 U	2 U	2 U	2 U
Butylbenzene, sec-	3,330	220,000	2 U	2 U	2 U	2 U
Chlorobenzene	438	530,466	1 U	1 U	1 U	1 U
Hexachlorobutadiene	257	22,099	6 U	6 U	6 U	6 U
Isopropylbenzene (Cumene)	1,680	1,977,451	2 U	2 U	2 U	2 U
Naphthalene	585	187,691	6 U	6 U	1.2 J	6 U
n-Butylbenzene	4,310	240,000	2 U	2 U	2 U	2 U
n-Propylbenzene	1,710	240,000	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	2,240	1,700,000	1 U	1 U	1 U	1 U
Toluene	7,270	520,000	1 U	1 U	1 U	1 U
Xylene, m-	4960 [3]	420,000 [3]	2 U	2 U	2 U	2 U
Xylene, o-	4960 [3]	420,000 [3]	1 U	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, the value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[3] Based on professional judgement, the value used is for total xylenes as a surrogate compound.

TABLE 4-8
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID Sample Date Sample Depth (ft bgs)	AOC 2 Subsurface Soil Background	**Base Background Sand**	NC Soil to Groundwater Standards	USEPA Region IX Industrial Soil PRGs	SWMU318-SB01-03 3/16/2004 5-7	SWMU318-SB01-04 3/16/2004 7-9	SWMU318-SB02-01 3/16/2004 1-3	SWMU318-SB02-01D 3/16/2004 1-3	SWMU318-SB02-04 3/16/2004 7-9	SWMU318-SB02-06 3/16/2004 11-13	SWMU318-SB03-01 3/16/2004 1-3	SWMU318-SB03-04 3/19/2004 7-9	SWMU318-SB04-01 3/16/2004 1-3
Volatile Organic Compounds (ug/kg)													
1,2-Dichloroethene (cis)	NE	NE	1.84	146,301		NA	NA	NA	NA		NA		10 U
1,2-Dichloroethene (total)	NE	NE	350	146,301 [1]		NA	NA	NA	NA		NA		10 U
1,2-Dichloroethene (trans)	NE	NE	380	234,823		NA	NA	NA	NA		NA		10 U
Acetone	NE	NE	2810	54,320,986		NA	NA	NA	NA		NA		12 UJ
Methyl Acetate	NE	NE	NE	91,530,825		NA	NA	NA	NA		NA		19 J
Toluene	NE	NE	7270	520,000		NA	NA	NA	NA		NA		0.9 J
Semi Volatile Organic Compounds (ug/kg)													
3,3'-Dichlorobenzidine	NE	NE	NE	3,830		440 U	370 U	390 U	440 U		380 U		NA
Acenaphthene	NE	NE	8160	29,219,327		20 J	370 U	390 U	440 U		380 U		NA
Anthracene	NE	NE	995000	100,000,000		440 U	370 U	390 U	440 U		380 U		NA
Benzaldehyde	NE	NE	NE	61,560,629		440 U	370 U	390 U	440 U		23 J		NA
Benzo(a)anthracene	NE	NE	343	2,110		68 J	370 U	390 U	440 U		380 U		NA
Benzo(a)pyrene	NE	NE	92.8	211		54 J	370 U	390 U	440 U		380 U		NA
Benzo(b)fluoranthene	NE	NE	1180	2,110		68 J	370 U	390 U	440 U		380 U		NA
Benzo(g,h,i)perylene	NE	NE	6720000	29,126,201 [2]		440 U	370 U	390 UJ	440 U		380 UJ		NA
Benzo(k)fluoranthene	NE	NE	11800	21,096		50 J	370 U	390 U	440 U		380 U		NA
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6670	123,121		440 U	370 U	390 U	440 UJ		380 U		NA
Carbazole	NE	NE	NE	86,185		440 UJ	370 UJ	390 U	440 UJ		380 U		NA
Chrysene	NE	NE	38150	210,962		68 J	370 U	390 U	440 U		380 U		NA
Dibenz(a,h)anthracene	NE	NE	172	211		440 U	370 U	390 U	440 U		380 U		NA
Dibenzofuran	NE	NE	4660	1,563,342		14 J	370 U	390 U	440 U		380 U		NA
Di-n-butyl Phthalate (DBP)	NE	NE	24800	61,560,629		440 U	370 U	390 U	440 U		380 U		NA
Fluoranthene	NE	NE	276000	22,000,353		120 J	370 U	390 U	440 U		380 U		NA
Fluorene	NE	NE	44300	26,281,433		17 J	370 U	390 U	440 U		380 U		NA
Indeno(1,2,3-cd)pyrene	NE	NE	3320	2,110		28 J	370 U	390 U	440 U		380 U		NA
Naphthalene	NE	NE	585	187,691		45 J	140 J	220 J	23 J		18 J		NA
Phenanthrene	NE	NE	59600	29,126,201 [2]		18 J	370 U	390 U	440 U		380 U		NA
Pyrene	NE	NE	286000	29,126,201		120 J	370 U	390 U	440 U		380 U		NA
Metals (mg/kg)													
Arsenic	13.56	1.62	5.24	1.59		1.4 J	1 J	**1.8**	**10.2**		**3.1**		NA
Barium	46.53	21.98	848	66,577		15.9 J	12.8 J	19.3 J	9.4 J		15.3 J		NA
Cadmium	NE	NE	2.72	451		0.14 J	0.09 J	0.11 J	0.05 U		0.05 U		NA
Chromium	37.71	16.28	27.2	448		14.6 J	5 J	8.4 J	11.1 J		10.2 J		NA
Lead	15.24	8.16	270	800		**11**	7.4	**11**	7.5		**8.6**		NA
Mercury	0.07	0.0797	0.015	307		0.07 J	0.04 J	0.05 J	0.03 J		0.06 J		NA
Selenium	0.861	0.69	12.2	5,110		0.5 UJ	**0.81 J**	0.66 J	0.47 UJ		**0.86 J**		NA

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Shaded values exceed AOC 2 background concentrations for subsurface soil.
Bolded values exceed Base background concentrations for sand subsurface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[3] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-8
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID Sample Date Sample Depth (ft bgs)	AOC 2 Subsurface Soil Background	**Base Background Sand**	NC Soil to Groundwater Standards	USEPA Region IX Industrial Soil PRGs	SWMU318-SB04-02 3/16/2004 3-5	SWMU318-SB04-04 3/16/2004 7-9	SWMU318-SB05-02D 3/16/2004 3-5	SWMU318-SB05-02 3/16/2004 3-5	SWMU318-SB05-03 3/16/2004 5-7	SWMU318-SB06-01 3/16/2004 1-3	SWMU318-SB06-01D 3/16/2004 1-3	SWMU318-SB06-02 3/16/2004 3-5
Volatile Organic Compounds (ug/kg)												
1,2-Dichloroethene (cis)	NE	NE	1.84	146,301	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	NE	NE	350	146,301 (1)	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	NE	NE	380	234,823	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NE	NE	2810	54,320,986	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	NE	NE	NE	91,530,825	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NE	NE	7270	520,000	NA	NA	NA	NA	NA	NA	NA	NA
Semi Volatile Organic Compounds (ug/kg)												
3,3'-Dichlorobenzidine	NE	NE	NE	3,830	490 U	410 U	400 U	430 U	87 J	410 U	420 U	430 U
Acenaphthene	NE	NE	8160	29,219,327	490 U	410 U	400 U	430 U	400 U	410 U	420 U	430 U
Anthracene	NE	NE	995000	100,000,000	490 U	410 U	400 U	430 U	31 J	410 U	420 U	430 U
Benzaldehyde	NE	NE	NE	61,560,629	490 U	410 U	400 U	430 U	18 J	28 J	34 J	430 U
Benzo(a)anthracene	NE	NE	343	2,110	42 J	410 U	400 U	430 U	1200	410 U	420 U	430 U
Benzo(a)pyrene	NE	NE	92.8	211	43 J	410 U	400 U	430 U	820	410 U	420 U	430 U
Benzo(b)fluoranthene	NE	NE	1180	2,110	72 J	410 U	400 U	430 U	1500	410 U	420 U	430 U
Benzo(g,h,i)perylene	NE	NE	6720000	29,126,201 (2)	490 UJ	410 UJ	400 U	430 U	130 J	410 UJ	420 U	430 U
Benzo(k)fluoranthene	NE	NE	11800	21,096	39 J	410 U	400 U	430 U	1200	410 U	420 U	430 U
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6670	123,121	490 U	410 U	400 UJ	430 UJ	400 UJ	410 U	420 UJ	430 UJ
Carbazole	NE	NE	NE	86,185	490 U	410 U	400 UJ	430 UJ	65 J	410 U	420 UJ	430 UJ
Chrysene	NE	NE	38150	210,962	50 J	410 U	400 U	430 U	1900	410 U	420 U	430 U
Dibenz(a,h)anthracene	NE	NE	172	211	490 U	410 U	400 U	430 U	180 J	410 U	420 U	430 U
Dibenzofuran	NE	NE	4660	1,563,342	490 U	410 U	400 U	430 U	400 U	410 U	420 U	430 U
Di-n-butyl Phthalate (DBP)	NE	NE	24800	61,560,629	490 U	410 U	400 U	430 UJ	4600 D	410 U	420 U	430 U
Fluoranthene	NE	NE	276000	22,000,353	67 J	410 U	400 U	430 U	3000	410 U	420 U	430 U
Fluorene	NE	NE	44300	26,281,433	490 U	410 U	400 U	430 U	400 U	410 U	420 U	430 U
Indeno(1,2,3-cd)pyrene	NE	NE	3320	2,110	32 J	410 U	400 U	430 U	440	410 U	420 U	430 U
Naphthalene	NE	NE	585	187,691	490 U	410 U	400 U	430 U	400 U	310 J	280 J	89 J
Phenanthrene	NE	NE	59600	29,126,201 (2)	490 U	410 U	400 U	430 U	170 J	410 U	420 U	430 U
Pyrene	NE	NE	286000	29,126,201	68 J	410 U	400 U	430 U	2200	410 U	420 U	430 U
Metals (mg/kg)												
Arsenic	13.56	1.62	5.24	1.59	**51**	1.6 J	**5.4**	**4.4**	**1.9**	1 J	1.6 J	1.1 J
Barium	46.53	21.98	848	66,577	21.4 J	4.8 J	**22.8** J	18.8 J	16.2 J	13.6 J	14.9 J	**23.5** J
Cadmium	NE	NE	2.72	451	0.07 U	0.05 U	0.15 J	0.24 J	0.37 J	0.07 J	0.08 J	0.05 U
Chromium	37.71	16.28	27.2	448	**34 J**	6.7 J	**18.6**	13.2	8.1	5.1 J	7.2 J	14 J
Lead	15.24	8.16	270	800	**14.8**	6.7	**26.1 J**	**45.9 J**	**12.2 J**	**10.1**	**9.5**	**15.8**
Mercury	0.07	0.0797	0.015	307	0.07 J	0.03 J	**0.08 J**	0.04 J	0.04 J	0.05 J	0.05 J	**0.11**
Selenium	0.861	0.69	12.2	5,110	**0.89 J**	**0.77 J**	0.5 J	0.42 U	0.62 J	**1 J**	0.65 J	0.6 J

Notes:

Shaded values exceed AOC 2 background concentrations for subsurface soil.
Bolded values exceed Base background concentrations for sand subsurface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected
UJ - Not detected. Reported value is estimated.

(3) Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
(5) Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-8
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID Sample Date Sample Depth (ft bgs)	AOC 2 Subsurface Soil Background	**Base Background Sand**	NC Soil to Groundwater Standards	USEPA Region IX Industrial Soil PRGs	SWMU318-SB06-02D 3/16/2004 3-5	SWMU318-SB06-04 3/16/2004 7-9	SWMU318-SB07-02 3/20/2004 3-5	SWMU318-SB07-04 3/20/2004 7-9	SWMU318-SB08-02 3/20/2004 3-5	SWMU318-SB08-04 3/20/2004 7-9	SWMU318-SB09-02 3/22/2004 3-5	SWMU318-SB09-03 3/22/2004 5-7
Volatile Organic Compounds (ug/kg)												
1,2-Dichloroethene (cis)	NE	NE	1.84	146,301			NA			NA	NA	
1,2-Dichloroethene (total)	NE	NE	350	146,301 [1]			NA			NA	NA	
1,2-Dichloroethene (trans)	NE	NE	380	234,823			NA			NA	NA	
Acetone	NE	NE	2810	54,320,986			NA			NA	NA	
Methyl Acetate	NE	NE	NE	91,530,825			NA			NA	NA	
Toluene	NE	NE	7270	520,000			NA			NA	NA	
Semi Volatile Organic Compounds (ug/kg)					SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.		SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.			SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.
3,3'-Dichlorobenzidine	NE	NE	NE	3,830			420 U			450 U	390 UJ	
Acenaphthene	NE	NE	8160	29,219,327			420 U			450 U	390 U	
Anthracene	NE	NE	995000	100,000,000			420 U			450 U	390 U	
Benzaldehyde	NE	NE	NE	61,560,629			420 U			450 U	390 U	
Benzo(a)anthracene	NE	NE	343	2,110			420 U			450 U	390 U	
Benzo(a)pyrene	NE	NE	92.8	211			420 U			450 U	390 U	
Benzo(b)fluoranthene	NE	NE	1180	2,110			420 U			450 U	390 U	
Benzo(g,h,i)perylene	NE	NE	6720000	29,126,201 [2]			420 U			450 U	390 U	
Benzo(k)fluoranthene	NE	NE	11800	21,096			420 U			450 U	390 U	
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6670	123,121			420 UJ			450 UJ	390 U	
Carbazole	NE	NE	NE	86,185			420 UJ			450 UJ	390 U	
Chrysene	NE	NE	38150	210,962			420 U			450 U	390 U	
Dibenz(a,h)anthracene	NE	NE	172	211			420 U			450 U	390 U	
Dibenzofuran	NE	NE	4660	1,563,342			420 U			450 U	390 U	
Di-n-butyl Phthalate (DBP)	NE	NE	24800	61,560,629			420 U			450 U	390 U	
Fluoranthene	NE	NE	276000	22,000,353			420 U			450 U	390 U	
Fluorene	NE	NE	44300	26,281,433			420 U			450 U	390 U	
Indeno(1,2,3-cd)pyrene	NE	NE	3320	2,110			420 U			450 U	390 U	
Naphthalene	NE	NE	585	187,691			420 U			450 U	390 U	
Phenanthrene	NE	NE	59600	29,126,201 [2]			420 U			450 U	390 U	
Pyrene	NE	NE	286000	29,126,201			420 U			450 U	390 U	
Metals (mg/kg)												
Arsenic	13.56	1.62	5.24	1.59			1.6			**4.5**	0.44 U	
Barium	46.53	21.98	848	66,577			19.1			11.5	6.2 J	
Cadmium	NE	NE	2.72	451			1.8 U			1.8 U	0.05 U	
Chromium	37.71	16.28	27.2	448			8			15.5	7	
Lead	15.24	8.16	270	800			**10.1**			7.8	3.8 J	
Mercury	0.07	0.0797	0.015	307			0.05 J			0.03 J	0.01 U	
Selenium	0.861	0.69	12.2	5,110			0.64 J			0.48 J	0.48 U	

Notes:

Shaded values exceed AOC 2 background concentrations for subsurface soil.
Bolded values exceed Base background concentrations for sand subsurface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[3] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-8
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID Sample Date Sample Depth (ft bgs)	AOC 2 Subsurface Soil Background	**Base Background Sand**	NC Soil to Groundwater Standards	USEPA Region IX Industrial Soil PRGs	SWMU318-SB10-02 3/23/2004 3-5	SWMU318-SB10-03 3/23/2004 5-7	SWMU318-SB11-01 3/23/2004 1-3	SWMU318-SB11-03 3/23/2004 5-7	SWMU318-SB12-01 3/23/2004 1-3	SWMU318-SB12-04 3/23/2004 7-9	SWMU318-SB13-01 3/23/2004 1-3	SWMU318-SB13-03 3/23/2004 5-7
Volatile Organic Compounds (ug/kg)												
1,2-Dichloroethene (cis)	NE	NE	1.84	146,301		NA	NA	NA	NA	NA		
1,2-Dichloroethene (total)	NE	NE	350	146,301 [1]		NA	NA	NA	NA	NA		
1,2-Dichloroethene (trans)	NE	NE	380	234,823		NA	NA	NA	NA	NA		
Acetone	NE	NE	2810	54,320,986		NA	NA	NA	NA	NA		
Methyl Acetate	NE	NE	NE	91,530,825		NA	NA	NA	NA	NA		
Toluene	NE	NE	7270	520,000		NA	NA	NA	NA	NA		
Semi Volatile Organic Compounds (ug/kg)					SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.						SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.
3,3'-Dichlorobenzidine	NE	NE	NE	3,830		470 UJ	380 UJ	430 UJ	380 UJ	430 UJ		
Acenaphthene	NE	NE	8160	29,219,327		470 U	380 U	430 U	380 U	430 U		
Anthracene	NE	NE	995000	100,000,000		470 U	380 U	430 U	380 U	430 U		
Benzaldehyde	NE	NE	NE	61,560,629		470 UJ	380 U	430 U	380 U	430 U		
Benzo(a)anthracene	NE	NE	343	2,110		470 U	380 U	430 U	380 U	430 U		
Benzo(a)pyrene	NE	NE	92.8	211		470 U	380 U	430 U	380 U	430 U		
Benzo(b)fluoranthene	NE	NE	1180	2,110		470 U	380 U	430 U	380 U	430 U		
Benzo(g,h,i)perylene	NE	NE	6720000	29,126,201 [2]		470 U	380 U	430 U	380 U	430 U		
Benzo(k)fluoranthene	NE	NE	11800	21,096		470 U	380 U	430 U	380 U	430 U		
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6670	123,121		470 U	380 U	430 U	380 U	430 U		
Carbazole	NE	NE	NE	86,185		470 U	380 U	430 U	380 U	430 U		
Chrysene	NE	NE	38150	210,962		470 U	380 U	430 U	380 U	430 U		
Dibenz(a,h)anthracene	NE	NE	172	211		470 U	380 U	430 U	380 U	430 U		
Dibenzofuran	NE	NE	4660	1,563,342		470 U	380 U	430 U	380 U	430 U		
Di-n-butyl Phthalate (DBP)	NE	NE	24800	61,560,629		470 U	380 U	430 U	380 U	430 U		
Fluoranthene	NE	NE	276000	22,000,353		470 U	380 U	430 U	380 U	430 U		
Fluorene	NE	NE	44300	26,281,433		470 U	380 U	430 U	380 U	430 U		
Indeno(1,2,3-cd)pyrene	NE	NE	3320	2,110		470 U	380 U	430 U	380 U	430 U		
Naphthalene	NE	NE	585	187,691		470 U	380 U	580	380 U	430 U		
Phenanthrene	NE	NE	59600	29,126,201 [2]		470 U	380 U	430 U	380 U	430 U		
Pyrene	NE	NE	286000	29,126,201		470 U	380 U	430 U	380 U	430 U		
Metals (mg/kg)												
Arsenic	13.56	1.62	5.24	1.59		**5**	**2 J**	1.4 J	**1.9 J**	**10.6**		
Barium	46.53	21.98	848	66,577		21.7 J	**59.8**	9.1 J	9.2 J	19.4 J		
Cadmium	NE	NE	2.72	451		0.06 U	0.99 U	0.05 U	0.05 U	0.62 J		
Chromium	37.71	16.28	27.2	448		**29.8**	6.2	3	6.4	**21.2**		
Lead	15.24	8.16	270	800		**14.4 J**	**13.7 J**	5.3 J	3.5 J	15.3		
Mercury	0.07	0.0797	0.015	307		0.06 J	0.05 J	0.04 J	0.03 J	0.06 J		
Selenium	0.861	0.69	12.2	5,110		0.53 U	**1.1**	0.68 J	0.67 J	1		

Notes:

Shaded values exceed AOC 2 background concentrations for subsurface soil.
Bolded values exceed Base background concentrations for sand subsurface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
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[3] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-8
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID Sample Date Sample Depth (ft bgs)	AOC 2 Subsurface Soil Background	**Base Background Sand**	NC Soil to Groundwater Standards	USEPA Region IX Industrial Soil PRGs	SWMU318-SB14-01 2/5/2005 1-3	SWMU318-SB14-02 2/5/2005 3-5	SWMU318-SB14-03 2/5/2005 5-7	SWMU318-SB15-01 2/5/2005 1-3	SWMU318-SB15-02 2/5/2005 3-5	SWMU318-SB15-02D 2/5/2005 3-5	SWMU318-SB15-03 2/5/2005 5-7	SWMU318-SB16-02 2/4/2005 3-5
Volatile Organic Compounds (ug/kg)												
1,2-Dichloroethene (cis)	NE	NE	1.84	146,301		NA	NA	NA			NA	NA
1,2-Dichloroethene (total)	NE	NE	350	146,301 [1]		NA	NA	NA			NA	NA
1,2-Dichloroethene (trans)	NE	NE	380	234,823		NA	NA	NA			NA	NA
Acetone	NE	NE	2810	54,320,986		NA	NA	NA			NA	NA
Methyl Acetate	NE	NE	NE	91,530,825		NA	NA	NA			NA	NA
Toluene	NE	NE	7270	520,000		NA	NA	NA			NA	NA
Semi Volatile Organic Compounds (ug/kg)												
3,3'-Dichlorobenzidine	NE	NE	NE	3,830		390 U	440 U	360 U			480 U	400 U
Acenaphthene	NE	NE	8160	29,219,327		390 U	440 U	360 U			480 U	400 U
Anthracene	NE	NE	995000	100,000,000		390 U	440 U	360 U			480 U	400 U
Benzaldehyde	NE	NE	NE	61,560,629		390 U	440 U	360 U			480 U	400 U
Benzo(a)anthracene	NE	NE	343	2,110		390 U	440 U	360 U			480 U	400 U
Benzo(a)pyrene	NE	NE	92.8	211		390 U	440 U	360 U			480 U	400 U
Benzo(b)fluoranthene	NE	NE	1180	2,110		390 U	440 U	360 U			480 U	400 U
Benzo(g,h,i)perylene	NE	NE	6720000	29,126,201 [2]		390 U	440 U	360 U			480 U	400 U
Benzo(k)fluoranthene	NE	NE	11800	21,096		390 U	440 U	360 U			480 U	400 U
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6670	123,121		390 U	440 U	360 U			480 U	400 U
Carbazole	NE	NE	NE	86,185		390 U	440 U	360 U			480 U	400 U
Chrysene	NE	NE	38150	210,962		390 U	440 U	360 U			480 U	400 U
Dibenz(a,h)anthracene	NE	NE	172	211		390 U	440 U	360 U			480 U	400 U
Dibenzofuran	NE	NE	4660	1,563,342		390 U	440 U	360 U			480 U	400 U
Di-n-butyl Phthalate (DBP)	NE	NE	24800	61,560,629		390 U	440 U	360 U			480 U	400 U
Fluoranthene	NE	NE	276000	22,000,353		390 U	440 U	360 U			480 U	400 U
Fluorene	NE	NE	44300	26,281,433		390 U	440 U	360 U			480 U	400 U
Indeno(1,2,3-cd)pyrene	NE	NE	3320	2,110		390 U	440 U	360 U			480 U	400 U
Naphthalene	NE	NE	585	187,691		390 U	440 U	360 U			480 U	400 U
Phenanthrene	NE	NE	59600	29,126,201 [2]		390 U	440 U	360 U			480 U	400 U
Pyrene	NE	NE	286000	29,126,201		390 U	440 U	360 U			480 U	400 U
Metals (mg/kg)												
Arsenic	13.56	1.62	5.24	1.59		3 U	**37.4**	0.8 U			**20.7**	1.7 U
Barium	46.53	21.98	848	66,577		10 J	12 J	5.1 J			**22 J**	20.5 J
Cadmium	NE	NE	2.72	451		0.05 U	0.06 U	0.13 U			0.06 U	1.9
Chromium	37.71	16.28	27.2	448		12.6	**17**	5.3			**31.4**	14.2
Lead	15.24	8.16	270	800		6.8	6.7	3.1 U			**12.5**	22.6
Mercury	0.07	0.0797	0.015	307		0.02 U	0.01 U	0.01 U			0.05 U	0.06 U
Selenium	0.861	0.69	12.2	5,110		0.64 U	1.8 U	0.68 U			1.2 U	0.71 U

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Shaded values exceed AOC 2 background concentrations for subsurface soil.
Bolded values exceed Base background concentrations for sand subsurface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
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[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-8
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID Sample Date Sample Depth (ft bgs)	AOC 2 Subsurface Soil Background	**Base Background Sand**	NC Soil to Groundwater Standards	USEPA Region IX Industrial Soil PRGs	SWMU318-SB16-03 2/4/2005 5-7	SWMU318-SB17-01 2/5/2005 1-3	SWMU318-SB17-02 2/5/2005 3-5	SWMU318-SB17-03 2/5/2005 5-7	SWMU318-SB18-01 2/7/2005 1-3	SWMU318-SB18-02 2/7/2005 3-5	SWMU318-SB18-03 2/7/2005 5-7	SWMU318-SB19-02 2/4/2005 3-5
Volatile Organic Compounds (ug/kg)												
1,2-Dichloroethene (cis)	NE	NE	1.84	146,301			NA	NA	NA	NA	NA	
1,2-Dichloroethene (total)	NE	NE	350	146,301 [1]			NA	NA	NA	NA	NA	
1,2-Dichloroethene (trans)	NE	NE	380	234,823			NA	NA	NA	NA	NA	
Acetone	NE	NE	2810	54,320,986			NA	NA	NA	NA	NA	
Methyl Acetate	NE	NE	NE	91,530,825			NA	NA	NA	NA	NA	
Toluene	NE	NE	7270	520,000			NA	NA	NA	NA	NA	
Semi Volatile Organic Compounds (ug/kg)												
3,3'-Dichlorobenzidine	NE	NE	NE	3,830	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	420 U	460 U	NA	420 U	450 U	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.
Acenaphthene	NE	NE	8160	29,219,327			420 U	460 U	NA	420 U	450 U	
Anthracene	NE	NE	995000	100,000,000			420 U	460 U	NA	420 U	450 U	
Benzaldehyde	NE	NE	NE	61,560,629			420 U	460 U	NA	420 U	450 U	
Benzo(a)anthracene	NE	NE	343	2,110			420 U	460 U	NA	420 U	450 U	
Benzo(a)pyrene	NE	NE	92.8	211			420 U	460 U	NA	420 U	450 U	
Benzo(b)fluoranthene	NE	NE	1180	2,110			420 U	460 U	NA	420 U	450 U	
Benzo(g,h,i)perylene	NE	NE	6720000	29,126,201 [2]			420 U	460 U	NA	420 U	450 U	
Benzo(k)fluoranthene	NE	NE	11800	21,096			420 U	460 U	NA	420 U	450 U	
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6670	123,121			420 U	460 U	NA	420 U	450 U	
Carbazole	NE	NE	NE	86,185			420 U	460 U	NA	420 U	450 U	
Chrysene	NE	NE	38150	210,962			420 U	460 U	NA	420 U	450 U	
Dibenz(a,h)anthracene	NE	NE	172	211			420 U	460 U	NA	420 U	450 U	
Dibenzofuran	NE	NE	4660	1,563,342			420 U	460 U	NA	420 U	450 U	
Di-n-butyl Phthalate (DBP)	NE	NE	24800	61,560,629			420 U	460 U	NA	420 U	450 U	
Fluoranthene	NE	NE	276000	22,000,353			420 U	460 U	NA	420 U	450 U	
Fluorene	NE	NE	44300	26,281,433			420 U	460 U	NA	420 U	450 U	
Indeno(1,2,3-cd)pyrene	NE	NE	3320	2,110			420 U	460 U	NA	420 U	450 U	
Naphthalene	NE	NE	585	187,691			420 U	460 U	NA	420 U	450 U	
Phenanthrene	NE	NE	59600	29,126,201 [2]			420 U	460 U	NA	420 U	450 U	
Pyrene	NE	NE	286000	29,126,201			420 U	460 U	NA	420 U	450 U	
Metals (mg/kg)												
Arsenic	13.56	1.62	5.24	1.59			5.3 U	**20.8**	NA	**9.9**	4.7 U	
Barium	46.53	21.98	848	66,577			12.1 J	18.7 J	NA	17.6 J	19.5 J	
Cadmium	NE	NE	2.72	451			0.14 U	0.06 U	NA	0.06 U	0.15 U	
Chromium	37.71	16.28	27.2	448			**19.1**	**31.1**	NA	**22.9**	**24**	
Lead	15.24	8.16	270	800			**10**	**12.2**	NA	**11.2**	**10.7**	
Mercury	0.07	0.0797	0.015	307			0.11 U	0.04 U	NA	0.07 U	0.04 U	
Selenium	0.861	0.69	12.2	5,110			1.8 U	1 U	NA	0.77 U	1.5 U	

Notes:

Shaded values exceed AOC 2 background concentrations for subsurface soil.
Bolded values exceed Base background concentrations for sand subsurface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[3] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-8
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID Sample Date Sample Depth (ft bgs)	AOC 2 Subsurface Soil Background	**Base Background Sand**	NC Soil to Groundwater Standards	USEPA Region IX Industrial Soil PRGs	SWMU318-SB19-05 2/4/2005 9-11	SWMU318-SB20-02 2/3/2005 3-5	SWMU318-SB20-04 2/3/2005 7-9	SWMU318-SB20-14 2/20/2005 27-29	SWMU318-SB21-02 2/3/2005 3-5	SWMU318-SB21-04 2/3/2005 7-9	SWMU318-SB22-03 2/7/2005 5-7	SWMU318-SB22-04 2/7/2005 7-9
Volatile Organic Compounds (ug/kg)												
1,2-Dichloroethene (cis)	NE	NE	1.84	146,301	NA	NA	NA		12 U	NA	NA	NA
1,2-Dichloroethene (total)	NE	NE	350	146,301 [1]	NA	NA	NA		12 U	NA	NA	NA
1,2-Dichloroethene (trans)	NE	NE	380	234,823	NA	NA	NA		12 U	NA	NA	NA
Acetone	NE	NE	2810	54,320,986	NA	NA	NA		11 J	NA	NA	NA
Methyl Acetate	NE	NE	NE	91,530,825	NA	NA	NA		12 U	NA	NA	NA
Toluene	NE	NE	7270	520,000	NA	NA	NA		12 U	NA	NA	NA
Semi Volatile Organic Compounds (ug/kg)												
3,3'-Dichlorobenzidine	NE	NE	NE	3,830	420 U	420 U	400 U		NA	420 U	420 U	400 U
Acenaphthene	NE	NE	8160	29,219,327	420 U	420 U	400 U		NA	420 U	420 U	400 U
Anthracene	NE	NE	995000	100,000,000	420 U	420 U	400 U		NA	420 U	420 U	400 U
Benzaldehyde	NE	NE	NE	61,560,629	420 U	420 U	400 U		NA	420 U	420 U	400 U
Benzo(a)anthracene	NE	NE	343	2,110	420 U	420 U	400 U		NA	420 U	420 U	400 U
Benzo(a)pyrene	NE	NE	92.8	211	420 U	420 U	400 U		NA	420 U	420 U	400 U
Benzo(b)fluoranthene	NE	NE	1180	2,110	420 U	420 U	400 U		NA	420 U	420 U	400 U
Benzo(g,h,i)perylene	NE	NE	6720000	29,126,201 [2]	420 U	420 U	400 U		NA	420 U	420 U	400 U
Benzo(k)fluoranthene	NE	NE	11800	21,096	420 U	420 U	400 U		NA	420 U	420 U	400 U
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6670	123,121	420 U	420 U	300 J		NA	420 U	420 U	400 U
Carbazole	NE	NE	NE	86,185	420 U	420 U	400 U		NA	420 U	420 U	400 U
Chrysene	NE	NE	38150	210,962	420 U	420 U	400 U		NA	420 U	420 U	400 U
Dibenz(a,h)anthracene	NE	NE	172	211	420 U	420 U	400 U		NA	420 U	420 U	400 U
Dibenzofuran	NE	NE	4660	1,563,342	420 U	420 U	400 U		NA	420 U	420 U	400 U
Di-n-butyl Phthalate (DBP)	NE	NE	24800	61,560,629	420 U	420 U	400 U		NA	420 U	420 U	400 U
Fluoranthene	NE	NE	276000	22,000,353	420 U	420 U	400 U		NA	420 U	420 U	400 U
Fluorene	NE	NE	44300	26,281,433	420 U	420 U	400 U		NA	420 U	420 U	400 U
Indeno(1,2,3-cd)pyrene	NE	NE	3320	2,110	420 U	420 U	400 U		NA	420 U	420 U	400 U
Naphthalene	NE	NE	585	187,691	420 U	420 U	400 U		NA	420 U	420 U	400 U
Phenanthrene	NE	NE	59600	29,126,201 [2]	420 U	420 U	400 U		NA	420 U	420 U	400 U
Pyrene	NE	NE	286000	29,126,201	420 U	420 U	400 U		NA	420 U	420 U	400 U
Metals (mg/kg)												
Arsenic	13.56	1.62	5.24	1.59	8 U	2.6 U	2.6 U		2.5 U	NA	2 U	1.8 U
Barium	46.53	21.98	848	66,577	14.6 J	**26.4 J**	**26.9 J**		**26 J**	NA	**25.5 J**	**23.2 J**
Cadmium	NE	NE	2.72	451	0.06 U	0.07 U	0.09 U		0.2 U	NA	0.06 U	0.05 U
Chromium	37.71	16.28	27.2	448	9.3	**18.1**	12.8		12.9	NA	12	12.8
Lead	15.24	8.16	270	800	5	**16.5**	**14.7**		**13.2**	NA	**11.4**	**8.2**
Mercury	0.07	0.0797	0.015	307	0.03 U	0.16 U	0.08 U		0.08 U	NA	0.06 U	0.01 U
Selenium	0.861	0.69	12.2	5,110	0.94 U	0.82 U	1.5 U		0.78 U	NA	1.8 U	0.61 U

SAMPLE ANALYZED FOR TOD ONLY.

Notes:

Shaded values exceed AOC 2 background concentrations for subsurface soil.
Bolded values exceed Base background concentrations for sand subsurface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[3] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-8
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID Sample Date Sample Depth (ft bgs)	AOC 2 Subsurface Soil Background	**Base Background Sand**	NC Soil to Groundwater Standards	USEPA Region IX Industrial Soil PRGs	SWMU318-SB23-02 2/3/2005 3-5	SWMU318-SB23-04 2/3/2005 7-9	SWMU318-SB24-03 2/7/2005 5-7	SWMU318-SB24-05 2/7/2005 9-11	SWMU318-SB25-02 2/8/2005 3-5	SWMU318-SB25-02D 2/8/2005 3-5	SWMU318-SB25-04 2/8/2005 7-9	SWMU318-SB25-04D 2/8/2005 7-9
Volatile Organic Compounds (ug/kg)												
1,2-Dichloroethene (cis)	NE	NE	1.84	146,301	11 U	NA	NA		NA	NA	NA	NA
1,2-Dichloroethene (total)	NE	NE	350	146,301 [1]	11 U	NA	NA		NA	NA	NA	NA
1,2-Dichloroethene (trans)	NE	NE	380	234,823	11 U	NA	NA		NA	NA	NA	NA
Acetone	NE	NE	2810	54,320,986	8 J	NA	NA		NA	NA	NA	NA
Methyl Acetate	NE	NE	NE	91,530,825	11 U	NA	NA		NA	NA	NA	NA
Toluene	NE	NE	7270	520,000	11 U	NA	NA		NA	NA	NA	NA
Semi Volatile Organic Compounds (ug/kg)												
3,3'-Dichlorobenzidine	NE	NE	NE	3,830	400 U	NA	420 U		380 U	360 U	500 U	490 U
Acenaphthene	NE	NE	8160	29,219,327	400 U	NA	420 U		380 U	360 U	500 U	490 U
Anthracene	NE	NE	995000	100,000,000	400 U	NA	420 U		380 U	360 U	500 U	490 U
Benzaldehyde	NE	NE	NE	61,560,629	400 U	NA	420 U		380 U	360 U	500 U	490 U
Benzo(a)anthracene	NE	NE	343	2,110	400 U	NA	420 U		380 U	360 U	500 U	490 U
Benzo(a)pyrene	NE	NE	92.8	211	400 U	NA	420 U		380 U	360 U	500 U	490 U
Benzo(b)fluoranthene	NE	NE	1180	2,110	400 U	NA	420 U		380 U	360 U	500 U	490 U
Benzo(g,h,i)perylene	NE	NE	6720000	29,126,201 [2]	400 U	NA	420 U		380 U	360 U	500 U	490 U
Benzo(k)fluoranthene	NE	NE	11800	21,096	400 U	NA	420 U		380 U	360 U	500 U	490 U
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6670	123,121	400 U	NA	420 U		380 U	360 U	500 U	490 U
Carbazole	NE	NE	NE	86,185	400 U	NA	420 U		380 U	360 U	500 U	490 U
Chrysene	NE	NE	38150	210,962	400 U	NA	420 U		380 U	360 U	500 U	490 U
Dibenz(a,h)anthracene	NE	NE	172	211	400 U	NA	420 U		380 U	360 U	500 U	490 U
Dibenzofuran	NE	NE	4660	1,563,342	400 U	NA	420 U		380 U	360 U	500 U	490 U
Di-n-butyl Phthalate (DBP)	NE	NE	24800	61,560,629	400 U	NA	1,200		380 U	360 U	500 U	490 U
Fluoranthene	NE	NE	276000	22,000,353	400 U	NA	420 U		380 U	360 U	500 U	490 U
Fluorene	NE	NE	44300	26,281,433	400 U	NA	420 U		380 U	360 U	500 U	490 U
Indeno(1,2,3-cd)pyrene	NE	NE	3320	2,110	400 U	NA	420 U		380 U	360 U	500 U	490 U
Naphthalene	NE	NE	585	187,691	400 U	NA	420 U		380 U	360 U	500 U	490 U
Phenanthrene	NE	NE	59600	29,126,201 [2]	400 U	NA	420 U		380 U	360 U	500 U	490 U
Pyrene	NE	NE	286000	29,126,201	400 U	NA	420 U		380 U	360 U	500 U	490 U
Metals (mg/kg)												
Arsenic	13.56	1.62	5.24	1.59	2.2 U	2.3 U	4 U		1.2 U	0.59 U	6 U	2.5 U
Barium	46.53	21.98	848	66,577	21.4 J	21.8 J	**28.6 J**		9.2 J	7.9 J	**29.8 J**	**30.1 J**
Cadmium	NE	NE	2.72	451	0.27 U	0.06 U	0.06 U		0.06 U	0.21 U	0.07 U	0.09 U
Chromium	37.71	16.28	27.2	448	8.6	14.5	**20.1**		2.5 U	7.8	**34.5**	**36.3**
Lead	15.24	8.16	270	800	10.1	**15.2**	**14.4**		3 U	2.3 U	**16.8**	**17.1**
Mercury	0.07	0.0797	0.015	307	0.07 U	0.11 U	0.1 U		0.04 U	0.03 U	0.13 U	0.11 U
Selenium	0.861	0.69	12.2	5,110	0.64 U	0.72 U	1.2 U		0.76 U	1.8 U	1.3 U	0.99 U

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Shaded values exceed AOC 2 background concentrations for subsurface soil.
Bolded values exceed Base background concentrations for sand subsurface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[3] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-8
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID Sample Date Sample Depth (ft bgs)	AOC 2 Subsurface Soil Background	**Base Background Sand**	NC Soil to Groundwater Standards	USEPA Region IX Industrial Soil PRGs	SWMU318-SB26-01 2/4/2005 1-3	SWMU318-SB26-02 2/4/2005 3-5	SWMU318-SB27-02 2/7/2005 3-5	SWMU318-SB27-02D 2/7/2005 3-5	SWMU318-SB27-03 2/7/2005 5-7	SWMU318-SB27-03D 2/7/2005 5-7	SWMU318-SB28-02 2/8/2005 3-5	SWMU318-SB28-02D 2/8/2005 3-5
Volatile Organic Compounds (ug/kg)												
1,2-Dichloroethene (cis)	NE	NE	1.84	146,301	NA	18	NA	NA	NA		NA	NA
1,2-Dichloroethene (total)	NE	NE	350	146,301 [1]	NA	21	NA	NA	NA		NA	NA
1,2-Dichloroethene (trans)	NE	NE	380	234,823	NA	3 J	NA	NA	NA		NA	NA
Acetone	NE	NE	2810	54,320,986	NA	10 J	NA	NA	NA		NA	NA
Methyl Acetate	NE	NE	NE	91,530,825	NA	12 U	NA	NA	NA		NA	NA
Toluene	NE	NE	7270	520,000	NA	12 U	NA	NA	NA		NA	NA
Semi Volatile Organic Compounds (ug/kg)												
3,3'-Dichlorobenzidine	NE	NE	NE	3,830	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Acenaphthene	NE	NE	8160	29,219,327	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Anthracene	NE	NE	995000	100,000,000	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Benzaldehyde	NE	NE	NE	61,560,629	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Benzo(a)anthracene	NE	NE	343	2,110	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Benzo(a)pyrene	NE	NE	92.8	211	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Benzo(b)fluoranthene	NE	NE	1180	2,110	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Benzo(g,h,i)perylene	NE	NE	6720000	29,126,201 [2]	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Benzo(k)fluoranthene	NE	NE	11800	21,096	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6670	123,121	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Carbazole	NE	NE	NE	86,185	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Chrysene	NE	NE	38150	210,962	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Dibenz(a,h)anthracene	NE	NE	172	211	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Dibenzofuran	NE	NE	4660	1,563,342	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Di-n-butyl Phthalate (DBP)	NE	NE	24800	61,560,629	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Fluoranthene	NE	NE	276000	22,000,353	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Fluorene	NE	NE	44300	26,281,433	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Indeno(1,2,3-cd)pyrene	NE	NE	3320	2,110	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Naphthalene	NE	NE	585	187,691	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Phenanthrene	NE	NE	59600	29,126,201 [2]	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Pyrene	NE	NE	286000	29,126,201	410 U	430 U	420 U	420 U	470 U		400 U	410 U
Metals (mg/kg)												
Arsenic	13.56	1.62	5.24	1.59	2.6 U	5 U	7.2 U	2 U	17 U		1.4 U	1.6 U
Barium	46.53	21.98	848	66,577	15.1 J	**25.2 J**	**22.5 J**	20 J	**27.4 J**		14.1 J	15.2 J
Cadmium	NE	NE	2.72	451	0.12 U	0.05 U	0.06 U	0.06 U	0.06 U		0.05 U	0.08 U
Chromium	37.71	16.28	27.2	448	7.7	**25.8**	**21**	**21.2**	**36.5**		5.2	6
Lead	15.24	8.16	270	800	5.2	**14.4**	**13.4**	**12.4**	**14.9**		6.9	6.5
Mercury	0.07	0.0797	0.015	307	0.07 U	0.11 U	0.09 U	0.08 U	0.06 U		0.06 U	0.05 U
Selenium	0.861	0.69	12.2	5,110	0.8 U	1 U	1.4 U	0.76 U	1.1 U		0.59 U	0.9 U

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Shaded values exceed AOC 2 background concentrations for subsurface soil.
Bolded values exceed Base background concentrations for sand subsurface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[3] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-8
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SUBSURFACE SOIL ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID Sample Date Sample Depth (ft bgs)	AOC 2 Subsurface Soil Background	**Base Background Sand**	NC Soil to Groundwater Standards	USEPA Region IX Industrial Soil PRGs	SWMU318-SB28-04 2/8/2005 7-9	SWMU318-SB28-04D 2/8/2005 7-9	SWMU318-SB35-01 2/5/2005 1-3	SWMU318-SB35-01D 2/5/2005 1-3	SWMU318-SB35-02 2/5/2005 3-5	SWMU318-SB35-03 2/5/2005 5-7	SWMU318-MW07-11 2/16/2005 21-23	SWMU318-MW05DW-15 2/18/2005 29-31
Volatile Organic Compounds (ug/kg)												
1,2-Dichloroethene (cis)	NE	NE	1.84	146,301	NA	NA						
1,2-Dichloroethene (total)	NE	NE	350	146,301 [1]	NA	NA						
1,2-Dichloroethene (trans)	NE	NE	380	234,823	NA	NA						
Acetone	NE	NE	2810	54,320,986	NA	NA						
Methyl Acetate	NE	NE	NE	91,530,825	NA	NA						
Toluene	NE	NE	7270	520,000	NA	NA						
Semi Volatile Organic Compounds (ug/kg)							SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE ANALYZED FOR TOD ONLY.	SAMPLE ANALYZED FOR TOD ONLY.
3,3'-Dichlorobenzidine	NE	NE	NE	3,830	420 U	450 U						
Acenaphthene	NE	NE	8160	29,219,327	420 U	450 U						
Anthracene	NE	NE	995000	100,000,000	420 U	450 U						
Benzaldehyde	NE	NE	NE	61,560,629	420 U	450 U						
Benzo(a)anthracene	NE	NE	343	2,110	420 U	450 U						
Benzo(a)pyrene	NE	NE	92.8	211	420 U	450 U						
Benzo(b)fluoranthene	NE	NE	1180	2,110	420 U	450 U						
Benzo(g,h,i)perylene	NE	NE	6720000	29,126,201 [2]	420 U	450 U						
Benzo(k)fluoranthene	NE	NE	11800	21,096	420 U	450 U						
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	NE	6670	123,121	420 U	450 U						
Carbazole	NE	NE	NE	86,185	420 U	450 U						
Chrysene	NE	NE	38150	210,962	420 U	450 U						
Dibenz(a,h)anthracene	NE	NE	172	211	420 U	450 U						
Dibenzofuran	NE	NE	4660	1,563,342	420 U	450 U						
Di-n-butyl Phthalate (DBP)	NE	NE	24800	61,560,629	1,100	450 U						
Fluoranthene	NE	NE	276000	22,000,353	420 U	450 U						
Fluorene	NE	NE	44300	26,281,433	420 U	450 U						
Indeno(1,2,3-cd)pyrene	NE	NE	3320	2,110	420 U	450 U						
Naphthalene	NE	NE	585	187,691	420 U	450 U						
Phenanthrene	NE	NE	59600	29,126,201 [2]	420 U	450 U						
Pyrene	NE	NE	286000	29,126,201	420 U	450 U						
Metals (mg/kg)												
Arsenic	13.56	1.62	5.24	1.59	**12.2**	3.6 U						
Barium	46.53	21.98	848	66,577	17.9 J	**26.2 J**						
Cadmium	NE	NE	2.72	451	0.43 U	0.07 U						
Chromium	37.71	16.28	27.2	448	**22**	**22.6**						
Lead	15.24	8.16	270	800	**11.8**	**14.5**						
Mercury	0.07	0.0797	0.015	307	0.08 U	0.08 U						
Selenium	0.861	0.69	12.2	5,110	2.1 U	0.73 U						

Notes:

Shaded values exceed AOC 2 background concentrations for subsurface soil.

Bolded values exceed Base background concentrations for sand subsurface soil.
Underlined values exceed North Carolina Soil to Groundwater criteria.
Boxed values exceed USEPA Region IX Industrial Soil PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[3] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.

[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-9
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SHALLOW GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW01	SWMU318-GW02	SWMU318-GW02D	SWMU318-GW03	SWMU318-GW04	SWMU318-GW05	SWMU318-GW06	SWMU318-GW07	SWMU318-GW08
Sample Date	2L Standards	Tap Water PRGs	3/19/2004	3/17/2004	3/17/2004	3/18/2004	3/18/2004	3/17/2004	3/17/2004	3/18/2004	3/17/2004
Sample Depth (ft bgs)			12-16	10-14	10-14	12-16	12-16	10-14	15-19	10-14	12-16
Volatile Organic Compounds (ug/L)											
1,1,1-Trichloroethane (TCA)	200	3,172	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethane	700	811	2 U	2 U	2 U	2 U	0.5 J	0.5 J	2 U	2 U	2 U
1,1-Dichloroethene	7.00	339	2 U	2 U	2 U	2 U	2 U	2 U	4	2 U	2 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	2 U	2 U	0.9 J	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	NE	7.16	2 U	2 U	3	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	350	12.3	2 J	2 U	2 U	2 U	1 J	1 J	1 J	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	0.5 J	0.4 J	0.4 J	2 J	0.4 J	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	3	1 J	1 J	0.6 J	0.4 J	2 U	54 D	0.4 J	2 U
1,2-Dichloroethene (trans)	70.0	122	2 U	2 U	2 U	2 U	2 U	2 U	1 J	2 U	2 U
1,3,5-Trimethylbenzene	350	12.3	2 U	2 U	0.6 J	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	620	183	2 U	2 U	0.5 J	0.7 J	0.7 J	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75	0.502	2 U	2	2	0.9 J	0.9 J	0.9 J	2 U	2 U	2 U
4-Chlorotoluene	140 [2]	122 [2]	2 U	2 U	0.9 J	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]	2 U	2 U	0.8 J	2 U	2 U	0.8 J	2 U	0.7 J	2 U
Benzene	1.00	0.354	2 U	2 U	2 U	2 U	0.9 J	2 U	0.2 J	2 U	2 U
Butylbenzene, sec-	70.0	243	5	2 U	2 J	2 U	2 U	1 J	2 U	2 U	2 J
Butylbenzene, tert-	70.0	243	2 U	2 U	2 U	2 U	2 U	1 J	2 U	2 U	2 U
Chlorobenzene	50.0	106	2 U	2 U	2 U	2 U	2	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	1,400	395	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	29.0	1,340	2 J	0.7 J	0.6 J	0.6 J	0.6 J	0.6 J	0.7 J	2 U	0.6 J
Hexachlorobutadiene	NE	0.862	2 U	2 U	0.5 J	2 U	2 U	2 U	2 U	2 U	2 U
Isopropylbenzene (Cumene)	70.0	658	4	1 J	1 J	2 U	1 J	1 J	2 U	1 J	2 U
Naphthalene	21.0	6.20	5	2 J	22	2 U	18	2 U	2 U	2 U	2 U
n-Butylbenzene	70.0	243	32	2 U	2 U	0.5 J	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	70.0	243	4	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	2 U	2 U	0.8 J	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	1,000	723	0.8 J	0.8 J	0.8 J	0.7 J	0.9 J	1 J	0.8 J	2 U	0.7 J
Trichloroethene (TCE)	2.80	0.028	0.9 J	2	2 J	1 J	0.7 J	1 J	27	1 J	2 U
Vinyl Chloride	0.0150	0.0198	2 U	2 U	2 U	2 U	2 U	2 U	16	2 U	2 U
Xylene, m/p-	530 [4]	206 [4]	2 J	4 U	2 J	4 U	2 J	4 U	4 U	2 J	4 U
Xylene, o-	530 [4]	206 [4]	2 U	2 U	1 J	2 U	1 J	2 U	1 J	1 J	2 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-9
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SHALLOW GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW09	SWMU318-GW10	SWMU318-GW11	SWMU318-GW12	SWMU318-GW13	SWMU318-GW14	SWMU318-GW15	SWMU-GW16	SWMU318-GW17
Sample Date	2L Standards	Tap Water PRGs	3/19/2004	3/20/2004	3/20/2004	3/20/2004	3/20/2004	3/22/2004	3/22/2004	6/21/04	6/23/2004
Sample Depth (ft bgs)			12-16	15-19	12-16	12-16	12-16	12-16	12-16	10-14	10-14
Volatile Organic Compounds (ug/L)											
1,1,1-Trichloroethane (TCA)	200	3,172	0.7 J	2 U	2 U	2 U	2 U	10 U	20 U	2 U	2 U
1,1-Dichloroethane	700	811	4	2 U	2 U	0.5 J	0.7 J	10 U	20 U	2 U	2 U
1,1-Dichloroethene	7.00	339	3	2 U	2 U	2 U	2 U	10 U	20 U	2 U	2 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	2 U	2 U	2 U	2 U	2 U	10 U	20 U	2 U	2 U
1,2,4-Trichlorobenzene	NE	7.16	2 U	2 U	2 U	2 U	2 U	10 U	20 U	2 U	2 U
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	17	20	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U	2 U	10 U	20 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	15	3	0.6 J	3	18	86	20 U	4.7	2 U
1,2-Dichloroethene (trans)	70.0	122	2 U	2 U	2 U	2 U	1 J	10 U	20 U	2 U	2 U
1,3,5-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	10 U	16 J	2 U	2 U
1,3-Dichlorobenzene (m-)	620	183	2 U	2 U	2 U	2	2 U	10 U	20 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75	0.502	2 U	2 U	2 U	1 J	2 U	10 U	20 U	2 U	2 U
4-Chlorotoluene	140 [2]	122 [2]	2 U	2 U	2 U	2 U	2 U	10 U	20 U	2 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]	2 U	2 U	2 U	2 U	2 U	6.4 J	20 U	2 U	2 U
Benzene	1.00	0.354	2 U	2 U	2 U	2 U	2 U	14	39	2 U	2 U
Butylbenzene, sec-	70.0	243	0.9 J	2 U	2 U	2 U	2 U	10 U	14 J	2 U	2 U
Butylbenzene, tert-	70.0	243	2 U	2 U	2 U	2 U	2 U	10 U	20 U	2 U	2 U
Chlorobenzene	50.0	106	2 U	2 U	2 U	2 U	2 U	10 U	20 U	2 U	2 U
Dichlorodifluoromethane	1,400	395	2 U	2 U	2 U	1 J	2 U	10 U	20 U	2 U	2 U
Ethylbenzene	29.0	1,340	2 U	2 U	2 U	2 U	2 U	8.1 J	35	2 U	2 U
Hexachlorobutadiene	NE	0.862	2 U	2 U	2 U	2 U	2 U	10 U	20 U	2 U	2 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U	2 U	2 U	10 U	20 U	2 U	2 U
Naphthalene	21.0	6.20	4	2 U	2 U	2 U	2 U	328	736	2 U	2 U
n-Butylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	49	20 U	2 U	2 U
n-Propylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	10 U	20 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	2 U	2 U	2 U	2 U	2 U	10 U	20 U	2 U	2 U
Toluene	1,000	723	0.7 J	0.3 J	0.4 J	0.5 J	0.4 J	4 J	13 J	2 U	2 U
Trichloroethene (TCE)	2.80	0.028	6	3	0.8 J	0.6 J	76 E	60	20 U	2 U	2 U
Vinyl Chloride	0.0150	0.0198	1 J	2 U	2 U	0.9 J	2 U	10 U	20 U	2 U	2 U
Xylene, m/p-	530 [4]	206 [4]	4 U	0.5 J	0.5 J	0.7 J	0.7 J	4 J	34	4 U	4 U
Xylene, o-	530 [4]	206 [4]	2 U	2 U	0.8 J	0.8 J	2 U	10 U	9 J	2 U	2 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
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U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-9
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SHALLOW GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW18	SWMU318-GW19	SWMU318-GW20	SWMU318-GW21	SWMU318-GW21D	SWMU318-GW22	SWMU318-GW23	SWMU318-GW24	SWMU318-GW25
Sample Date	2L Standards	Tap Water PRGs	6/21/04	6/21/2004	6/21/04	6/22/04	6/22/04	6/22/04	6/23/04	6/22/04	6/23/04
Sample Depth (ft bgs)			10-14	10-14	10-14	10-14	10-14	10-14	10-14	10-14	10-14
Volatile Organic Compounds (ug/L)											
1,1,1-Trichloroethane (TCA)	200	3,172	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethane	700	811	3.2	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	7.00	339	14.6	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	NE	7.16	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	2 U	2.6	2 U	3.1	3.5	2 U	2 U	2 U	31.6
1,2-Dichloroethene (trans)	70.0	122	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3,5-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	620	183	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75	0.502	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	140 [2]	122 [2]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, sec-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, tert-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	50.0	106	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	1,400	395	2 U	2.3	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	29.0	1,340	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Hexachlorobutadiene	NE	0.862	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	21.0	6.20	6.4	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Butylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	1,000	723	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene (TCE)	2.80	0.028	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Vinyl Chloride	0.0150	0.0198	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Xylene, m/p-	530 [4]	206 [4]	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Xylene, o-	530 [4]	206 [4]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-9
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SHALLOW GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW26	SWMU318-GW27	SWMV318-GW28	SWMU318-GW29	SWMU318-GW30	SWMU318-GW31	SWMU318-GW32	SWMU318-GW33	SWMU318-GW34
Sample Date	2L Standards	Tap Water PRGs	6/23/2004	6/23/04	6/24/04	6/22/04	6/24/2005	2/3/2005	2/3/2005	2/4/2005	2/2/2005
Sample Depth (ft bgs)			10-14	10-14	10-14	10-14	10-14	12-16	12-16	12-16	12-16
Volatile Organic Compounds (ug/L)											
1,1,1-Trichloroethane (TCA)	200	3,172		2 U	2 U	2 U		1 U	1 U	1 U	1 U
1,1-Dichloroethane	700	811		2 U	2 U	2 U		1 U	4.5	1 U	1 U
1,1-Dichloroethene	7.00	339		2 U	2 U	2 U		1 U	2.6	1 U	1 U
1,2,3-Trichlorobenzene	NE	7.16 [1]		2 U	2 U	2 U		5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	NE	7.16		2 U	2 U	2 U		5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	350	12.3		2 U	2 U	2 U		2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370		2 U	2 U	2 U		2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8		2 U	3.8	2		1 U	10	1 U	1 U
1,2-Dichloroethene (trans)	70.0	122		2 U	2 U	2 U		1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	350	12.3		2 U	2 U	2 U		2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	620	183		2 U	2 U	2 U		2 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75	0.502		2 U	2 U	2 U		2 U	2 U	2 U	2 U
4-Chlorotoluene	140 [2]	122 [2]		2 U	2 U	2 U		2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]		2 U	2 U	2 U		2 U	2 U	2 U	2 U
Benzene	1.00	0.354		2 U	2 U	2 U		1 U	7.2	1 U	1 U
Butylbenzene, sec-	70.0	243		2 U	2 U	2 U		2 U	2 U	2 U	2 U
Butylbenzene, tert-	70.0	243		2 U	2 U	2 U		2 U	2 U	2 U	2 U
Chlorobenzene	50.0	106		2 U	2 U	2 U		1 U	1 U	1 U	1 U
Dichlorodifluoromethane	1,400	395		2 U	2 U	2 U		5 U	5 U	5 U	5 U
Ethylbenzene	29.0	1,340		2 U	2 U	2 U		1 U	1 U	1 U	1 U
Hexachlorobutadiene	NE	0.862		2 U	2 U	2 U		5 U	5 U	5 U	5 U
Isopropylbenzene (Cumene)	70.0	658		2 U	2 U	2 U		2 U	2 U	2 U	2 U
Naphthalene	21.0	6.20		2 U	4.4	2 U		5 U	4.3 J	5 U	5 U
n-Butylbenzene	70.0	243		2 U	2 U	2 U		2 U	2 U	2 U	2 U
n-Propylbenzene	70.0	243		2 U	2 U	2 U		2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641		2 U	2 U	2 U		1 U	1 U	1 U	1 U
Toluene	1,000	723		2 U	2 U	2 U		1 U	1 U	1 U	1 U
Trichloroethene (TCE)	2.80	0.028		2 U	2 U	2 U		1 U	20	1 U	1 U
Vinyl Chloride	0.0150	0.0198		2 U	2 U	2 U		2 U	0.57 J	2 U	2 U
Xylene, m/p-	530 [4]	206 [4]		4 U	4 U	4 U		2 U	2 U	2 U	2 U
Xylene, o-	530 [4]	206 [4]		2 U	2 U	2 U		1 U	1 U	1 U	1 U

SAMPLE NOT COLLECTED.

SAMPLE NOT COLLECTED.

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-9
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SHALLOW GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW35	SWMU318-GW36	SWMU318-GW37	SWMU318-GW38	SWMU318-GW39	SWMU318-GW40	SWMU318-GW41	SWMU318-GW42	SWMU318-GW43
Sample Date	2L Standards	Tap Water PRGs	2/5/2005	2/3/2005	2/3/2005	2/2/2005	2/2/2005	2/2/2005	2/1/2005	2/3/2005	2/2/2005
Sample Depth (ft bgs)			12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16
Volatile Organic Compounds (ug/L)											
1,1,1-Trichloroethane (TCA)	200	3,172	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	700	811	10 U	0.43 J	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7.00	339	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	5.5 J	0.48 J	2.4 J	5 U	0.68 J	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	NE	7.16	4.7 J	5 U	25 U	5 U	0.59 J	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	350	12.3	16 J	2 U	8.6 J	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (trans)	70.0	122	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	350	12.3	6.1 J	2 U	3.4 J	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	620	183	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75	0.502	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	140 [2]	122 [2]	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]	9.4 J	2 U	1.6 J	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	14	1 U	6.7	1 U	1 U	1 U	1 U	1 U	1 U
Butylbenzene, sec-	70.0	243	1.2 J	2 U	0.58 J	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, tert-	70.0	243	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	50.0	106	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	1,400	395	50 U	5.5	25 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	29.0	1,340	14	1 U	6.7	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	NE	0.862	50 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene (Cumene)	70.0	658	1.3 J	2 U	0.89 J	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	21.0	6.20	1500	1 J	630	5 U	0.72 J	5 U	5 U	5 U	5 U
n-Butylbenzene	70.0	243	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	70.0	243	20 U	2 U	0.85 J	2 U	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1,000	723	26	1 U	5.5	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene (TCE)	2.80	0.028	10 U	0.79 J	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	0.0150	0.0198	2.3 J	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U
Xylene, m/p-	530 [4]	206 [4]	22	0.33 J	15	2 U	2 U	2 U	2 U	2 U	2 U
Xylene, o-	530 [4]	206 [4]	16	1 U	7.3	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

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J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-9
MOBILE LABORATORY DETECTIONS SUMMARY
RFI SHALLOW GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW44	SWMU318-GW45	SWMU318-GW46	SWMU318-GW47	SWMU318-GW48	SWMU318-GW49	SWMU318-GW50	SWMU318-GW51
Sample Date	2L Standards	Tap Water PRGs	2/3/2005	2/3/2005	2/6/2005	2/6/2005	2/5/2005	2/6/2005	2/6/2005	2/7/2005
Sample Depth (ft bgs)			12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16
Volatile Organic Compounds (ug/L)										
1,1,1-Trichloroethane (TCA)	200	3,172	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	700	811	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.33 J
1,1-Dichloroethene	7.00	339	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	5 U	5 U	5 U	0.95 J	5 U	5 U	5 U	0.52 J
1,2,4-Trichlorobenzene	NE	7.16	5 U	5 U	5 U	0.86 J	5 U	5 U	5 U	0.45 J
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	2 U	0.28 J	0.42 J
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	1 U	1 U	1 U	1.4	1 U	1 U	1 U	1.7
1,2-Dichloroethene (trans)	70.0	122	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.35 J
1,3-Dichlorobenzene (m-)	620	183	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75	0.502	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	140 [2]	122 [2]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Butylbenzene, sec-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, tert-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	50.0	106	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	1,400	395	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	29.0	1,340	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	NE	0.862	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U	2 U	2 U	2 U	0.46 J	2 U
Naphthalene	21.0	6.20	5 U	1.3 J	0.63 J	1.8 J	2 J	5 U	1 J	0.84 J
n-Butylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.35 J
n-Propylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1,000	723	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene (TCE)	2.80	0.028	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.4
Vinyl Chloride	0.0150	0.0198	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Xylene, m/p-	530 [4]	206 [4]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Xylene, o-	530 [4]	206 [4]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-10
MOBILE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW01-01	SWMU318-GW02-01	SWMU318-GW03-01	SWMU318-GW04-01	SWMU318-GW05-01	SWMU318-GW05-01D	SWMU318-GW06-01	SWMU318-GW06-02
Sample Date	2L Standards	Tap Water PRGs	3/19/2004	3/17/2004	3/18/2004	3/18/2004	3/17/2004	3/17/2004	3/17/2004	3/17/2004
Sample Depth (ft bgs)			24-28	24-28	24-28	24-28	24-28	24-28	20-24	26-30
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	20 U	1 J	0.9 J	0.7 J	2 U	2 U	12 J	2 U
1,1-Dichloroethene	7.00	339	20 U	2 U	7	2 U	2 U	2 U	20 U	2 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
1,2,4-Trichlorobenzene	NE	7.16	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
1,2,4-Trimethylbenzene	350	12.3	10 J	1 J	2 U	1 J	1 J	1 J	13 J	2 U
1,2-Dichlorobenzene (o-)	620	370	20 U	2 U	2 U	2 U	0.4 J	0.4 J	4 J	0.4 J
1,2-Dichloroethene (cis)	70.0	60.8	16 J	23	800 D	2	2 U	2 U	99	0.2 J
1,2-Dichloroethene (trans)	70.0	122	20 U	2 U	4	2 U	2 U	2 U	20 U	2 U
1,2-Dichloropropane	0.560	0.165	20 U	0.3 J	2 U	2 U	2 U	2 U	20 U	2 U
1,3,5-Trimethylbenzene	350	12.3	12 J	2 U	2 U	0.6 J	0.6 J	2 U	30	2 U
1,3-Dichlorobenzene (m-)	620	183	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
1,4-Dichlorobenzene (p-)	75.0	0.502	20 U	0.8 J	0.8 J	2 U	0.8 J	2 U	20 U	2 U
2-Chlorotoluene	140	122	20 U	2 U	2 U	2 U	0.8 J	2 U	13 J	2 U
4-Chlorotoluene	140 [2]	122 [2]	20 U	2 U	2 U	2 U	2 U	0.9 J	20 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]	16 J	0.8 J	2 U	2 U	2 U	2 U	150	2 U
Benzene	1.00	0.354	73	24	4	4	2 U	2 U	98	0.3 J
Bromodichloromethane	0.560	0.181	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
Bromoform	0.190	8.51	20 U	2 U	2 U	2 U	2 U	2 U	6 J	2 U
Butylbenzene, sec-	70.0	243	20 U	2 U	2 U	0.9 J	1 J	0.9 J	9 J	2 U
Butylbenzene, tert-	70.0	243	16 J	2 U	2 U	2 U	1 J	2 U	20 U	2 U
Chloroform	0.190	0.166	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
Dichlorodifluoromethane	1,400	395	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
Ethylbenzene	29.0	1,340	47	2	2 J	0.8 J	0.6 J	0.6 J	91	1 J
Isopropylbenzene (Cumene)	70.0	658	36	1 J	2 U	1 J	1 J	1 J	76	1 J
Naphthalene	21.0	6.20	1970 D	2 J	2 U	43 D	2 U	2 U	1878 D	2 U
n-Butylbenzene	70.0	243	8 J	2 U	2 U	2 U	2 U	2 U	20 U	2 U
n-Propylbenzene	70.0	243	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
Styrene (Ethenylbenzene)	100	1,641	20 U	2 U	2 U	2 U	2 U	2 U	11 J	2 U
Tetrachloroethene (PCE)	0.700	0.10424	7 J	2 U	2 U	2 U	2 U	2 U	20 U	2 U
Toluene	1,000	723	51	2 J	2 J	0.9 J	1 J	1 J	190	1 J
Trichloroethene (TCE)	2.80	0.0280	34	29	1690 D	2	0.8 J	2 U	62	2 U
Vinyl Chloride	0.0150	0.0198	20 U	2 U	5	2 U	2 U	2 U	30	2 U
Xylene, m/p-	530 [4]	206 [4]	60	2 J	2 J	2 J	4 U	2 J	160	2 J
Xylene, o-	530 [4]	206 [4]	28	1 J	1 J	1 J	1 J	2 U	84	2 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Analyzed.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-10
MOBILE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW06-02D	SWMU318-GW07A-01	SWMU318-GW07-01	SWMU318-GW08-01	SWMU318-GW09-01	SWMU318-GW10-01	SWMU318-GW10-02	SWMU318-GW11-01
Sample Date	2L Standards	Tap Water PRGs	3/17/2004	6/24/04	3/18/2004	3/17/2004	3/19/2004	3/20/2004	3/20/2004	3/20/2004
Sample Depth (ft bgs)			26-30	25-29	24-28	24-28	24-28	20-24	26-30	24-28
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	2 U	2 U	20 U	2 U	2 J	1 J	2 U	0.7 J
1,1-Dichloroethene	7.00	339	2 U	9.2	10 J	2 U	2 U	4	2 U	2 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	NE	7.16	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	2 U	610	620 D	2	8	575	0.8 J	0.9 J
1,2-Dichloroethene (trans)	70.0	122	2 U	18.2	5 J	2 U	0.6 J	2 J	2 U	2 U
1,2-Dichloropropane	0.560	0.165	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
1,3,5-Trimethylbenzene	350	12.3	0.6 J	2 U	20 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	620	183	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
2-Chlorotoluene	140	122	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	140 [2]	122 [2]	2 U	2 U	8 J	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	0.2 J	2 U	20 U	2 U	2 U	1 J	2 U	2 U
Bromodichloromethane	0.560	0.181	2 U	2 U	20 U	2 U	2 J	2 U	2 U	2 U
Bromoform	0.190	8.51	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, sec-	70.0	243	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, tert-	70.0	243	2 U	2 U	13 J	2 U	2 U	2 U	2 U	2 U
Chloroform	0.190	0.166	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	1,400	395	2 U	2 U	20 U	2 U	0.6 J	2 U	2 U	2 U
Ethylbenzene	29.0	1,340	1 J	2 U	7 J	0.6 J	2 U	2	2 U	2 U
Isopropylbenzene (Cumene)	70.0	658	1 J	2 U	13 J	2 U	2 U	1 J	2 U	2 U
Naphthalene	21.0	6.20	2 U	2 U	31	2 U	5	2 U	20	2 U
n-Butylbenzene	70.0	243	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	70.0	243	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	2 U	2 U	20 U	2 U	2 U	0.7 J	2 U	2 U
Tetrachloroethene (PCE)	0.700	0.10424	2 U	2 U	20 U	2 U	0.9 J	2 U	2 U	2 U
Toluene	1,000	723	1 J	2 U	10 J	0.8 J	2 J	35	0.6 J	0.4 J
Trichloroethene (TCE)	2.80	0.0280	0.8 J	3130	7120 D	0.9 J	29	965	0.8 J	1 J
Vinyl Chloride	0.0150	0.0198	2 U	24.6	20 U	2 U	0.8 J	93	2 U	2 U
Xylene, m/p-	530 [4]	206 [4]	2 J	4 U	17 J	2 J	4 U	5	0.8 J	4 U
Xylene, o-	530 [4]	206 [4]	2 U	2 U	20 U	2 U	2 U	4	0.5 J	2 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Analyzed.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-10
MOBILE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW12-01	SWMU318-GW13-01	SWMU318-GW14-01	SWMU318-GW15-01	SWMU318-GW16-01	SWMU318-GW17-01	SWMU318-GW18-01	SMWU318-GW19-01
Sample Date	2L Standards	Tap Water PRGs	3/20/2004	3/20/2004	3/22/2004	3/22/2004	6/21/04	6/23/04	6/21/04	6/21/04
Sample Depth (ft bgs)			24-28	24-28	26-30	24-28	25-29	25-29	25-29	25-29
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	3	2 U	25 U	100 U	5 U	2 U	2 U	2 U
1,1-Dichloroethene	7.00	339	1 J	2 J	25 U	100 U	5 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	NE	7.16	1 J	2 U	25 U	100 U	5 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	31	89 J	5 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	6	23	90	100 U	37.5	30.5	25.9	4.5
1,2-Dichloroethene (trans)	70.0	122	0.8 J	0.9 J	25 U	100 U	5 U	2 U	2.3	2 U
1,2-Dichloropropane	0.560	0.165	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
1,3,5-Trimethylbenzene	350	12.3	2 U	2 U	25 U	45 J	5 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	620	183	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
2-Chlorotoluene	140	122	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
4-Chlorotoluene	140 [2]	122 [2]	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]	2 U	2 U	25 U	69 J	5 U	2 U	2 U	2 U
Benzene	1.00	0.354	11	8	30	220	5 U	2 U	2 U	11.4
Bromodichloromethane	0.560	0.181	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
Bromoform	0.190	8.51	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
Butylbenzene, sec-	70.0	243	2 U	2 U	25 U	64 J	5 U	2 U	2 U	2 U
Butylbenzene, tert-	70.0	243	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
Chloroform	0.190	0.166	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
Dichlorodifluoromethane	1,400	395	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
Ethylbenzene	29.0	1,340	0.5 J	2 U	23 J	144	5 U	2 U	2 U	2 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
Naphthalene	21.0	6.20	22	2 U	945	3040	5 U	9.8	2 U	2 U
n-Butylbenzene	70.0	243	2 U	2 U	38	100 U	5 U	2 U	2 U	2 U
n-Propylbenzene	70.0	243	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	0.6 J	2 U	25 U	100 U	5 U	2 U	2 U	2 U
Tetrachloroethene (PCE)	0.700	0.10424	2 U	2 U	25 U	100 U	5 U	2 U	2 U	2 U
Toluene	1,000	723	0.9 J	0.5 J	25 U	334	5 U	2 U	2 U	2 U
Trichloroethene (TCE)	2.80	0.0280	11	473	70	100 U	7.8	18.4	12.9	2.4
Vinyl Chloride	0.0150	0.0198	2 J	2 U	25 U	100 U	5.5	5.7	2 U	2 U
Xylene, m/p-	530 [4]	206 [4]	0.7 J	4 U	26	272	10 U	4 U	4 U	4 U
Xylene, o-	530 [4]	206 [4]	0.8 J	2 U	25 U	149	5 U	2 U	2 U	2 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Analyzed.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-10
MOBILE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW20-01	SWMU318-GW21-01	SWMU318-GW22-01	SWMU-318-GW23-01	SWMU318-GW24-01	SWMU318-GW25-01	SWMU318-GW26-01	SWMU318-GW27-01
Sample Date	2L Standards	Tap Water PRGs	6/21/04	6/22/04	6/22/04	6/23/04	6/22/04	6/23/04	6/23/04	6/23/04
Sample Depth (ft bgs)			25-29	25-29	25-29	25-29	25-29	25-29	25-29	25-29
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	2 U	2 U	2 U	2 U	2 U	2 U	3.2	2 U
1,1-Dichloroethene	7.00	339	11.3	2 U	2 U	2 U	2 U	2 U	15.4	2 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	NE	7.16	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	417	101	2 U	336	2 U	2 U	2 U	2 U
1,2-Dichloroethene (trans)	70.0	122	14.4	8.5	2 U	23.2	2 U	2 U	2 U	2 U
1,2-Dichloropropane	0.560	0.165	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3,5-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	620	183	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Chlorotoluene	140	122	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	140 [2]	122 [2]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	2 U	2 U	2 U	2 U	2 U	2.4	2 U	2 U
Bromodichloromethane	0.560	0.181	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	0.190	8.51	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, sec-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, tert-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	0.190	0.166	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	1,400	395	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	29.0	1,340	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	21.0	6.20	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Butylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene (PCE)	0.700	0.10424	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	1,000	723	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene (TCE)	2.80	0.0280	47.6	2 U	2 U	102	2 U	5.2	2 U	2 U
Vinyl Chloride	0.0150	0.0198	63.1	2 U	2 U	203	2 U	2 U	2 U	2 U
Xylene, m/p-	530 [4]	206 [4]	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Xylene, o-	530 [4]	206 [4]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Analyzed.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-10
MOBILE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMV318-GW28-01	SWMU318-GW29-01	SWMV318-GW30-01	SWMU318-GW31-01	SWMU318-GW32-01	SWMU318-GW33-01	SWMU318-GW34-01	SWMU318-GW34-01D
Sample Date	2L Standards	Tap Water PRGs	6/24/04	6/22/04	6/24/04	2/3/2005	2/3/2005	2/4/2005	2/2/2005	2/2/2005
Sample Depth (ft bgs)			25-29	23-27	25-29	24-28	24-28	24-28	22-26	22-26
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	2 U	2 U	2 U	14	0.7 J	1 U	1 U	1 U
1,1-Dichloroethene	7.00	339	2 U	2 U	2 U	2.4	1 U	1 U	3.1	3.3
1,2,3-Trichlorobenzene	NE	7.16 [1]	2 U	2 U	2 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	NE	7.16	2 U	2 U	2 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	350	12.3	13.9	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	2.5	2.4	2 U	31	0.75 J	1 U	840	760
1,2-Dichloroethene (trans)	70.0	122	2 U	2 U	2 U	1 U	1 U	1 U	0.93 J	0.71 J
1,2-Dichloropropane	0.560	0.165	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	350	12.3	4.5	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	620	183	2 U	2 U	2 U	2 U	0.65 J	0.33 J	2 U	2 U
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Chlorotoluene	140	122	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	140 [2]	122 [2]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	27.7	6.9	2 U	16	0.78 J	0.54 J	1.9	2
Bromodichloromethane	0.560	0.181	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	0.190	8.51	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, sec-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, tert-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	0.190	0.166	2 U	2 U	2 U	1 U	0.44 J	1 U	1 U	1 U
Dichlorodifluoromethane	1,400	395	2 U	2 U	2 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	29.0	1,340	27.2	2 U	2 U	1 U	1 U	1 U	0.28 J	0.31 J
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	21.0	6.20	530	108	5.6	9.7	0.8 J	5 U	5 U	5 U
n-Butylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	0.700	0.10424	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
Toluene	1,000	723	2 U	2 U	2 U	0.49 J	1 U	0.3 J	48	52
Trichloroethene (TCE)	2.80	0.0280	14.4	2.7	2 U	74	4.8	1 U	490	450
Vinyl Chloride	0.0150	0.0198	2 U	2 U	2 U	2 U	2 U	2 U	71	79
Xylene, m/p-	530 [4]	206 [4]	27.2	4 U	4 U	2 U	2 U	0.29 J	0.47 J	0.61 J
Xylene, o-	530 [4]	206 [4]	2 U	2 U	2 U	1 U	1 U	1 U	0.33 J	0.31 J

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Analyzed.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-10
MOBILE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW35-01	SWMU318-GW36-01	SWMU318-GW37-01	SWMU318-GW38-01	SWMU318-GW38-01D	SWMU318-GW39-01	SWMU318-GW40-01	SWMU318-GW41-01
Sample Date	2L Standards	Tap Water PRGs	2/5/2005	2/3/2005	2/3/2005	2/2/2005	2/2/2005	2/2/2005	2/2/2005	2/2/2005
Sample Depth (ft bgs)			24-28	24-28	24-28	24-28	24-28	24-28	22-26	22-26
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	10 U	1 U	10 U	1 U	1 U	1 U	1 U	0.99 J
1,1-Dichloroethene	7.00	339	10 U	1 U	10 U	1 U	1 U	1 U	1 U	0.53 J
1,2,3-Trichlorobenzene	NE	7.16 [1]	3.4 J	5 U	50 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	NE	7.16	50 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	350	12.3	20	2 U	35	2 U	2 U	2 U	0.77 J	2 U
1,2-Dichlorobenzene (o-)	620	370	20 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	3.3 J	1 U	7.2 J	1 U	1 U	0.28 J	1.1	2.5
1,2-Dichloroethene (trans)	70.0	122	10 U	1 U	10 U	1 U	1 U	1 U	0.58 J	1 U
1,2-Dichloropropane	0.560	0.165	10 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	350	12.3	7.4 J	2 U	13 J	2 U	2 U	2 U	0.61 J	2 U
1,3-Dichlorobenzene (m-)	620	183	20 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75.0	0.502	20 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
2-Chlorotoluene	140	122	20 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	140 [2]	122 [2]	20 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]	7.4 J	2 U	24	2 U	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	50	1 U	57	0.45 J	0.46 J	1 U	9.9	1.3
Bromodichloromethane	0.560	0.181	20 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
Bromoform	0.190	8.51	20 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, sec-	70.0	243	20 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, tert-	70.0	243	20 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
Chloroform	0.190	0.166	10 U	1 U	10 U	1 U	1 U	0.35 J	1 U	1 U
Dichlorodifluoromethane	1,400	395	50 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	29.0	1,340	31	1 U	42	1 U	1 U	1 U	0.36 J	1 U
Isopropylbenzene (Cumene)	70.0	658	1.7 J	2 U	2.6 J	2 U	2 U	2 U	0.52 J	2 U
Naphthalene	21.0	6.20	790	5 U	1500	5 U	5 U	5 U	0.7 J	4.7 J
n-Butylbenzene	70.0	243	20 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	70.0	243	1.8 J	2 U	2.4 J	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	10 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	0.700	0.10424	10 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Toluene	1,000	723	39	1 U	100	1 U	1 U	0.41 J	2.3	1 U
Trichloroethene (TCE)	2.80	0.0280	10 U	1 U	3.2 J	1 U	1 U	1.7	3.9	7.7
Vinyl Chloride	0.0150	0.0198	2.9 J	2 U	6.3 J	2 U	2 U	2 U	2 U	2 U
Xylene, m/p-	530 [4]	206 [4]	42	2 U	79	2 U	2 U	2 U	0.67 J	0.53 J
Xylene, o-	530 [4]	206 [4]	30	1 U	47	1 U	1 U	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Analyzed.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-10
MOBILE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW42-01	SWMU318-GW43-01	SWMU318-GW44-01	SWMU318-GW44-01D	SWMU318-GW45-01	SWMU318-GW46-01	SWMU318-GW47-01	SWMU318-GW48-01
Sample Date	2L Standards	Tap Water PRGs	2/3/2005	2/2/2005	2/3/2005	2/3/2005	2/3/2005	2/6/2005	2/6/2005	2/5/2005
Sample Depth (ft bgs)			24-28	22-26	22-26	22-26	22-26	24-28	24-28	24-28
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7.00	339	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	NE	7.16 (1)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	NE	7.16	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	1 U	0.62 J	25	23	1	1 U	1 U	1 U
1,2-Dichloroethene (trans)	70.0	122	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	0.560	0.165	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	620	183	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Chlorotoluene	140	122	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	140 (2)	122 (2)	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 (3)	723 (3)	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	1 U	0.37 J	1 U	1 U	1.8	2	1 U	1 U
Bromodichloromethane	0.560	0.181	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	0.190	8.51	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, sec-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, tert-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	0.190	0.166	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	1,400	395	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	29.0	1,340	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	21.0	6.20	5 U	5 U	1.3 J	2 J	1.2 J	5 U	5 U	0.88 J
n-Butylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	0.700	0.10424	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1,000	723	1 U	1.6 C	3.9	1 U	0.54 J	1 U	1 U	1 U
Trichloroethene (TCE)	2.80	0.0280	1 U	0.65 J	10	9.4	0.6 J	0.33 J	1 U	1 U
Vinyl Chloride	0.0150	0.0198	2 U	2 U	9.2	9	2 U	2 U	2 U	2 U
Xylene, m/p-	530 (4)	206 (4)	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Xylene, o-	530 (4)	206 (4)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Analyzed.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected

TABLE 4-10
MOBILE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW49-01	SWMU318-GW49-01D	SWMU318-GW50-01	SWMU318-GW51-01
Sample Date	2L Standards	Tap Water PRGs	2/6/2005	2/6/2005	2/6/2005	2/7/2005
Sample Depth (ft bgs)			24-28	24-28	24-28	24-28
Volatile Organic Compounds (ug/L)						
1,1-Dichloroethane	700	811	1 U	1 U	1 U	0.41 J
1,1-Dichloroethene	7.00	339	1 U	1 U	1 U	0.44 J
1,2,3-Trichlorobenzene	NE	7.16 [1]	5 U	5 U	5 U	0.46 J
1,2,4-Trichlorobenzene	NE	7.16	5 U	5 U	5 U	0.37 J
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U	0.32 J
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	2	2.2	0.24 J	2.5
1,2-Dichloroethene (trans)	70.0	122	1 U	1 U	1 U	1 U
1,2-Dichloropropane	0.560	0.165	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	620	183	2 U	2 U	0.53 J	2 U
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	2 U	2 U	2 U
2-Chlorotoluene	140	122	2 U	2 U	2 U	2 U
4-Chlorotoluene	140 [2]	122 [2]	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [3]	723 [3]	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	0.22 J	1 U	1 U	1.3
Bromodichloromethane	0.560	0.181	2 U	2 U	2 U	2 U
Bromoform	0.190	8.51	2 U	2 U	2 U	2 U
Butylbenzene, sec-	70.0	243	2 U	2 U	2 U	2 U
Butylbenzene, tert-	70.0	243	2 U	2 U	2 U	2 U
Chloroform	0.190	0.166	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	1,400	395	5 U	5 U	5 U	5 U
Ethylbenzene	29.0	1,340	1 U	1 U	1 U	1 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U	2 U
Naphthalene	21.0	6.20	5 U	1.1 J	5 U	0.68 J
n-Butylbenzene	70.0	243	2 U	2 U	2 U	0.31 J
n-Propylbenzene	70.0	243	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	0.700	0.10424	1 U	1 U	1 U	1 U
Toluene	1,000	723	1 U	1 U	1 U	1 U
Trichloroethene (TCE)	2.80	0.0280	0.8 J	0.99 J	1 U	1.2
Vinyl Chloride	0.0150	0.0198	2 U	2 U	2 U	2 U
Xylene, m/p-	530 [4]	206 [4]	2 U	2 U	2 U	2 U
Xylene, o-	530 [4]	206 [4]	1 U	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Analyzed.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[2] Based on professional judgement, value used is for 4-chlorotoluene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-11
MOBILE LABORATORY DETECTIONS SUMMARY
RFI DEEP GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW01-02	SWMU318-GW02-02	SWMU318-GW03-02	SWMU318-GW04-02	SWMU318-GW05-02	SWMU318-GW07-02	SWMU318-GW08-02	SWMU318-GW09-02
Sample Date	2L Standards	Tap Water PRGs	3/19/2004	3/17/2004	3/18/2004	3/18/2004	3/17/2004	3/18/2004	3/17/2004	3/19/2004
Sample Depth (ft bgs)			40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	7.00	339	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	2 U	1 J	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U	0.4 J	2 U	2 U	2 U
1,2-Dichloroethane	0.380	0.123	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	2 U	0.3 J	1 J	2 U	2 U	15	0.3 J	64
1,2-Dichloroethene (trans)	70.0	122	2 U	2 U	2 U	2 U	2 U	0.4 J	2 U	2 U
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	0.8 J	1 J	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [2]	723 [2]	2 U	2 U	2 U	2 U	0.7 J	2 U	2 U	2 U
Benzene	1.00	0.354	0.3 J	1 J	2 U	2 U	2 U	0.8 J	2 U	41
Bromomethane	NE	8.66	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, sec-	70.0	243	0.9 J	0.9 J	2 U	2 U	2 U	0.9 J	2 U	2 U
Ethylbenzene	29.0	1,340	1 J	1 J	1 J	1 J	2 J	0.9 J	1 J	11
Isopropylbenzene (Cumene)	70.0	658	1 J	1 J	2 U	1 J	1 J	1 J	2 U	2 U
Methylene Chloride	5.00	4.28	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	21.0	6.20	20	2 U	9	2 J	2 U	2 U	2 U	2 U
n-Butylbenzene	70.0	243	2 U	2 J	2 U	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 J
Toluene	1,000	723	1 J	1 J	0.9 J	1 J	1 J	0.9 J	1 J	4
Trichloroethene (TCE)	2.80	0.0280	2 U	0.7 J	3	2 U	2 U	28	2 U	0.8 J
Vinyl Chloride	0.0150	0.0198	2 U	2 U	2 U	2 U	2 U	1 J	2 U	2 U
Xylene, m/p-	530 [3]	206 [3]	2 J	2 J	2 J	2 J	2 J	2 J	2 J	8
Xylene, o-	530 [3]	206 [3]	1 J	1 J	2 U	2 U	2 U	1 J	1 J	7

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-11
MOBILE LABORATORY DETECTIONS SUMMARY
RFI DEEP GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW09-02D	SWMU318-GW11-02	SWMU318-GW11-02D	SWMU318-GW12-02	SWMU318-GW13-02	SWMU318-GW14-02	SWMU318-GW15-02	SWMU318-16-02
Sample Date	2L Standards	Tap Water PRGs	3/19/2004	3/20/2004	3/20/2004	3/20/2004	3/20/2004	3/22/2004	3/22/2004	6/21/04
Sample Depth (ft bgs)			40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	2 U	2 U	2 U	2 U	2 U	5 U	5 U	2 U
1,1-Dichloroethene	7.00	339	2 U	2 U	2 U	2 U	2 J	5 U	5 U	2 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	2 U	2 U	2 U	2 U	2 U	5 U	5 U	2 U
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	5 U	5 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U	2 U	5 U	5 U	2 U
1,2-Dichloroethane	0.380	0.123	2 U	2 U	2 U	2 U	2 U	5 U	5 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	68	0.4 J	2 U	0.6 J	72	5 U	2.1 J	43.2
1,2-Dichloroethene (trans)	70.0	122	2 U	2 U	2 U	2 U	0.9 J	5 U	5 U	3.7
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	2 U	2 U	2 U	2 U	5 U	5 U	2 U
4-Isopropyltoluene	1,000 [2]	723 [2]	2 U	2 U	2 U	2 U	2 U	5 U	5 U	2 U
Benzene	1.00	0.354	42	2 U	2 U	2 U	2 U	5 U	16	2 U
Bromomethane	NE	8.66	2 U	2 U	2 U	2 U	2 U	5 U	5 U	2 U
Butylbenzene, sec-	70.0	243	2 U	2 U	2 U	2 U	2 U	5 U	5 U	2 U
Ethylbenzene	29.0	1,340	12	2 U	2 U	2 U	2 U	5 U	3.1 J	2 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U	2 U	2 U	5 U	5 U	2 U
Methylene Chloride	5.00	4.28	2 U	2 U	2 U	2 U	1 J	5 U	5 U	2 U
Naphthalene	21.0	6.20	2 U	2 U	1 J	1 J	2 U	5 U	11	2 U
n-Butylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	5 U	5 U	2 U
Styrene (Ethenylbenzene)	100	1,641	1 J	2 U	2 U	2 U	2 U	5 U	5 U	2 U
Toluene	1,000	723	4	0.5 J	0.4 J	0.5 J	0.8 J	5 U	5 U	2 U
Trichloroethene (TCE)	2.80	0.0280	2 J	2 U	2 U	2 U	13	5 U	5 U	2 U
Vinyl Chloride	0.0150	0.0198	2 J	2 U	2 U	2	1 J	5 U	5 U	2 U
Xylene, m/p-	530 [3]	206 [3]	9	0.5 J	0.5 J	0.5 J	0.7 J	5 U	5 U	4 U
Xylene, o-	530 [3]	206 [3]	8	2 U	2 U	2 U	2 U	5 U	5 U	2 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-11
MOBILE LABORATORY DETECTIONS SUMMARY
RFI DEEP GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW17-02	SWMU318-GW18-02	SWMU318-GW19-02	SWMU318-GW20-02	SWMU318-GW21-02	SWMU318-GW22-02	SWMU318-GW23-02	SWMU318-GW24-02
Sample Date	2L Standards	Tap Water PRGs	6/23/2004	6/21/04	6/21/2004	6/21/04	6/22/04	6/22/04	6/23/04	6/22/04
Sample Depth (ft bgs)			40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	7.00	339	2.6	2 U	2 U	2 U	2.8	2 U	2 U	2 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	0.380	0.123	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	92.1	4.3	171	31.9	83.9	2 U	10	2 U
1,2-Dichloroethene (trans)	70.0	122	16.4	2 U	3.8	2.9	9.1	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [2]	723 [2]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	NE	8.66	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, sec-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	29.0	1,340	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Chloride	5.00	4.28	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	21.0	6.20	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Butylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	1,000	723	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene (TCE)	2.80	0.0280	2 U	2 U	2.6	5.3	2 U	2 U	2 U	2 U
Vinyl Chloride	0.0150	0.0198	172	2 U	93.9	2 U	28.6	2 U	3.7	2 U
Xylene, m/p-	530 [3]	206 [3]	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Xylene, o-	530 [3]	206 [3]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-11
MOBILE LABORATORY DETECTIONS SUMMARY
RFI DEEP GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW25-02	SWMU318-GW25-02D	SWMU318-GW26-02	SWMU318-GW27-02	SWMU318-GW28-02	SWMU318-GW28-02D	SWMU318-GW29-02	SWMU318-GW30-02
Sample Date	2L Standards	Tap Water PRGs	6/23/04	6/23/04	6/23/04	6/23/04	6/24/04	6/24/04	6/22/04	6/24/04
Sample Depth (ft bgs)			40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	2 U	2 U	2 U		2 U	2 U	2 U	2 U
1,1-Dichloroethene	7.00	339	2 U	2 U	3.3		2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	2 U	2 U	2 U		2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U		2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U		2 U	2 U	2 U	2 U
1,2-Dichloroethane	0.380	0.123	2 U	2 U	2 U		2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	70.0	60.8	2 U	2 U	3.7		2 U	2 U	6.1	2 U
1,2-Dichloroethene (trans)	70.0	122	2 U	2 U	2 U		2 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	2 U	2 U		2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [2]	723 [2]	2 U	2 U	2 U		2 U	2 U	2 U	2 U
Benzene	1.00	0.354	2 U	2 U	2 U		2 U	2 U	2 U	2 U
Bromomethane	NE	8.66	2 U	2 U	2 U		2 U	2 U	2 U	2 U
Butylbenzene, sec-	70.0	243	2 U	2 U	2 U		2 U	2 U	2 U	2 U
Ethylbenzene	29.0	1,340	2 U	2 U	2 U		2 U	2 U	2 U	2 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U		2 U	2 U	2 U	2 U
Methylene Chloride	5.00	4.28	2 U	2 U	2 U		2 U	2 U	2 U	2 U
Naphthalene	21.0	6.20	2 U	2 U	2 U		12.7	7.7	7.4	2 U
n-Butylbenzene	70.0	243	1 U	2 U	2 U		2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	2 U	2 U	2 U		2 U	2 U	2 U	2 U
Toluene	1,000	723	2 U	2 U	2 U		2 U	2 U	2 U	2 U
Trichloroethene (TCE)	2.80	0.0280	2 U	2 U	2 U		2 U	2 U	2 U	12.2
Vinyl Chloride	0.0150	0.0198	2 U	2 U	2 U		2 U	2 U	2 U	2 U
Xylene, m/p-	530 [3]	206 [3]	4 U	4 U	4 U		4 U	4 U	4 U	4 U
Xylene, o-	530 [3]	206 [3]	2 U	2 U	2 U		2 U	2 U	2 U	2 U

SAMPLE NOT COLLECTED.

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

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[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-11
MOBILE LABORATORY DETECTIONS SUMMARY
RFI DEEP GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW31-02	SWMU318-GW32-02	SWMU318-GW33-02	SWMU318-GW34-02	SWMU318-GW35-02	SWMU318-GW36-02	SWMU318-GW36-02D	SWMU318-GW37-02
Sample Date	2L Standards	Tap Water PRGs	2/3/2005	2/3/2005	2/4/2005	2/2/2005	2/5/2005	2/3/2005	2/3/2005	2/3/2005
Sample Depth (ft bgs)			40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	1.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7.00	339	0.48 J	1 U	1 U	0.99 J	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	5 U	5 U	5 U	5 U	0.46 J	5 U	5 U	5 U
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	0.380	0.123	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (cis)	70.0	60.8	5	1 U	1 U	32	40	1 U	1 U	1 U
1,2-Dichloroethene (trans)	70.0	122	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [2]	723 [2]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	2.9	1 U	0.36 J	0.89 J	14	1 U	1 U	1 U
Bromomethane	NE	8.66	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Butylbenzene, sec-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	29.0	1,340	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Chloride	5.00	4.28	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	21.0	6.20	1 J	5 U	5 U	5 U	0.83 J	4.4 J	5 U	4.7 J
n-Butylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1,000	723	1 U	1 U	1 U	2.6	1 U	1 U	1 U	1 U
Trichloroethene (TCE)	2.80	0.0280	8.1	0.48 J	1 U	400	1 U	1 U	1 U	1 U
Vinyl Chloride	0.0150	0.0198	2 U	2 U	2 U	1.1 J	2 U	2 U	2 U	2 U
Xylene, m/p-	530 [3]	206 [3]	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Xylene, o-	530 [3]	206 [3]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

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NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
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[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-11
MOBILE LABORATORY DETECTIONS SUMMARY
RFI DEEP GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina 2L Standards	USEPA Region IX Tap Water PRGs	SWMU318-GW38-02	SWMU318-GW39-02	SWMU318-GW40-02	SWMU318-GW41-02	SWMU318-GW42-02	SWMU318-GW43-02	SWMU318-GW44-02	SWMU318-GW45-02
Sample Date			2/2/2005	2/2/2005	2/2/2005	2/1/2005	2/3/2005	2/2/2005	2/3/2005	2/3/2005
Sample Depth (ft bgs)			40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	700	811	1 U	1 U	1 U	0.43 J	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7.00	339	1 U	1 U	1 U	3.8	1 U	4.5	0.56 J	0.54 J
1,2,3-Trichlorobenzene	NE	7.16 (1)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	0.380	0.123	1 U	2.3	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (cis)	70.0	60.8	1 U	1 U	0.56 J	98	1.4	38	95	34
1,2-Dichloroethene (trans)	70.0	122	1 U	1 U	1 U	28	1 U	8.8	1 U	1 U
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 (4)	723 (4)	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	1 U	2.3	1.2	1.5 J	1.9	0.98 J	1.6	1.6
Bromomethane	NE	8.66	5 U	5 U	5 U	4.3	5 U	5 U	5 U	5 U
Butylbenzene, sec-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	29.0	1,340	1 U	1 U	0.45 J	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Chloride	5.00	4.28	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	21.0	6.20	5 U	5 U	5 U	5 U	0.64 J	5 U	5 U	0.9 J
n-Butylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	100	1,641	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1,000	723	1 U	1 U	1.8	0.77 J	1 U	0.92 J	0.91 J	12
Trichloroethene (TCE)	2.80	0.0280	1 U	0.42 J	1 U	90	0.94 J	1	1 U	1.1
Vinyl Chloride	0.0150	0.0198	2 U	2 U	2 U	20	3.1	23	172	170
Xylene, m/p-	530 (3)	206 (3)	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Xylene, o-	530 (3)	206 (3)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

(1) Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
(3) Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
(4) Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-11
MOBILE LABORATORY DETECTIONS SUMMARY
RFI DEEP GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	SWMU318-GW46-02	SWMU318-GW47-02	SWMU318-GW48-02	SWMU318-GW49-02	SWMU318-GW50-02	SWMU318-GW51-02
Sample Date	2L Standards	Tap Water PRGs	2/6/2005	2/6/2005	2/5/2005	2/6/2005	2/6/2005	2/7/2005
Sample Depth (ft bgs)			40-44	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)								
1,1-Dichloroethane	700	811	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7.00	339	0.5 J	0.67 J	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	NE	7.16 [1]	5 U	5 U	5 U	5 U	5 U	0.43 J
1,2,4-Trimethylbenzene	350	12.3	2 U	2 U	2 U	2 U	2 U	0.37 J
1,2-Dichlorobenzene (o-)	620	370	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	0.380	0.123	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (cis)	70.0	60.8	51	6.1	1 U	1 U	1 U	1.4
1,2-Dichloroethene (trans)	70.0	122	1 U	0.4 J	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene (p-)	75.0	0.502	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	1,000 [4]	723 [4]	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	1.00	0.354	0.94 J	0.53 J	1 U	0.41 J	0.53 J	1 U
Bromomethane	NE	8.66	5 U	5 U	5 U	5 U	5 U	5 U
Butylbenzene, sec-	70.0	243	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	29.0	1,340	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene (Cumene)	70.0	658	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Chloride	5.00	4.28	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	21.0	6.20	5 U	5 U	0.68 J	1.2 J	5 U	0.6 J
n-Butylbenzene	70.0	243	2 U	2 U	2 U	2 U	2 U	0.31 J
Styrene (Ethenylbenzene)	100	1,641	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1,000	723	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene (TCE)	2.80	0.0280	0.36 J	0.58 J	1 U	1 U	1 U	1 U
Vinyl Chloride	0.0150	0.0198	36	5.4	2 U	2 U	2 U	2 U
Xylene, m/p-	530 [3]	206 [3]	2 U	2 U	2 U	2 U	2 U	2 U
Xylene, o-	530 [3]	206 [3]	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
U - Not Detected

[1] Based on professional judgement, value used is for 1,2,4-trichlorobenzene as a surrogate compound.
[3] Based on professional judgement and corroboration from NC DENR, the value used is for toluene as a surrogate compound.
[4] Based on professional judgement, value used is for total xylenes as a surrogate compound.

TABLE 4-12
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SHALLOW GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	**Base Background**	North Carolina	USEPA Region IX	SWMU318-GW01	SWMU318-GW02	SWMU318-GW02D	SWMU318-GW03	SWMU318-GW04	SWMU318-GW05	SWMU318-GW06	SWMU318-GW07	SWMU318-GW08
Sample Date	**Uppermost Surficial**	2L Standards	Tap Water PRGs	3/19/2004	3/17/2004	3/17/2004	3/18/2004	3/18/2004	3/17/2004	3/17/2004	3/18/2004	3/17/2004
Sample Depth (ft bgs)				12-16	10-14	10-14	12-16	12-16	10-14	15-19	10-14	12-16
Volatile Organic Compounds (ug/L)												
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180	10 U	NA	NA	NA	NA	NA		10 U	
1,1-Dichloroethane	NE	700	811	10 U	NA	NA	NA	NA	NA		10 U	
1,2-Dichloroethene (cis)	NE	70	60.8	2 J	NA	NA	NA	NA	NA		10 U	
1,2-Dichloroethene (total)	NE	70 [1]	60.8 [1]	2 J	NA	NA	NA	NA	NA		10 U	
Benzene	NE	1.00	0.354	10 U	NA	NA	NA	NA	NA		10 U	
Carbon Disulfide	NE	700	1,043	10 U	NA	NA	NA	NA	NA		10 U	
Ethylbenzene	NE	29.0	1,340	1 J	NA	NA	NA	NA	NA		10 U	
Isopropylbenzene (Cumene)	NE	70	658	2 J	NA	NA	NA	NA	NA		10 U	
Methyl Cyclohexane	NE	NE	5,217	1 J	NA	NA	NA	NA	NA		10 U	
Toluene	NE	1,000	723	10 U	NA	NA	NA	NA	NA		10 U	
Trichloroethene (TCE)	NE	2.80	0.0280	10 U	NA	NA	NA	NA	NA		10 U	
Xylene, m/p-	NE	530 [2]	206 [2]	10 U	NA	NA	NA	NA	NA		10 U	
Xylene, o-	NE	530 [2]	206 [2]	10 U	NA	NA	NA	NA	NA		10 U	
Xylenes, total	NE	530	206	10 U	NA	NA	NA	NA	NA		10 U	
Semivolatile Organic Compounds (ug/L)												
1,1'-Biphenyl	NE	350	304	10 U	10 U	10 U	10 U	10 U	10 U		NA	
2,4-Dimethylphenol	NE	140	730	10 U	10 U	10 U	10 U	10 U	10 U		NA	
2-Methylnaphthalene	NE	14.0	6.20 [3]	10 U	10 U	10 U	10 U	8 J	10 U		NA	
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825	10 U	10 U	10 U	10 U	10 U	10 U		NA	
4-Methylphenol (p-Cresol)	NE	3.50	182	10 U	10 U	10 U	10 U	10 U	10 U		NA	
Acenaphthene	NE	80.0	365	10 U	10 U	10 U	10 U	10 U	10 U		NA	
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80	10 U	10 U	10 U	10 U	10 U	10 U		NA	
Carbazole	NE	NE	3.36	10 U	10 U	10 U	10 U	10 U	10 U		NA	
Dibenzofuran	NE	NE	12.2	10 U	10 U	10 U	10 U	10 U	10 U		NA	
Fluorene	NE	280	243	10 U	10 U	10 U	10 U	10 U	10 U		NA	
Naphthalene	NE	21.0	6.20	9 J	10 U	10 U	10 U	12	10 U		NA	
Phenanthrene	NE	210	183 [5]	10 U	10 U	10 U	10 U	10 U	10 U		NA	
Total Metals (ug/L)												
Barium	37.3	2,000	2,555	NA	NA	NA	NA	NA	NA		NA	

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Bolded values exceed base background concentrations for the uppermost surficial water bearing unit.
Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[1] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[2] Based on professional judgement, value used is for total xylenes as a surrogate compound.
[3] Based on professional judgement, value used is for naphthalene as a surrogate compound.
[4] Based on professional judgement, value used is for p-cresol as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-12
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SHALLOW GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	**Base Background**	North Carolina	USEPA Region IX	SWMU318-GW09	SWMU318-GW10	SWMU318-GW11	SWMU318-GW12	SWMU318-GW13	SWMU318-GW14	SWMU318-GW15	SWMU318-GW16	SWMU318-GW17
Sample Date	**Uppermost Surficial**	2L Standards	Tap Water PRGs	3/19/2004	3/20/2004	3/20/2004	3/20/2004	3/20/2004	3/22/2004	3/22/2004	6/21/2004	6/23/2004
Sample Depth (ft bgs)				12-16	15-19	12-16	12-16	12-16	12-16	12-16	10-14	10-14
Volatile Organic Compounds (ug/L)												
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180		NA			54		NA		NA
1,1-Dichloroethane	NE	700	811		NA			10 U		NA		1 U
1,2-Dichloroethene (cis)	NE	70	60.8		NA			19		NA		0.9 J
1,2-Dichloroethene (total)	NE	70 [1]	60.8 [1]		NA			19		NA		0.9 J
Benzene	NE	1.00	0.354		NA			10 U		NA		1 U
Carbon Disulfide	NE	700	1,043		NA			10 U		NA		0.4 J
Ethylbenzene	NE	29.0	1,340		NA			10 U		NA		1 U
Isopropylbenzene (Cumene)	NE	70	658		NA			10 U		NA		NA
Methyl Cyclohexane	NE	NE	5,217		NA			10 U		NA		NA
Toluene	NE	1,000	723		NA			10 U		NA		3
Trichloroethene (TCE)	NE	2.80	0.0280		NA			57		NA		0.3 J
Xylene, m/p-	NE	530 [2]	206 [2]		NA			10 U		NA		2 U
Xylene, o-	NE	530 [2]	206 [2]		NA			10 U		NA		1 U
Xylenes, total	NE	530	206		NA			10 U		NA		3 U
Semivolatile Organic Compounds (ug/L)												
1,1'-Biphenyl	NE	350	304		10 U			10 U		27		NA
2,4-Dimethylphenol	NE	140	730		10 U			10 U		21		NA
2-Methylnaphthalene	NE	14.0	6.20 [3]		10 U			10 U		130 D		NA
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825		10 U			10 U		10 U		NA
4-Methylphenol (p-Cresol)	NE	3.50	182		10 U			10 U		10 U		NA
Acenaphthene	NE	80.0	365		10 U			10 U		130 D		NA
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80		10 U			10 U		10 U		NA
Carbazole	NE	NE	3.36		10 U			10 U		44		NA
Dibenzofuran	NE	NE	12.2		10 U			10 U		68		NA
Fluorene	NE	280	243		10 U			10 U		49		NA
Naphthalene	NE	21.0	6.20		10 U			10 U		340 D		NA
Phenanthrene	NE	210	183 [5]		10 U			10 U		11		NA
Total Metals (ug/L)												
Barium	37.3	2,000	2,555		NA			NA		NA		NA

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Bolded values exceed base background concentrations for the uppermost surficial water bearing unit.
Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[1] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[2] Based on professional judgement, value used is for total xylenes as a surrogate compound.
[3] Based on professional judgement, value used is for naphthalene as a surrogate compound.
[4] Based on professional judgement, value used is for p-cresol as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-12
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SHALLOW GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	**Base Background**	North Carolina	USEPA Region IX	SWMU318-GW18	SWMU318-GW19	SWMU318-GW20	SWMU318-GW21	SWMU318-GW21D	SWMU318-GW22	SWMU318-GW23	SWMU318-GW24	SWMU318-GW25
Sample Date	**Uppermost Surficial**	2L Standards	Tap Water PRGs	6/21/2004	6/21/2004	6/21/2004	6/22/2004	6/22/2004	6/22/2004	6/23/2004	6/22/2004	6/23/2004
Sample Depth (ft bgs)				10-14	10-14	10-14	10-14	10-14	10-14	10-14	10-14	10-14
Volatile Organic Compounds (ug/L)												
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180									
1,1-Dichloroethane	NE	700	811									
1,2-Dichloroethene (cis)	NE	70	60.8									
1,2-Dichloroethene (total)	NE	70 [1]	60.8 [1]									
Benzene	NE	1.00	0.354									
Carbon Disulfide	NE	700	1,043									
Ethylbenzene	NE	29.0	1,340									
Isopropylbenzene (Cumene)	NE	70	658									
Methyl Cyclohexane	NE	NE	5,217									
Toluene	NE	1,000	723									
Trichloroethene (TCE)	NE	2.80	0.0280									
Xylene, m/p-	NE	530 [2]	206 [2]									
Xylene, o-	NE	530 [2]	206 [2]									
Xylenes, total	NE	530	206									
Semivolatile Organic Compounds (ug/L)												
1,1'-Biphenyl	NE	350	304									
2,4-Dimethylphenol	NE	140	730									
2-Methylnaphthalene	NE	14.0	6.20 [3]									
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825									
4-Methylphenol (p-Cresol)	NE	3.50	182									
Acenaphthene	NE	80.0	365									
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80									
Carbazole	NE	NE	3.36									
Dibenzofuran	NE	NE	12.2									
Fluorene	NE	280	243									
Naphthalene	NE	21.0	6.20									
Phenanthrene	NE	210	183 [5]									
Total Metals (ug/L)												
Barium	37.3	2,000	2,555									

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Bolded values exceed base background concentrations for the uppermost surficial water bearing unit.
Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[1] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[2] Based on professional judgement, value used is for total xylenes as a surrogate compound.
[3] Based on professional judgement, value used is for naphthalene as a surrogate compound.
[4] Based on professional judgement, value used is for p-cresol as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-12
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SHALLOW GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	**Base Background**	North Carolina	USEPA Region IX	SWMU318-GW26	SWMU318-GW27	SWMU318-GW28	SWMU318-GW29	SWMU318-GW30	SWMU318-GW31	SWMU318-GW32	SWMU318-GW33	SWMU318-GW34
Sample Date	**Uppermost Surficial**	2L Standards	Tap Water PRGs	6/23/2004	6/23/2004	6/24/2004	6/22/2004	6/24/2004	2/3/2005	2/3/2005	2/4/2005	2/2/2005
Sample Depth (ft bgs)				10-14	10-14	10-14	10-14	10-14	12-16	12-16	12-16	12-16
Volatile Organic Compounds (ug/L)												
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180						10 U	NA	NA	NA
1,1-Dichloroethane	NE	700	811						10 U	NA	NA	NA
1,2-Dichloroethene (cis)	NE	70	60.8						10 U	NA	NA	NA
1,2-Dichloroethene (total)	NE	70 [1]	60.8 [1]						10 U	NA	NA	NA
Benzene	NE	1.00	0.354						10 U	NA	NA	NA
Carbon Disulfide	NE	700	1,043						10 U	NA	NA	NA
Ethylbenzene	NE	29.0	1,340						10 U	NA	NA	NA
Isopropylbenzene (Cumene)	NE	70	658						10 U	NA	NA	NA
Methyl Cyclohexane	NE	NE	5,217						10 U	NA	NA	NA
Toluene	NE	1,000	723						10 U	NA	NA	NA
Trichloroethene (TCE)	NE	2.80	0.0280						10 U	NA	NA	NA
Xylene, m/p-	NE	530 [2]	206 [2]						10 U	NA	NA	NA
Xylene, o-	NE	530 [2]	206 [2]						10 U	NA	NA	NA
Xylenes, total	NE	530	206						10 U	NA	NA	NA
Semivolatile Organic Compounds (ug/L)												
1,1'-Biphenyl	NE	350	304						10 U	10 U	10 U	10 U
2,4-Dimethylphenol	NE	140	730						10 U	10 U	10 U	10 U
2-Methylnaphthalene	NE	14.0	6.20 [3]						10 U	10 U	10 U	10 U
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825						10 U	10 U	10 U	10 U
4-Methylphenol (p-Cresol)	NE	3.50	182						10 U	10 U	10 U	10 U
Acenaphthene	NE	80.0	365						10 U	10 U	10 U	10 U
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80						10 U	10 U	10 U	9 J
Carbazole	NE	NE	3.36						10 U	10 U	10 U	10 U
Dibenzofuran	NE	NE	12.2						10 U	10 U	10 U	10 U
Fluorene	NE	280	243						10 U	10 U	10 U	10 U
Naphthalene	NE	21.0	6.20						10 U	8 J	10 U	10 U
Phenanthrene	NE	210	183 [5]						10 U	10 U	10 U	10 U
Total Metals (ug/L)												
Barium	37.3	2,000	2,555						NA	NA	NA	NA

SAMPLE NOT COLLECTED.

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

SAMPLE NOT COLLECTED.

Notes:

Bolded values exceed base background concentrations for the uppermost surficial water bearing unit.
Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[1] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[2] Based on professional judgement, value used is for total xylenes as a surrogate compound.
[3] Based on professional judgement, value used is for naphthalene as a surrogate compound.
[4] Based on professional judgement, value used is for p-cresol as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-12
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SHALLOW GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	**Base Background**	North Carolina	USEPA Region IX	SWMU318-GW35	SWMU318-GW36	SWMU318-GW37	SWMU318-GW38	SWMU318-GW39	SWMU318-GW40	SWMU318-GW41	SWMU318-GW42	SWMU318-GW43
Sample Date	**Uppermost Surficial**	2L Standards	Tap Water PRGs	2/5/2005	2/3/2005	2/3/2005	2/2/2005	2/2/2005	2/2/2005	2/1/2005	2/3/2005	2/2/2005
Sample Depth (ft bgs)				12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16
Volatile Organic Compounds (ug/L)												
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180	NA	NA	10 U	NA					
1,1-Dichloroethane	NE	700	811	NA	NA	10 U	NA					
1,2-Dichloroethene (cis)	NE	70	60.8	NA	NA	2 J	NA					
1,2-Dichloroethene (total)	NE	70 [1]	60.8 [1]	NA	NA	2 J	NA					
Benzene	NE	1.00	0.354	NA	NA	17	NA					
Carbon Disulfide	NE	700	1,043	NA	NA	10 U	NA					
Ethylbenzene	NE	29.0	1,340	NA	NA	15	NA					
Isopropylbenzene (Cumene)	NE	70	658	NA	NA	10 U	NA					
Methyl Cyclohexane	NE	NE	5,217	NA	NA	10 U	NA					
Toluene	NE	1,000	723	NA	NA	12	NA					
Trichloroethene (TCE)	NE	2.80	0.0280	NA	NA	10 U	NA					
Xylene, m/p-	NE	530 [2]	206 [2]	NA	NA	32	NA					
Xylene, o-	NE	530 [2]	206 [2]	NA	NA	15	NA					
Xylenes, total	NE	530	206	NA	NA	47	NA					
Semivolatile Organic Compounds (ug/L)												
1,1'-Biphenyl	NE	350	304	31	10 U	32	10 U					
2,4-Dimethylphenol	NE	140	730	370 J	10 U	28 J	10 U					
2-Methylnaphthalene	NE	14.0	6.20 [3]	250	10 U	68	10 U					
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825	65	10 U	10 U	10 U					
4-Methylphenol (p-Cresol)	NE	3.50	182	46	10 U	10 U	10 U					
Acenaphthene	NE	80.0	365	240	10 U	72	10 U					
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80	6 J	10 U	10 U	10 U					
Carbazole	NE	NE	3.36	52	10 U	49	10 U					
Dibenzofuran	NE	NE	12.2	56	10 U	56	10 U					
Fluorene	NE	280	243	49	10 U	50	10 U					
Naphthalene	NE	21.0	6.20	1,200	10 U	430	10 U					
Phenanthrene	NE	210	183 [5]	20	10 U	18	10 U					
Total Metals (ug/L)												
Barium	37.3	2,000	2,555	NA	NA	NA	NA					

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Bolded values exceed base background concentrations for the uppermost surficial water bearing unit.
Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[1] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[2] Based on professional judgement, value used is for total xylenes as a surrogate compound.
[3] Based on professional judgement, value used is for naphthalene as a surrogate compound.
[4] Based on professional judgement, value used is for p-cresol as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-12
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI SHALLOW GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	**Base Background**	North Carolina	USEPA Region IX	SWMU318-GW44	SWMU318-GW45	SWMU318-GW46	SWMU318-GW47	SWMU318-GW48	SWMU318-GW49	SWMU318-GW50	SWMU318-GW51	SWMU318-MW07-05A
Sample Date	**Uppermost Surficial**	2L Standards	Tap Water PRGs	2/3/2005	2/3/2005	2/6/2005	2/6/2005	2/5/2005	2/6/2005	2/6/2005	2/7/2005	2/19/2005
Sample Depth (ft bgs)				12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	14-24
Volatile Organic Compounds (ug/L)												
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180									10 U
1,1-Dichloroethane	NE	700	811									1 J
1,2-Dichloroethene (cis)	NE	70	60.8									5 J
1,2-Dichloroethene (total)	NE	70 [1]	60.8 [1]									5 J
Benzene	NE	1.00	0.354									2 J
Carbon Disulfide	NE	700	1,043									10 U
Ethylbenzene	NE	29.0	1,340									10 U
Isopropylbenzene (Cumene)	NE	70	658									10 U
Methyl Cyclohexane	NE	NE	5,217									10 U
Toluene	NE	1,000	723									10 U
Trichloroethene (TCE)	NE	2.80	0.0280									13
Xylene, m/p-	NE	530 [2]	206 [2]									10 U
Xylene, o-	NE	530 [2]	206 [2]									10 U
Xylenes, total	NE	530	206									10 U
Semivolatile Organic Compounds (ug/L)												
1,1'-Biphenyl	NE	350	304									10 U
2,4-Dimethylphenol	NE	140	730									10 U
2-Methylnaphthalene	NE	14.0	6.20 [3]									10 U
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825									10 U
4-Methylphenol (p-Cresol)	NE	3.50	182									10 U
Acenaphthene	NE	80.0	365									10 U
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80									10 U
Carbazole	NE	NE	3.36									10 U
Dibenzofuran	NE	NE	12.2									10 U
Fluorene	NE	280	243									10 U
Naphthalene	NE	21.0	6.20									10 U
Phenanthrene	NE	210	183 [5]									10 U
Total Metals (ug/L)												
Barium	37.3	2,000	2,555									**89.5 J**

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Bolded values exceed base background concentrations for the uppermost surficial water bearing unit.
Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
U - Not Detected
UJ - Not detected. Reported value is estimated.

[1] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[2] Based on professional judgement, value used is for total xylenes as a surrogate compound.
[3] Based on professional judgement, value used is for naphthalene as a surrogate compound.
[4] Based on professional judgement, value used is for p-cresol as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-13
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	**Base Background**	North Carolina	USEPA Region IX	SWMU318-MW01	SWMU318-MW02	SWMU318-MW02D	SWMU318-MW03	SWMU318-MW03D	IR86-MW25IW	IR86-MW27	318-MW01-05A	318-MW02-05A	318-MW02D-05A
Sample Date	**Lowermost Surficial**	2L Standards	Tap Water PRGs	4/3/2004	4/4/2004	4/4/2004	4/4/2004	4/4/2004	4/4/2004	4/3/2004	2/15/2005	2/16/2005	2/16/2005
Sample Depth (ft bgs)				20-30	20-30	20-30	20-30	20-30	20-30	20-30	20-30	20-30	20-30
Volatile Organic Compounds (ug/L)													
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180	10 U	10 U	NA	180	160	630 D	24 J	10 U	10 U	10 U
1,1-Dichloroethane	NE	700	811	10 U	10 U	NA	10 U	10 U	53	10 U	10 U	10 U	10 U
1,1-Dichloroethene	NE	7.00	339	10 U	2 J	NA	10 U	10 U	440 D	5 J	10 U	3 J	3 J
1,2-Dichlorobenzene (o-)	NE	620	370	10 U	10 U	NA	10 U	10 U	73	10 U	10 U	1 J	1 J
1,2-Dichloroethane	NE	0.380	0.123	10 U	10 U	NA	10 U	10 U	5 J	10 U	10 U	10 U	10 U
1,2-Dichloroethene (cis)	NE	70.0	60.8	1 J	120	NA	550 D	590 D	18	400 D	10 U	90	92
1,2-Dichloroethene (total)	NE	70.0 [1]	60.8 [1]	1 J	120	NA	550 D	590 D	18	400 D	10 U	92	94
1,2-Dichloroethene (trans)	NE	70.0	122	10 U	2 J	NA	2 J	1 J	10 U	4 J	10 U	2 J	2 J
1,3-Dichlorobenzene (m-)	NE	620	183	10 U	10 U	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	NE	700	5,475	10 UJ	10 UJ	NA	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Benzene	NE	1.00	0.354	10 U	38	NA	1 J	10 U	10 U	5 J	10 U	29	30
Carbon Disulfide	NE	700	1,043	1 J	10 U	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	NE	50.0	106	10 U	10 U	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	NE	0.190	0.166	10 U	10 U	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	NE	NE	10,342	10 U	10 U	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	NE	1,400	395	10 U	10 U	NA	10 U	10 U	11 U	10 U	10 U	10 U	10 U
Ethylbenzene	NE	29.0	1,340	10 U	30	NA	3 J	3 J	3 J	10 U	10 U	20	20
Isopropylbenzene (Cumene)	NE	70.0	658	10 U	2 J	NA	1 J	10 U	1 J	10 U	10 U	1 J	1 J
Methyl Cyclohexane	NE	NE	5,217	10 U	10 U	NA	12	10 U	10 U	10 U	10 U	10 U	10 U
Methyl Tert-Butyl Ether (MTBE)	NE	200	11.0	10 U	10 U	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	NE	1,000	723	10 U	10	NA	28	28	1 J	1 J	10 U	5 J	5 J
Trichloroethene (TCE)	NE	2.80	0.0280	10 U	240 D	NA	960 D	1000 D	30	1200 D	10 U	79	78
Vinyl Chloride	NE	0.0150	0.0198	10 U	13	NA	96	88	2 J	78 J	10 U	14	14
Xylene, m/p-	NE	530 [2]	206 [2]	10 U	19	NA	2 J	2 J	1 J	10 U	10 U	9 J	9 J
Xylene, o-	NE	530 [2]	206 [2]	10 U	8 J	NA	5 J	5 J	3 J	10 U	10 U	3 J	3 J
Xylenes, total	NE	530	206	10 U	27	NA	7 J	7 J	4 J	10 U	10 U	12	12
Semivolatile Organic Compounds (ug/L)													
1,1'-Biphenyl	NE	350	304	10 U	8 J	8 J	10 U	NA	10 U	10 U	10 U	6 J	6 J
2,4-Dimethylphenol	NE	140	730	10 U	67	74	10 U	NA	10 U	10 U	10 U	35	32
2-Methylnaphthalene	NE	14.0	6.20 [3]	10 U	62	97 D	10 U	NA	10 U	10 U	10 U	34	37
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U	10 U	10 U
4-Methylphenol (p-Cresol)	NE	3.50	182	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U	10 U	10 U
Acenaphthene	NE	80.0	365	10 U	35	32	10 U	NA	10 U	10 U	10 U	30	29
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U	10 U	10 U
Caprolactam	NE	3,500	18,250	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	NE	3.36	10 U	10	9 J	10 U	NA	10 U	10 U	10 U	9 J	8 J
Dibenzofuran	NE	NE	12.2	10 U	10	9 J	10 U	NA	10 U	10 U	10 U	10	9 J
Di-n-butyl Phthalate (DBP)	NE	700	3,650	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U	10 U	10 U
Fluorene	NE	280	243	10 U	9	8 J	10 U	NA	10 U	10 U	10 U	8 J	7 J
Naphthalene	NE	21.0	6.20	10 U	260 D	360 D	10 U	NA	15	14	10 U	260	300
Phenanthrene	NE	210	183 [5]	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U	10 U	10 U
Phenol	NE	300	10,950	10 U	10 U	10 U	38	NA	10 U	10 U	10 U	10 U	10 U
Total Metals (ug/L)													
Arsenic	13.8	10.0	0.0448	3.1 J	3.03 U	NA	3.03 U	NA	3.03 U	3.03 U	3.03 U	3.03 U	3.03 U
Barium	35.3	2,000	2,555	26 J	7.1 J	NA	25.1 J	NA	5.9 B	4 B	15.2 J	2.4 U	2.5 U

Notes:

Bolded values exceed base background concentrations for lowermost surficial water bearing unit.
Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
U - Not Detected

J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after dilution.
UJ - Not detected. Reported value is estimated.

[1] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[2] Based on professional judgement, value used is for total xylenes as a surrogate compound.
[3] Based on professional judgement, value used is for naphthalene as a surrogate compound.
[4] Based on professional judgement, value used is for p-cresol as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-13
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	Base Background	North Carolina	USEPA Region IX	318-MW03-05A	318-MW04-05A	318-MW04D-05A	318-MW05-05A	SWMU318-MW06-05A	SWMU318-MW08-05A	86-GW02IW-05A	86-GW27IW-05A	SWMU318-GW01-01
Sample Date	Lowermost Surficial	2L Standards	Tap Water PRGs	2/16/2005	2/17/2005	2/17/2005	2/17/2005	2/19/2005	2/19/2005	2/16/2005	2/16/2005	3/19/2004
Sample Depth (ft bgs)				20-30	20-30	20-30	20-30	20-30	20-30	20-30	20-30	24-28
Volatile Organic Compounds (ug/L)												
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180	140	10 U	10 U	10 U	10 U	10 U	10 U	8 J	
1,1-Dichloroethane	NE	700	811	1 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
1,1-Dichloroethene	NE	7.00	339	3 J	10 U	10 U	10 U	10 U	10 U	10 U	3 J	
1,2-Dichlorobenzene (o-)	NE	620	370	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
1,2-Dichloroethane	NE	0.380	0.123	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
1,2-Dichloroethene (cis)	NE	70.0	60.8	640	10 U	10 U	10 U	2 J	10 U	10 U	310	
1,2-Dichloroethene (total)	NE	70.0 [1]	60.8 [1]	640	10 U	10 U	10 U	2 J	10 U	10 U	310	
1,2-Dichloroethene (trans)	NE	70.0	122	1 J	10 U	10 U	10 U	10 U	10 U	10 U	2 J	
1,3-Dichlorobenzene (m-)	NE	620	183	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Acetone	NE	700	5,475	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Benzene	NE	1.00	0.354	2 J	10 U	10 U	10 U	13	10 U	10 U	6 J	
Carbon Disulfide	NE	700	1,043	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Chlorobenzene	NE	50.0	106	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Chloroform	NE	0.190	0.166	10 U	3 J	3 J	2 J	10 U	2 J	10 U	10 U	
Cyclohexane	NE	NE	10,342	10 U	10 U	10 U	10 U	6 J	10 U	10 U	10 U	
Dichlorodifluoromethane	NE	1,400	395	2 J	10 U	10 U	10 U	10 U	10 U	10 U	1 J	
Ethylbenzene	NE	29.0	1,340	5 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Isopropylbenzene (Cumene)	NE	70.0	658	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Methyl Cyclohexane	NE	NE	5,217	10 U	10 U	10 U	10 U	3 J	10 U	10 U	10 U	
Methyl Tert-Butyl Ether (MTBE)	NE	200	11.0	10 U	3 J	4 J	10 U	10 U	10 U	10 U	10 U	
Toluene	NE	1,000	723	26	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Trichloroethene (TCE)	NE	2.80	0.0280	940	10 U	10 U	10 U	6 J	10 U	10 U	350	
Vinyl Chloride	NE	0.0150	0.0198	110	10 U	10 U	10 U	10 U	10 U	10 U	32	
Xylene, m/p-	NE	530 [2]	206 [2]	4 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Xylene, o-	NE	530 [2]	206 [2]	5 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Xylenes, total	NE	530	206	9 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Semivolatile Organic Compounds (ug/L)												
1,1'-Biphenyl	NE	350	304	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
2,4-Dimethylphenol	NE	140	730	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
2-Methylnaphthalene	NE	14.0	6.20 [3]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
4-Methylphenol (p-Cresol)	NE	3.50	182	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Acenaphthene	NE	80.0	365	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Caprolactam	NE	3,500	18,250	5 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Carbazole	NE	NE	3.36	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Dibenzofuran	NE	NE	12.2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Di-n-butyl Phthalate (DBP)	NE	700	3,650	10 U	10 U	10 U	10 U	10 U	8 J	10 U	10 U	
Fluorene	NE	280	243	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Naphthalene	NE	21.0	6.20	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Phenanthrene	NE	210	183 [5]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Phenol	NE	300	10,950	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
Total Metals (ug/L)												
Arsenic	13.8	10.0	0.0448	3.1 U	3.03 U	3.03 U	3.03 U	4.1 U	2.81 U	3.03 U	3.03 U	
Barium	35.3	2,000	2,555	2.4 U	20.6 J	20.6 J	21.8 J	13.1 J	**72.6 J**	3.4 U	2.6 U	

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Bolded values exceed base background concentrations for lowermost surficial water bearing unit.
Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
U - Not Detected
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after c
UJ - Not detected. Reported value is estimated.

[1] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[2] Based on professional judgement, value used is for total xylenes as a surrogate compound.
[3] Based on professional judgement, value used is for naphthalene as a surrogate compound.
[4] Based on professional judgement, value used is for p-cresol as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-13
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	**Base Background**	North Carolina	USEPA Region IX	SWMU318-GW02-01	SWMU318-GW03-01	SWMU318-GW04-01	SWMU318-GW05-01	SWMU318-GW06-01	SWMU318-GW07-01	SWMU318-GW08-01	SWMU318-GW09-01	SWMU318-GW10-01
Sample Date	**Lowermost Surficial**	2L Standards	Tap Water PRGs	3/17/2005	3/18/2004	3/18/2004	3/17/2004	3/17/2004	3/18/2004	3/17/2004	3/19/2004	3/20/2004
Sample Depth (ft bgs)				24-28	24-28	24-28	24-28	20-24	24-28	24-28	24-28	20-24
Volatile Organic Compounds (ug/L)												
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180			10 U		NA	NA	NA	NA	180
1,1-Dichloroethane	NE	700	811			10 U		NA	NA	NA	NA	10 U
1,1-Dichloroethene	NE	7.00	339			10 U		NA	NA	NA	NA	4 J
1,2-Dichlorobenzene (o-)	NE	620	370			10 U		NA	NA	NA	NA	10 U
1,2-Dichloroethane	NE	0.380	0.123			10 U		NA	NA	NA	NA	10 U
1,2-Dichloroethene (cis)	NE	70.0	60.8			2 J		NA	NA	NA	NA	670 D
1,2-Dichloroethene (total)	NE	70.0 [1]	60.8 [1]			2 J		NA	NA	NA	NA	670 D
1,2-Dichloroethene (trans)	NE	70.0	122			10 U		NA	NA	NA	NA	6 J
1,3-Dichlorobenzene (m-)	NE	620	183			10 U		NA	NA	NA	NA	10 U
Acetone	NE	700	5,475			10 UJ		NA	NA	NA	NA	10 UJ
Benzene	NE	1.00	0.354			5 J		NA	NA	NA	NA	2 J
Carbon Disulfide	NE	700	1,043			10 U		NA	NA	NA	NA	10 U
Chlorobenzene	NE	50.0	106			10 U		NA	NA	NA	NA	10 U
Chloroform	NE	0.190	0.166			10 U		NA	NA	NA	NA	10 U
Cyclohexane	NE	NE	10,342			10 U		NA	NA	NA	NA	10 U
Dichlorodifluoromethane	NE	1,400	395			10 U		NA	NA	NA	NA	10 U
Ethylbenzene	NE	29.0	1,340			10 U		NA	NA	NA	NA	3 J
Isopropylbenzene (Cumene)	NE	70.0	658			10 U		NA	NA	NA	NA	10 U
Methyl Cyclohexane	NE	NE	5,217			10 U		NA	NA	NA	NA	10 U
Methyl Tert-Butyl Ether (MTBE)	NE	200	11.0			10 U		NA	NA	NA	NA	10 U
Toluene	NE	1,000	723			10 U		NA	NA	NA	NA	33
Trichloroethene (TCE)	NE	2.80	0.0280			2 J		NA	NA	NA	NA	1200 D
Vinyl Chloride	NE	0.0150	0.0198			10 U		NA	NA	NA	NA	140
Xylene, m/p-	NE	530 [2]	206 [2]			10 U		NA	NA	NA	NA	5 J
Xylene, o-	NE	530 [2]	206 [2]			10 U		NA	NA	NA	NA	4 J
Xylenes, total	NE	530	206			10 U		NA	NA	NA	NA	8 J
Semivolatile Organic Compounds (ug/L)												
1,1'-Biphenyl	NE	350	304			NA		36	19 U	10 U	10 U	NA
2,4-Dimethylphenol	NE	140	730			NA		990 D	12 J	10 U	10 U	NA
2-Methylnaphthalene	NE	14.0	6.20 [3]			NA		480 D	19 U	10 U	10 U	NA
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825			NA		410 D	19 U	10 U	10 U	NA
4-Methylphenol (p-Cresol)	NE	3.50	182			NA		250 DJ	19 U	10 U	10 U	NA
Acenaphthene	NE	80.0	365			NA		280 DJ	19 U	10 U	10 U	NA
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80			NA		10 U	19 U	10 U	10 U	NA
Caprolactam	NE	3,500	18,250			NA		10 U	19 U	10 U	10 U	NA
Carbazole	NE	NE	3.36			NA		26	19 U	10 U	10 U	NA
Dibenzofuran	NE	NE	12.2			NA		73	19 U	10 U	10 U	NA
Di-n-butyl Phthalate (DBP)	NE	700	3,650			NA		10 U	19 U	10 U	10 U	NA
Fluorene	NE	280	243			NA		46	19 U	10 U	10 U	NA
Naphthalene	NE	21.0	6.20			NA		2100 D	98	10 U	10 U	NA
Phenanthrene	NE	210	183 [5]			NA		10 U	19 U	10 U	10 U	NA
Phenol	NE	300	10,950			NA		10 U	19 U	10 U	10 U	NA
Total Metals (ug/L)												
Arsenic	13.8	10.0	0.0448			NA		NA	NA	NA	NA	NA
Barium	35.3	2,000	2,555			NA		NA	NA	NA	NA	NA

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

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SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Bolded values exceed base background concentrations for lowermost surficial water bearing unit.
Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
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[1] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[2] Based on professional judgement, value used is for total xylenes as a surrogate compound.
[3] Based on professional judgement, value used is for naphthalene as a surrogate compound.
[4] Based on professional judgement, value used is for p-cresol as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-13
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	**Base Background**	North Carolina	USEPA Region IX	SWMU318-GW11-01	SWMU318-GW12-01	SWMU318-GW13-01	SWMU318-GW14-01	SWMU318-GW15-01	SWMU318-GW16-01	SWMU318-GW17-01	SWMU318-GW18-01	SWMU318-GW19-01
Sample Date	**Lowermost Surficial**	2L Standards	Tap Water PRGs	3/20/2004	3/20/2004	3/20/2004	3/23/2004	3/22/2004	6/21/2004	6/23/2004	6/21/2004	6/21/2004
Sample Depth (ft bgs)				24-28	24-28	24-28	26-30	24-28	24-28	25-29	25-29	25-29
Volatile Organic Compounds (ug/L)												
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180	NA	NA	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	NA	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.	SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.
1,1-Dichloroethane	NE	700	811	NA	NA		NA					
1,1-Dichloroethene	NE	7.00	339	NA	NA		NA					
1,2-Dichlorobenzene (o-)	NE	620	370	NA	NA		NA					
1,2-Dichloroethane	NE	0.380	0.123	NA	NA		NA					
1,2-Dichloroethene (cis)	NE	70.0	60.8	NA	NA		NA					
1,2-Dichloroethene (total)	NE	70.0 [1]	60.8 [1]	NA	NA		NA					
1,2-Dichloroethene (trans)	NE	70.0	122	NA	NA		NA					
1,3-Dichlorobenzene (m-)	NE	620	183	NA	NA		NA					
Acetone	NE	700	5,475	NA	NA		NA					
Benzene	NE	1.00	0.354	NA	NA		NA					
Carbon Disulfide	NE	700	1,043	NA	NA		NA					
Chlorobenzene	NE	50.0	106	NA	NA		NA					
Chloroform	NE	0.190	0.166	NA	NA		NA					
Cyclohexane	NE	NE	10,342	NA	NA		NA					
Dichlorodifluoromethane	NE	1,400	395	NA	NA		NA					
Ethylbenzene	NE	29.0	1,340	NA	NA		NA					
Isopropylbenzene (Cumene)	NE	70.0	658	NA	NA		NA					
Methyl Cyclohexane	NE	NE	5,217	NA	NA		NA					
Methyl Tert-Butyl Ether (MTBE)	NE	200	11.0	NA	NA		NA					
Toluene	NE	1,000	723	NA	NA		NA					
Trichloroethene (TCE)	NE	2.80	0.0280	NA	NA		NA					
Vinyl Chloride	NE	0.0150	0.0198	NA	NA		NA					
Xylene, m/p-	NE	530 [2]	206 [2]	NA	NA		NA					
Xylene, o-	NE	530 [2]	206 [2]	NA	NA		NA					
Xylenes, total	NE	530	206	NA	NA		NA					
Semivolatile Organic Compounds (ug/L)												
1,1'-Biphenyl	NE	350	304	10 U	10 U		12					
2,4-Dimethylphenol	NE	140	730	10 U	10 U		13					
2-Methylnaphthalene	NE	14.0	6.20 [3]	10 U	10 U		130 D					
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825	10 U	10 U		10 U					
4-Methylphenol (p-Cresol)	NE	3.50	182	10 U	10 U		10 U					
Acenaphthene	NE	80.0	365	10 U	11		95 DJ					
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80	10 U	10 U		2 J					
Caprolactam	NE	3,500	18,250	10 U	10 U		10 U					
Carbazole	NE	NE	3.36	10 U	10 U		24 J					
Dibenzofuran	NE	NE	12.2	10 U	10 U		26					
Di-n-butyl Phthalate (DBP)	NE	700	3,650	10 U	10 U		10 U					
Fluorene	NE	280	243	10 U	10 U		16					
Naphthalene	NE	21.0	6.20	10 U	26		800 D					
Phenanthrene	NE	210	183 [5]	10 U	10 U		0.6 J					
Phenol	NE	300	10,950	10 U	10 U		0.5 J					
Total Metals (ug/L)												
Arsenic	13.8	10.0	0.0448	NA	NA		NA					
Barium	35.3	2,000	2,555	NA	NA		NA					

Notes:

Bolded values exceed base background concentrations for lowermost surficial water bearing unit.
Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

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TABLE 4-13
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	**Base Background**	North Carolina	USEPA Region IX	SWMU318-GW20-01	SWMU318-GW20-02A	SWMU318-GW21-01	SWMU318-GW22-01	SWMU318-GW23-01	SWMU318-GW24-01	SWMU318-GW25-01	SWMU318-GW26-01	SWMU318-GW27-01
Sample Date	**Lowermost Surficial**	2L Standards	Tap Water PRGs	6/21/2004	6/24/2004	6/22/2004	6/22/2004	6/23/2004	6/22/2004	6/23/2004	6/23/2004	6/23/2004
Sample Depth (ft bgs)				25-29	20-24	25-29	25-29	25-29	25-29	25-29	25-29	25-29
Volatile Organic Compounds (ug/L)												
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180		NA			NA	NA			
1,1-Dichloroethane	NE	700	811		10			1 U	1 U			
1,1-Dichloroethene	NE	7.00	339		0.3 J			1 U	1 U			
1,2-Dichlorobenzene (o-)	NE	620	370		NA			NA	NA			
1,2-Dichloroethane	NE	0.380	0.123		1 U			1 U	1 U			
1,2-Dichloroethene (cis)	NE	70.0	60.8		24			460 D	1 U			
1,2-Dichloroethene (total)	NE	70.0 [1]	60.8 [1]		26			460 D	2 U			
1,2-Dichloroethene (trans)	NE	70.0	122		2			3	1 U			
1,3-Dichlorobenzene (m-)	NE	620	183		NA			NA	NA			
Acetone	NE	700	5,475		2 J			5 U	5 U			
Benzene	NE	1.00	0.354		1			1	1 U			
Carbon Disulfide	NE	700	1,043		0.7 J			1 U	1 U			
Chlorobenzene	NE	50.0	106		1			1 U	1 U			
Chloroform	NE	0.190	0.166		1 U			1 U	1 U			
Cyclohexane	NE	NE	10,342		NA			NA	NA			
Dichlorodifluoromethane	NE	1,400	395		NA			NA	NA			
Ethylbenzene	NE	29.0	1,340		2			1 U	1 U			
Isopropylbenzene (Cumene)	NE	70.0	658		NA			NA	NA			
Methyl Cyclohexane	NE	NE	5,217		NA			NA	NA			
Methyl Tert-Butyl Ether (MTBE)	NE	200	11.0		NA			NA	NA			
Toluene	NE	1,000	723		3			3	1 U			
Trichloroethene (TCE)	NE	2.80	0.0280		64			140	1 U			
Vinyl Chloride	NE	0.0150	0.0198		5			140	2 U			
Xylene, m/p-	NE	530 [2]	206 [2]		0.9 J			2 U	2 U			
Xylene, o-	NE	530 [2]	206 [2]		0.3 J			0.3 J	1 U			
Xylenes, total	NE	530	206		1 J			0.9 J	3 U			
Semivolatile Organic Compounds (ug/L)												
1,1'-Biphenyl	NE	350	304		NA			NA	NA			
2,4-Dimethylphenol	NE	140	730		NA			NA	NA			
2-Methylnaphthalene	NE	14.0	6.20 [3]		NA			NA	NA			
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825		NA			NA	NA			
4-Methylphenol (p-Cresol)	NE	3.50	182		NA			NA	NA			
Acenaphthene	NE	80.0	365		NA			NA	NA			
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80		NA			NA	NA			
Caprolactam	NE	3,500	18,250		NA			NA	NA			
Carbazole	NE	NE	3.36		NA			NA	NA			
Dibenzofuran	NE	NE	12.2		NA			NA	NA			
Di-n-butyl Phthalate (DBP)	NE	700	3,650		NA			NA	NA			
Fluorene	NE	280	243		NA			NA	NA			
Naphthalene	NE	21.0	6.20		NA			NA	NA			
Phenanthrene	NE	210	183 [5]		NA			NA	NA			
Phenol	NE	300	10,950		NA			NA	NA			
Total Metals (ug/L)												
Arsenic	13.8	10.0	0.0448		NA			NA	NA			
Barium	35.3	2,000	2,555		NA			NA	NA			

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Bolded values exceed base background concentrations for lowermost surficial water bearing unit.
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Boxed values exceed USEPA Region IX Tap Water PRGs.

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TABLE 4-13
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	**Base Background**	North Carolina	USEPA Region IX	SWMU318-GW28-01	SWMU318-GW29-01	SWMU318-GW30-01	SWMU318-GW31-01	SWMU318-GW32-01	SWMU318-GW33-01	SWMU318-GW34-01	SWMU318-GW35-01	SWMU318-GW36-01
Sample Date	**Lowermost Surficial**	2L Standards	Tap Water PRGs	6/24/2004	6/22/2004	6/24/2004	2/3/2005	2/3/2005	2/4/2005	2/2/2005	2/5/2005	2/3/2005
Sample Depth (ft bgs)				25-29	23-27	25-29	24-28	24-28	24-28	24-28	24-28	24-28
Volatile Organic Compounds (ug/L)												
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180						10 U	NA	10 U	
1,1-Dichloroethane	NE	700	811						10 U	NA	5 J	
1,1-Dichloroethene	NE	7.00	339						10 U	NA	10 U	
1,2-Dichlorobenzene (o-)	NE	620	370						10 U	NA	10 U	
1,2-Dichloroethane	NE	0.380	0.123						10 U	NA	10 U	
1,2-Dichloroethene (cis)	NE	70.0	60.8						10 U	NA	12	
1,2-Dichloroethene (total)	NE	70.0 [1]	60.8 [1]						10 U	NA	12	
1,2-Dichloroethene (trans)	NE	70.0	122						10 U	NA	10 U	
1,3-Dichlorobenzene (m-)	NE	620	183						1 J	NA	10 U	
Acetone	NE	700	5,475						10 U	NA	10 U	
Benzene	NE	1.00	0.354						2 J	NA	140	
Carbon Disulfide	NE	700	1,043						10 U	NA	10 U	
Chlorobenzene	NE	50.0	106						10 U	NA	10 U	
Chloroform	NE	0.190	0.166						10 U	NA	10 U	
Cyclohexane	NE	NE	10,342						10 U	NA	10 U	
Dichlorodifluoromethane	NE	1,400	395						10 U	NA	10 U	
Ethylbenzene	NE	29.0	1,340						10 U	NA	110	
Isopropylbenzene (Cumene)	NE	70.0	658						10 U	NA	5 J	
Methyl Cyclohexane	NE	NE	5,217						10 U	NA	10 U	
Methyl Tert-Butyl Ether (MTBE)	NE	200	11.0						120	NA	10 U	
Toluene	NE	1,000	723						10 U	NA	130	
Trichloroethene (TCE)	NE	2.80	0.0280						10 U	NA	2 J	
Vinyl Chloride	NE	0.0150	0.0198						10 U	NA	6 J	
Xylene, m/p-	NE	530 [2]	206 [2]						10 U	NA	78	
Xylene, o-	NE	530 [2]	206 [2]						10 U	NA	110	
Xylenes, total	NE	530	206						10 U	NA	190	
Semivolatile Organic Compounds (ug/L)												
1,1'-Biphenyl	NE	350	304						NA	10 U	NA	
2,4-Dimethylphenol	NE	140	730						NA	10 U	NA	
2-Methylnaphthalene	NE	14.0	6.20 [3]						NA	10 U	NA	
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825						NA	10 U	NA	
4-Methylphenol (p-Cresol)	NE	3.50	182						NA	10 U	NA	
Acenaphthene	NE	80.0	365						NA	10 U	NA	
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80						NA	9 J	NA	
Caprolactam	NE	3,500	18,250						NA	10 U	NA	
Carbazole	NE	NE	3.36						NA	10 U	NA	
Dibenzofuran	NE	NE	12.2						NA	10 U	NA	
Di-n-butyl Phthalate (DBP)	NE	700	3,650						NA	10 U	NA	
Fluorene	NE	280	243						NA	10 U	NA	
Naphthalene	NE	21.0	6.20						NA	10 U	NA	
Phenanthrene	NE	210	183 [5]						NA	10 U	NA	
Phenol	NE	300	10,950						NA	10 U	NA	
Total Metals (ug/L)												
Arsenic	13.8	10.0	0.0448						NA	NA	NA	
Barium	35.3	2,000	2,555						NA	NA	NA	

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

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Notes:

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TABLE 4-13
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	**Base Background**	North Carolina	USEPA Region IX	SWMU318-GW37-01	SWMU318-GW38-01	SWMU318-GW39-01	SWMU318-GW40-01	SWMU318-GW41-01	SWMU318-GW42-01	SWMU318-GW43-01	SWMU318-GW44-01	SWMU318-GW44-01D
Sample Date	**Lowermost Surficial**	2L Standards	Tap Water PRGs	2/3/2005	2/2/2005	2/2/2005	2/2/2005	2/2/2005	2/3/2005	2/2/2005	2/3/2005	2/3/2005
Sample Depth (ft bgs)				24-28	24-28	24-28	22-26	22-26	24-28	22-26	22-26	22-26
Volatile Organic Compounds (ug/L)												
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180									
1,1-Dichloroethane	NE	700	811									
1,1-Dichloroethene	NE	7.00	339									
1,2-Dichlorobenzene (o-)	NE	620	370									
1,2-Dichloroethane	NE	0.380	0.123									
1,2-Dichloroethene (cis)	NE	70.0	60.8									
1,2-Dichloroethene (total)	NE	70.0 [1]	60.8 [1]									
1,2-Dichloroethene (trans)	NE	70.0	122									
1,3-Dichlorobenzene (m-)	NE	620	183									
Acetone	NE	700	5,475									
Benzene	NE	1.00	0.354									
Carbon Disulfide	NE	700	1,043									
Chlorobenzene	NE	50.0	106									
Chloroform	NE	0.190	0.166									
Cyclohexane	NE	NE	10,342									
Dichlorodifluoromethane	NE	1,400	395									
Ethylbenzene	NE	29.0	1,340									
Isopropylbenzene (Cumene)	NE	70.0	658									
Methyl Cyclohexane	NE	NE	5,217									
Methyl Tert-Butyl Ether (MTBE)	NE	200	11.0									
Toluene	NE	1,000	723									
Trichloroethene (TCE)	NE	2.80	0.0280									
Vinyl Chloride	NE	0.0150	0.0198									
Xylene, m/p-	NE	530 [2]	206 [2]									
Xylene, o-	NE	530 [2]	206 [2]									
Xylenes, total	NE	530	206									
Semivolatile Organic Compounds (ug/L)												
1,1'-Biphenyl	NE	350	304									
2,4-Dimethylphenol	NE	140	730									
2-Methylnaphthalene	NE	14.0	6.20 [3]									
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825									
4-Methylphenol (p-Cresol)	NE	3.50	182									
Acenaphthene	NE	80.0	365									
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80									
Caprolactam	NE	3,500	18,250									
Carbazole	NE	NE	3.36									
Dibenzofuran	NE	NE	12.2									
Di-n-butyl Phthalate (DBP)	NE	700	3,650									
Fluorene	NE	280	243									
Naphthalene	NE	21.0	6.20									
Phenanthrene	NE	210	183 [5]									
Phenol	NE	300	10,950									
Total Metals (ug/L)												
Arsenic	13.8	10.0	0.0448									
Barium	35.3	2,000	2,555									

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Notes:

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RFI INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	Base Background Lowermost Surficial	North Carolina 2L Standards	USEPA Region IX Tap Water PRGs	SWMU318-GW45-01	SWMU318-GW46-01	SWMU318-GW47-01	SWMU318-GW48-01	SWMU318-GW49-01	SWMU318-GW49-01D	SWMU318-GW50-01	SWMU318-GW51-01
Sample Date				2/3/2005	2/6/2005	2/6/2005	2/5/2005	2/6/2005	2/6/2005	2/6/2005	2/7/2005
Sample Depth (ft bgs)				22-26	24-28	24-28	24-28	24-28	24-28	24-28	24-28
Volatile Organic Compounds (ug/L)											
1,1,2-Trichloro-1,2,2-trifluoroethane	NE	210,000	59,180								10 U
1,1-Dichloroethane	NE	700	811								1 J
1,1-Dichloroethene	NE	7.00	339								1 J
1,2-Dichlorobenzene (o-)	NE	620	370								10 U
1,2-Dichloroethane	NE	0.380	0.123								10 U
1,2-Dichloroethene (cis)	NE	70.0	60.8								7 J
1,2-Dichloroethene (total)	NE	70.0 [1]	60.8 [1]								7 J
1,2-Dichloroethene (trans)	NE	70.0	122								10 U
1,3-Dichlorobenzene (m-)	NE	620	183								10 U
Acetone	NE	700	5,475								10 U
Benzene	NE	1.00	0.354								4 J
Carbon Disulfide	NE	700	1,043								10 U
Chlorobenzene	NE	50.0	106								10 U
Chloroform	NE	0.190	0.166								10 U
Cyclohexane	NE	NE	10,342								10 U
Dichlorodifluoromethane	NE	1,400	395								10 U
Ethylbenzene	NE	29.0	1,340								10 U
Isopropylbenzene (Cumene)	NE	70.0	658								10 U
Methyl Cyclohexane	NE	NE	5,217								10 U
Methyl Tert-Butyl Ether (MTBE)	NE	200	11.0								10 U
Toluene	NE	1,000	723								10 U
Trichloroethene (TCE)	NE	2.80	0.0280								4 J
Vinyl Chloride	NE	0.0150	0.0198								10 U
Xylene, m/p-	NE	530 [2]	206 [2]								10 U
Xylene, o-	NE	530 [2]	206 [2]								10 U
Xylenes, total	NE	530	206								10 U
Semivolatile Organic Compounds (ug/L)											
1,1'-Biphenyl	NE	350	304								NA
2,4-Dimethylphenol	NE	140	730								NA
2-Methylnaphthalene	NE	14.0	6.20 [3]								NA
2-Methylphenol (o-Cresol)	NE	3.50 [4]	1,825								NA
4-Methylphenol (p-Cresol)	NE	3.50	182								NA
Acenaphthene	NE	80.0	365								NA
Bis(2-ethylhexyl) Phthalate (BEHP)	NE	3.00	4.80								NA
Caprolactam	NE	3,500	18,250								NA
Carbazole	NE	NE	3.36								NA
Dibenzofuran	NE	NE	12.2								NA
Di-n-butyl Phthalate (DBP)	NE	700	3,650								NA
Fluorene	NE	280	243								NA
Naphthalene	NE	21.0	6.20								NA
Phenanthrene	NE	210	183 [5]								NA
Phenol	NE	300	10,950								NA
Total Metals (ug/L)											
Arsenic	13.8	10.0	0.0448								NA
Barium	35.3	2,000	2,555								NA

SAMPLE NOT SELECTED FOR FIXED BASE LABORATORY ANALYSIS.

Notes:

Bolded values exceed base background concentrations for lowermost surficial water bearing unit.
Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NE - Not Established.
NA - Not Applicable.
U - Not Detected
J - Analyte detected. Reported value is estimated.
D - Sample Diluted. Result reported is the concentration after c
UJ - Not detected. Reported value is estimated.

[1] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.
[2] Based on professional judgement, value used is for total xylenes as a surrogate compound.
[3] Based on professional judgement, value used is for naphthalene as a surrogate compound.
[4] Based on professional judgement, value used is for p-cresol as a surrogate compound.
[5] Based on professional judgement, value used is for pyrene as a surrogate compound.

TABLE 4-14
FIXED BASE LABORATORY DETECTIONS SUMMARY
RFI DEEP GROUNDWATER ANALYTICAL RESULTS, SWMUs 303/318 AND IR SITE 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	North Carolina	USEPA Region IX	86-GW17IW-05A	86-GW20IW-05A	86-GW21IW-05A	86-GW22IW-05A	SWMU318-MW04DW-05A	SWMU318-MW05DW-05A	SWMU318-MW05DW-05AD	SWMU318-MW06DW-05A
Sample Date	2L Standards	Tap Water PRGs	2/17/2005	2/16/2005	2/17/2005	2/17/2005	2/19/2005	2/20/2005	2/20/2005	2/19/2005
Sample Depth (ft bgs)			45-55	50-55	44-54	54-64	40-45	40-45	40-45	40-45
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethene	7.00	339	10 U	10 U	3 J	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (cis)	70.0	60.8	10 U	8 J	99	10 U	12	10 U	10 U	4 J
1,2-Dichloroethene (total)	70.0 [1]	60.8 [1]	10 U	8 J	140	10 U	12	10 U	10 U	4 J
1,2-Dichloroethene (trans)	70.0	122	10 U	10 U	42	10 U	10 U	10 U	10 U	10 U
Benzene	1.00	0.354	10 U	10 U	1 J	10 U	1 J	10 U	10 U	6 J
Chloroform	0.190	0.166	10 U	10 U	10 U	10 U	10 U	2 J	2 J	1 J
Ethylbenzene	29.0	1,340	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J
Trichloroethene (TCE)	2.80	0.0280	10 U	46	17	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	0.0150	0.0198	10 U	10 U	12	1 J	28	10 U	10 U	1 J
Total Metals (ug/L)										
Barium	2,000	2,555	17.5 J	9.8 J	9.9 J	4.2 U	18.1 J	15.9 J	NA	12.3 J

Notes:

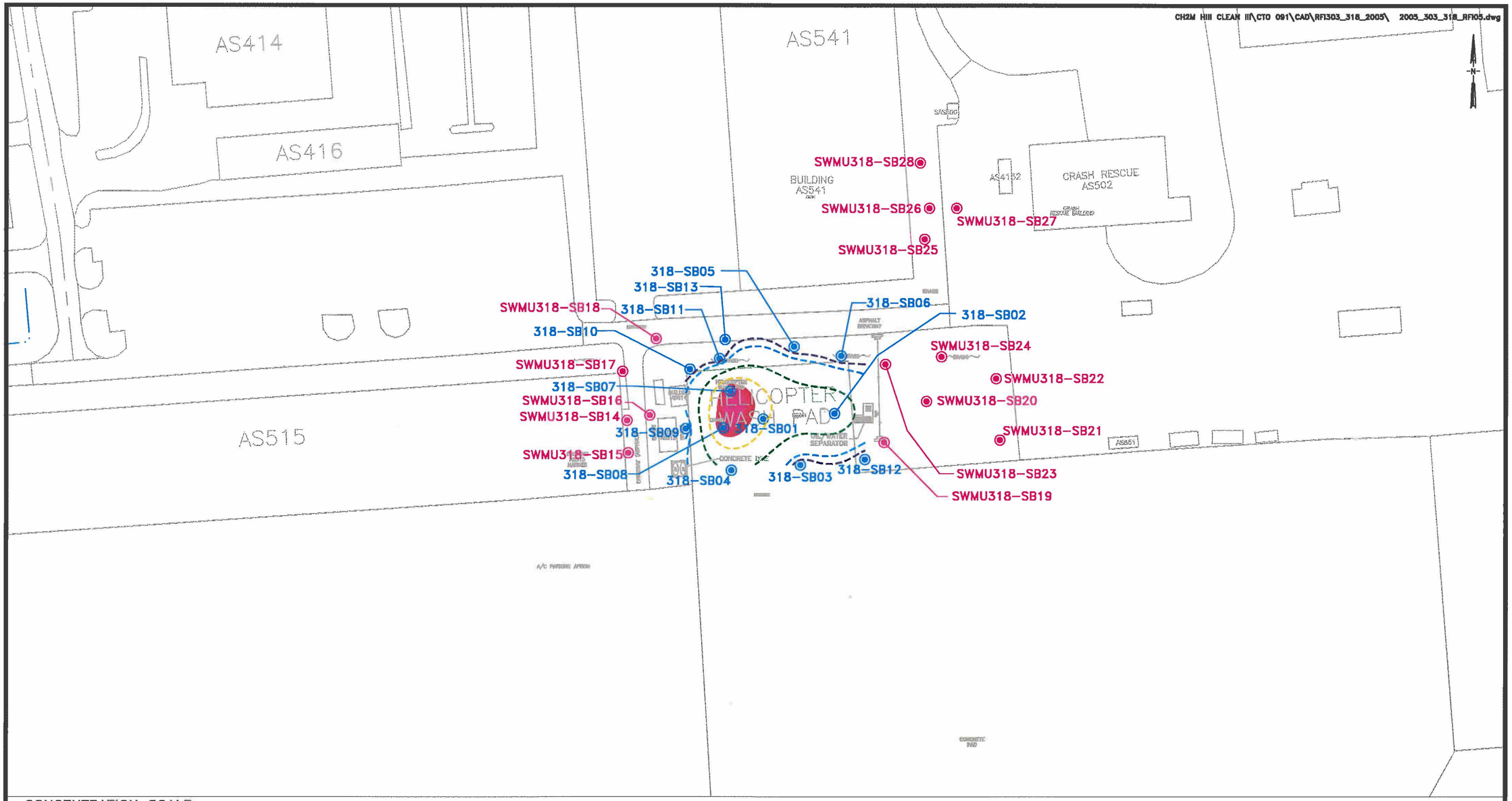
Underlined values exceed North Carolina 2L Groundwater Protection Standards.
Boxed values exceed USEPA Region IX Tap Water PRGs.

NA - Not Analyzed.
U - Not Detected
J - Analyte detected. Reported value is estimated.

[1] Based on professional judgement, value used is for 1,2-dichloroethene (cis) as a surrogate compound.

Samples reported on this table were selected for fixed base laboratory analysis. Please note that all other deep groundwater grab samples (SWMU318-GW01-02 through SWMU318-GW51-02) were analyzed by a mobile laboratory and are reported on the mobile laboratory analytical results table.

FIGURES



CONCENTRATION SCALE

- 10,000 ppb
- 4,310 ppb (NC Soil-to-Groundwater)
- 1,000 ppb
- 100 ppb
- 10 ppb
- 5.4 ppb (Detection Limit)

SOURCE: MCB CAMP LEJEUNE, 2000.

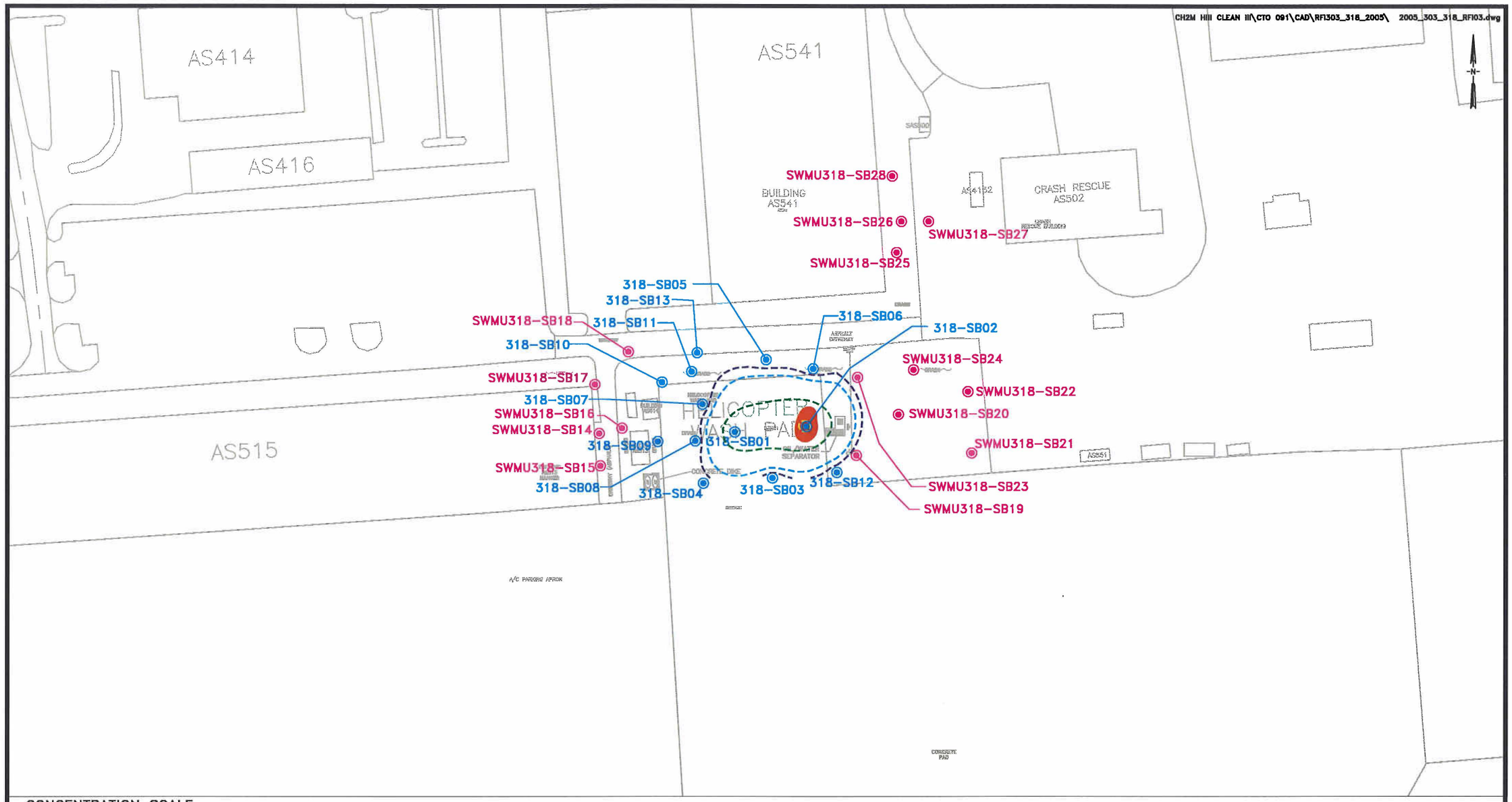
100 0 50 100
1 inch = 100 ft.

Baker

LEGEND

- ◉ – PHASE I RFI SOIL BORING LOCATION
- ◉ – PHASE III RFI SOIL BORING LOCATION

FIGURE 4-1
BUTYLBENZENE CONCENTRATIONS
IN SURFACE SOIL (0'-1')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



CONCENTRATION SCALE

- 10,000 ppb
- 1,680 ppb (NC Soil-to-Groundwater)
- 1,000 ppb
- 100 ppb
- 10 ppb
- 5.4 ppb (Detection Limit)

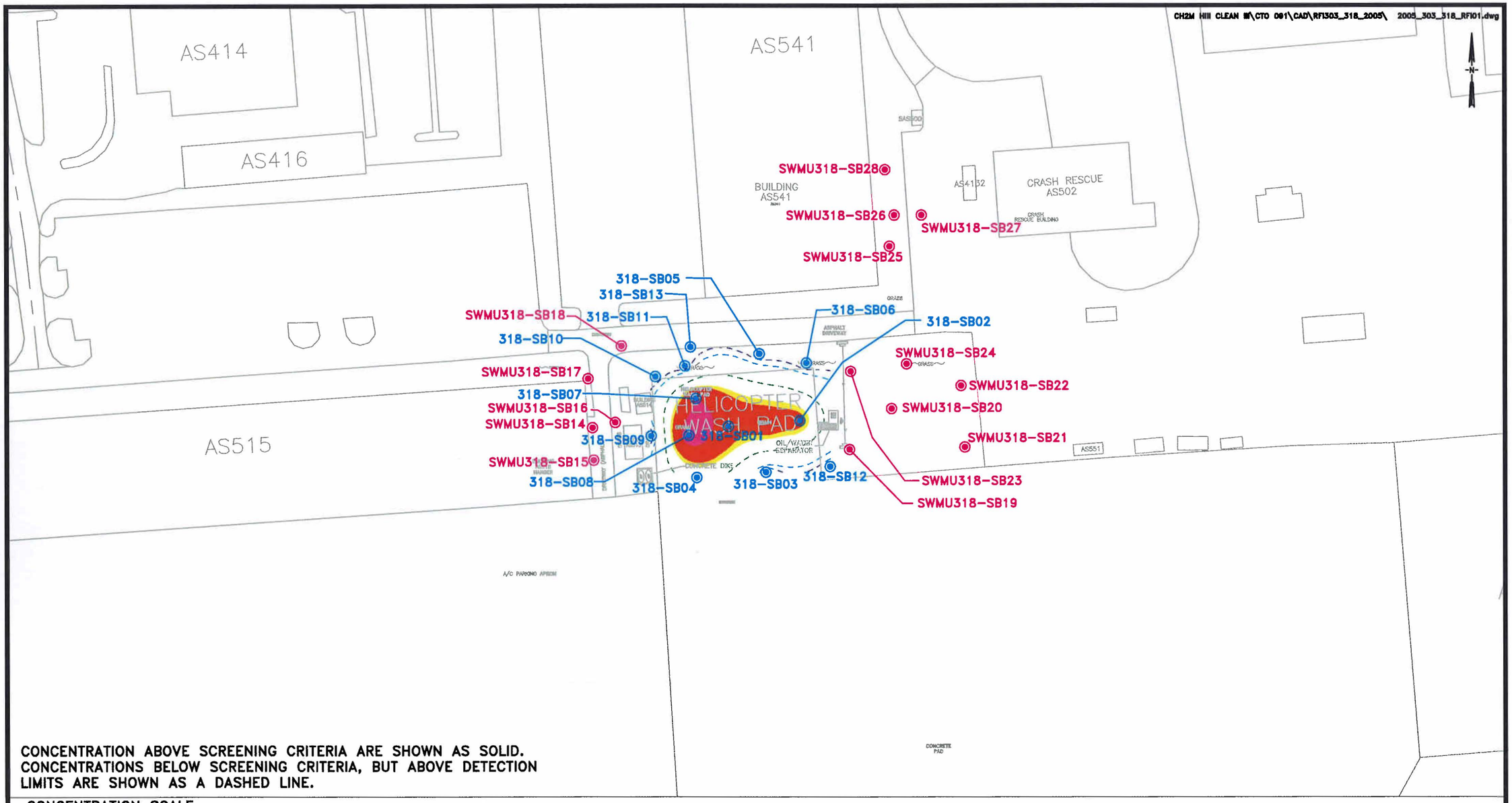
SOURCE: MCB CAMP LEJEUNE, 2000.

LEGEND

- – PHASE I RFI SOIL BORING LOCATION
- – PHASE III RFI SOIL BORING LOCATION

Baker

FIGURE 4-2
ISOPROPYLBENZENE CONCENTRATIONS IN SURFACE SOIL (0'-1')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE NORTH CAROLINA



CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID.
CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 10,000 ppb
- 1,000 ppb
- 585 ppb (NC Soil-to-Groundwater)
- 100 ppb
- 10 ppb
- 5.4 ppb (Detection Limit)

SOURCE: MCB CAMP LEJEUNE, 2000.

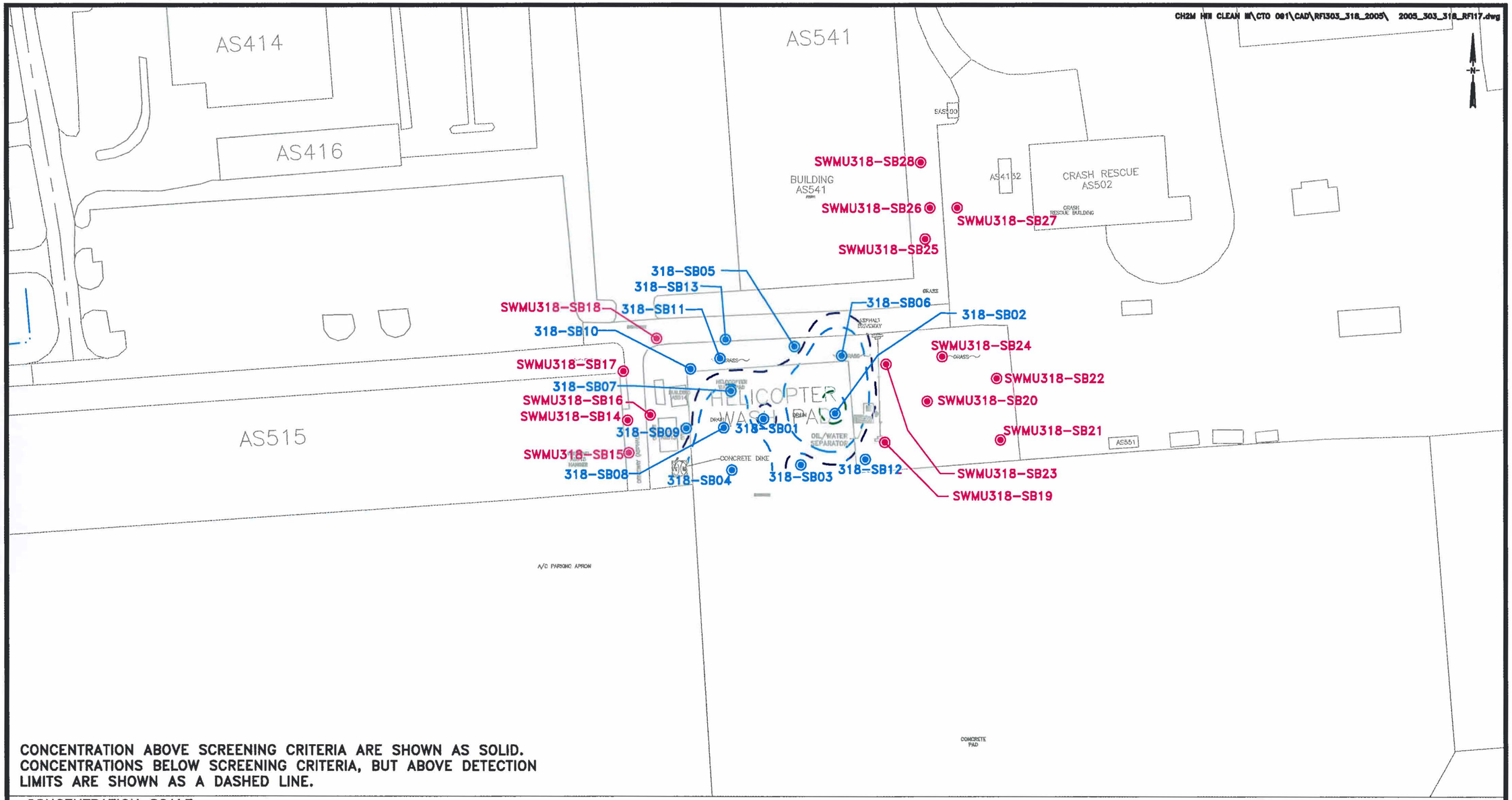
100 0 50 100
1 inch = 100 ft.

Baker

LEGEND

- – PHASE I RFI SOIL BORING LOCATION
- – PHASE III RFI SOIL BORING LOCATION

FIGURE 4–3
NAPHTHALENE CONCENTRATIONS
IN SURFACE SOIL (0–1')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



Baker

FIGURE 4–4
NAPHTHALENE CONCENTRATIONS IN INTERMEDIATE SUBSURFACE SOIL (2'–4')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

CH2M HILL CLEAN IV\CTO 091\CAD\RFI303_318_2005\ 2005_303_318_RFI02.dwg

AS414

AS416

AS541

AS515

BUILDING AS541

AS4132

CRASH RESCUE AS502

HELICOPTER PAD

A/C PARKING APRON

SWMU318-SB28
SWMU318-SB26
SWMU318-SB27
SWMU318-SB25
318-SB05
318-SB13
318-SB11
SWMU318-SB18
318-SB10
318-SB06
318-SB02
SWMU318-SB24
SWMU318-SB17
318-SB07
SWMU318-SB16
SWMU318-SB14
318-SB09
318-SB01
SWMU318-SB22
SWMU318-SB20
SWMU318-SB21
SWMU318-SB15
318-SB08
318-SB04
318-SB03
318-SB12
SWMU318-SB23
SWMU318-SB19

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID. CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 10,000 ppb
- 1,000 ppb
- 585 ppb (NC Soil-to-Groundwater)
- 100 ppb
- 10 ppb
- 5.4 ppb (Detection Limit)

SOURCE: MCB CAMP LEJEUNE, 2000.

100 0 50 100
1 inch = 100 ft.

LEGEND

- – PHASE I RFI SOIL BORING LOCATION
- – PHASE III RFI SOIL BORING LOCATION

FIGURE 4-5
NAPHTHALENE CONCENTRATIONS IN DEEP SUBSURFACE SOIL (6'-8')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

2005_303_318_GW_rf107.dwg

NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID. CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 10 ppb
- Detection Limit (2ppb)

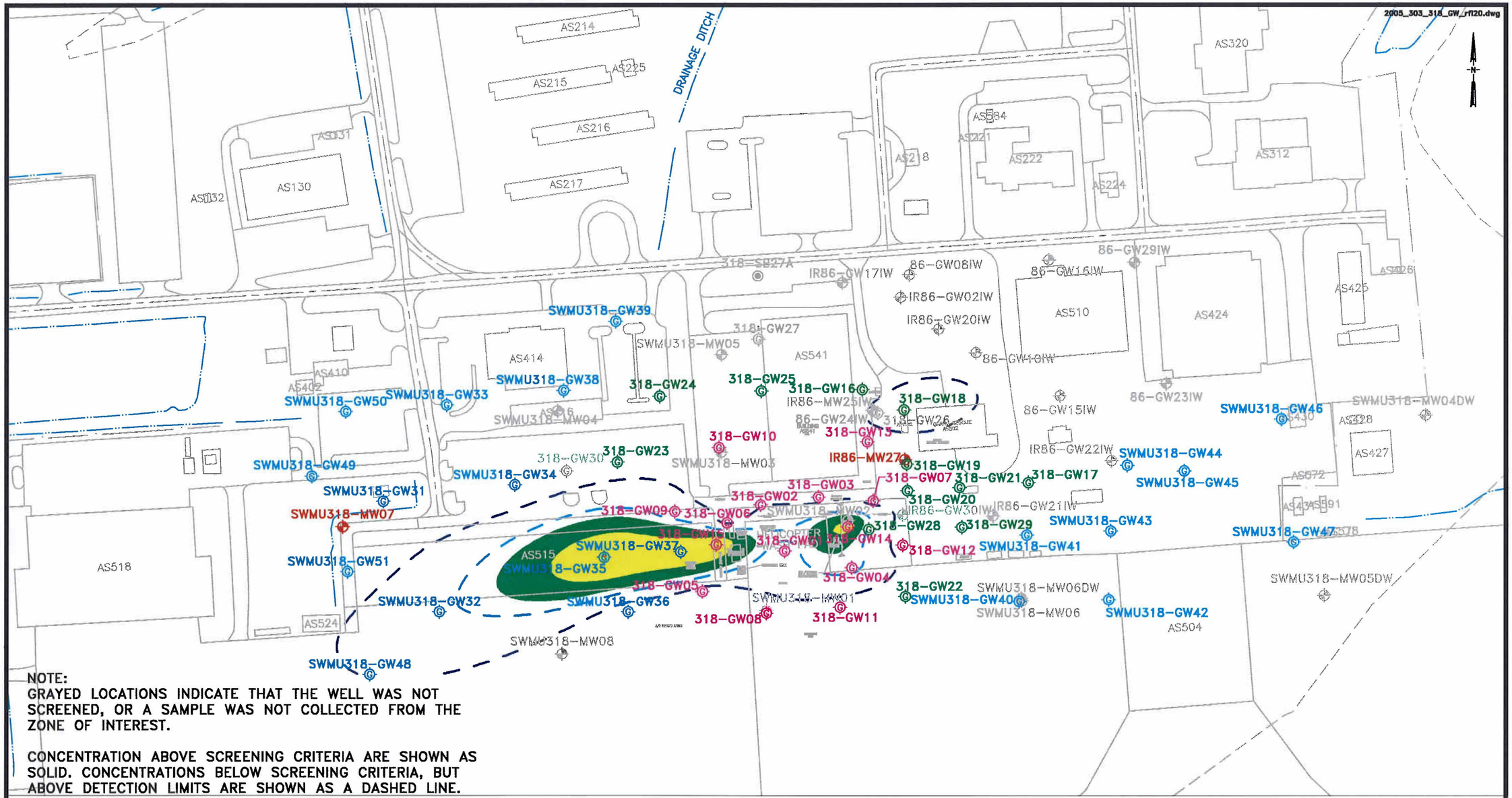
200 0 100 200
1 inch = 200 ft.

LEGEND

- – PHASE I RFI GROUNDWATER GRAB LOCATION
- – PHASE II RFI GROUNDWATER GRAB LOCATION
- – PHASE III RFI GROUNDWATER GRAB LOCATION
- – MONITORING WELL LOCATION

SOURCE: MCB CAMP LEJEUNE MARCH 2000

FIGURE 4-6
BENZENE CONCENTRATIONS IN SHALLOW GROUNDWATER (10'–14')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID. CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 2L Standard (21 ppb)
- 10 ppb
- Detection Limit (2ppb)

SOURCE: MCB CAMP LEJEUNE MARCH 2000

LEGEND

- ⊙ – PHASE I RFI GROUNDWATER GRAB LOCATION
- ⊙ – PHASE II RFI GROUNDWATER GRAB LOCATION
- ⊙ – PHASE III RFI GROUNDWATER GRAB LOCATION
- ⊙ – MONITORING WELL LOCATION

FIGURE 4-7
NAPHTHALENE CONCENTRATIONS IN SHALLOW GROUNDWATER (10'-14')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

2005_303_318_GW_rf18.dwg

NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID. CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE
- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 2L Standard (2.8ppb)
- Detection Limit (2ppb)

SOURCE: MCB CAMP LEJEUNE MARCH 2000

200 0 100 200
1 inch = 200 ft.

LEGEND
- PHASE I RFI GROUNDWATER GRAB LOCATION
- PHASE II RFI GROUNDWATER GRAB LOCATION
- PHASE III RFI GROUNDWATER GRAB LOCATION
- MONITORING WELL LOCATION

FIGURE 4-8
TCE CONCENTRATIONS IN SHALLOW GROUNDWATER (10'-14')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO - 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

2005_303_318_GW_rfi14.dwg

AS214
AS215
AS216
AS217
AS225
DRAINAGE DITCH
AS320
AS312
AS231
AS232
AS130
AS218
AS221
AS222
AS224
AS425
AS426
AS510
AS424
AS414
AS410
AS402
AS541
AS428
AS427
AS672
AS430
AS518
AS515
AS524
AS504

318-SB27A
IR86-GW17IW
86-GW08IW
IR86-GW02IW
IR86-GW20IW
86-GW16IW
86-GW29IW
86-GW10IW
86-GW15IW
86-GW23IW
IR86-GW22IW
IR86-GW21IW
IR86-GW30IW
SWMU318-GW39
SWMU318-MW05
318-GW27
SWMU318-GW38
318-GW24
318-GW25
318-GW16
318-GW18
SWMU318-GW33
SWMU318-GW50
SWMU318-MW04
IR86-MW25IW
86-GW24IW
318-GW26
318-GW10
318-GW13
IR86-MW27D
318-GW19
318-GW07
318-GW21
318-GW17
SWMU318-GW46
SWMU318-MW04DW
SWMU318-GW44
SWMU318-GW45
318-GW30
318-GW25
SWMU318-MW03
SWMU318-GW34
SWMU318-GW49
SWMU318-GW31
318-GW03
318-GW02
318-GW20
318-GW09
318-GW06
SWMU318-MW02
318-GW28
318-GW29
SWMU318-GW43
SWMU318-GW47
SWMU318-MW07
318-GW01
318-GW14
318-GW12
SWMU318-GW41
SWMU318-GW37
318-GW04
SWMU318-GW51
SWMU318-GW35
318-GW22
SWMU318-GW40
SWMU318-MW06DW
SWMU318-MW05DW
318-GW05
SWMU318-GW32
SWMU318-GW36
SWMU318-MW01
318-GW08
318-GW11
SWMU318-MW06
SWMU318-GW42
SWMU318-MW08
SWMU318-GW48

NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID.
CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 2L Standard (70 ppb)
- 10 ppb
- Detection Limit (2ppb)

SOURCE: MCB CAMP LEJEUNE MARCH 2000

200 0 100 200
1 inch = 200 ft.

Baker

LEGEND

- – PHASE I RFI GROUNDWATER GRAB LOCATION
- – PHASE II RFI GROUNDWATER GRAB LOCATION
- – PHASE III RFI GROUNDWATER GRAB LOCATION
- – MONITORING WELL LOCATION

FIGURE 4-9
CIS-DCE CONCENTRATIONS IN SHALLOW GROUNDWATER (10'-14')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO - 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

2005_303_318_GW_r113.dwg

AS214
AS215
AS225
AS216
AS217
DRAINAGE DITCH
AS320
AS584
AS221
AS218
AS222
AS224
AS312
AS131
AS132
AS130
318-SB27A
IR86-GW17IW
86-GW08IW
86-GW29IW
86-GW16IW
IR86-GW02IW
IR86-GW20IW
AS510
AS424
AS425
AS426
SWMU318-GW39
318-GW27
SWMU318-MW05
AS541
AS414
AS410
AS402
SWMU318-GW38
318-GW24
318-GW25
318-GW16
318-GW18
SWMU318-GW33
SWMU318-GW50
IR86-MW25IW
86-GW24IW
318-GW26
86-GW10IW
86-GW15IW
86-GW23IW
SWMU318-GW46
SWMU318-MW04DW
AS430
AS428
SWMU318-MW04
318-GW10
318-GW13
IR86-MW27I
IR86-GW22IW
SWMU318-GW44
AS427
318-GW30
318-GW23
SWMU318-MW03
318-GW19
SWMU318-GW49
SWMU318-GW34
318-GW07
318-GW21
318-GW17
SWMU318-GW45
AS672
318-GW03
SWMU318-GW31
318-GW02
318-GW20
AS434
AS591
318-GW09
318-GW06
SWMU318-MW02
IR86-GW30IW
IR86-GW21IW
SWMU318-MW07
318-GW28
318-GW29
SWMU318-GW43
318-GW15
SWMU318-GW47
AS578
318-GW01
318-GW14
318-GW12
SWMU318-GW41
SWMU318-GW37
AS515
AS518
SWMU318-GW35
318-GW04
SWMU318-MW05DW
318-GW05
318-GW22
SWMU318-MW06DW
SWMU318-GW32
SWMU318-GW36
SWMU318-MW01
SWMU318-GW40
SWMU318-GW42
318-GW08
318-GW11
SWMU318-MW06
AS524
AS504
SWMU318-MW08
SWMU318-GW48

NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID. CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 10 ppb
- Detection Limit (2ppb)

200 0 100 200
1 inch = 200 ft.

SOURCE: MCB CAMP LEJEUNE MARCH 2000

LEGEND

- – PHASE I RFI GROUNDWATER GRAB LOCATION
- – PHASE II RFI GROUNDWATER GRAB LOCATION
- – PHASE III RFI GROUNDWATER GRAB LOCATION
- – MONITORING WELL LOCATION

FIGURE 4-10
VINYL CHLORIDE CONCENTRATIONS IN SHALLOW GROUNDWATER (10'-14')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

3091501S

NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID. CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 10 ppb
- Detection Limit (2 ppb)

SOURCE: MCB, CAMP LEJEUNE, MARCH 2000.

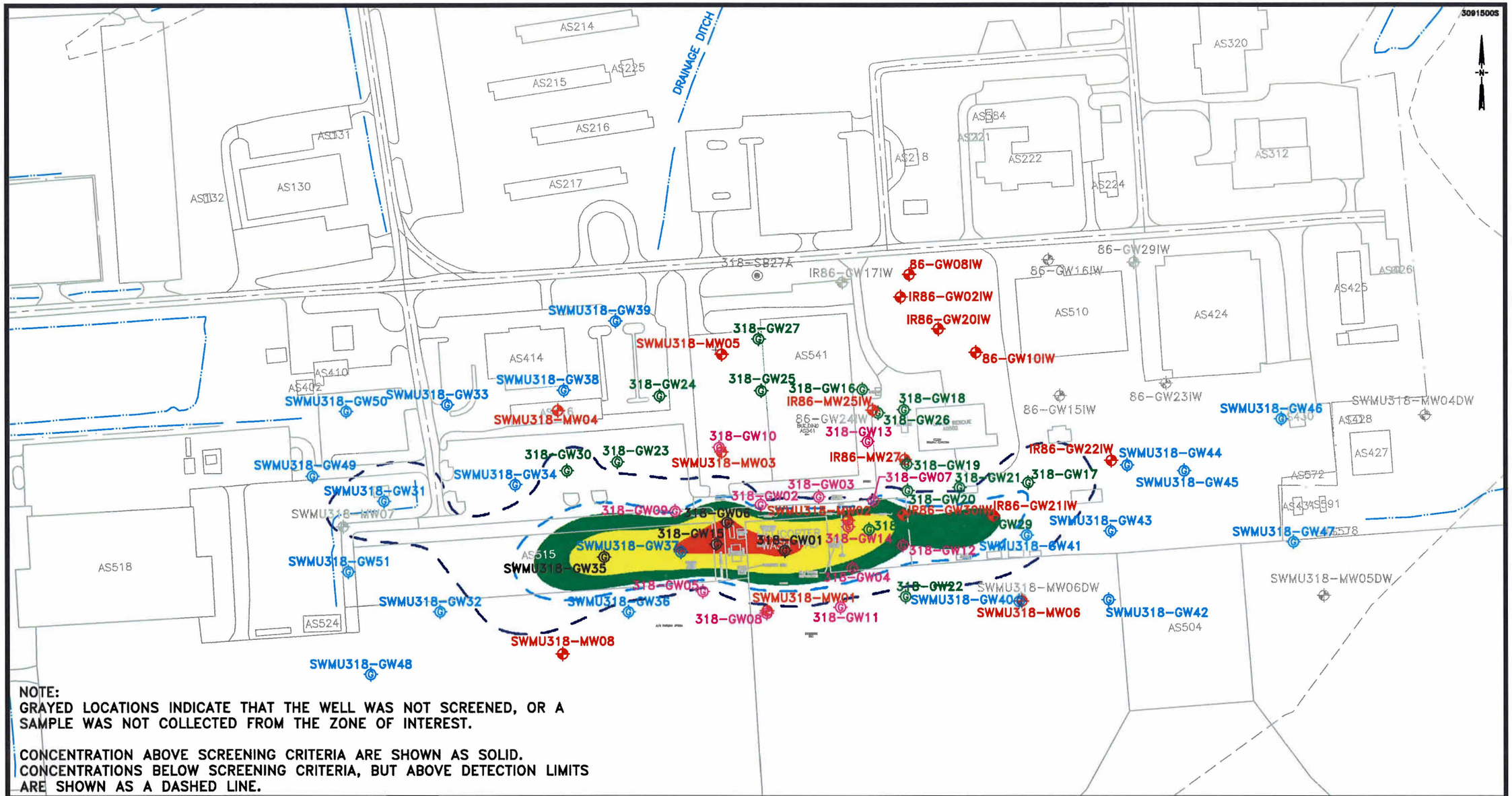
200 0 100 200
1 inch = 200 ft.

Baker

LEGEND

- – PHASE I RFI GROUNDWATER GRAB LOCATION
- – PHASE II RFI GROUNDWATER GRAB LOCATION
- – PHASE III RFI GROUNDWATER GRAB LOCATION
- – MONITORING WELL LOCATION

FIGURE 4–11
BENZENE CONCENTRATIONS IN INTERMEDIATE GROUNDWATER (25'–34')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID. CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 2L Standard (21 ppb)
- 10 ppb
- Detection Limit (2 ppb)

SOURCE: MCB, CAMP LEJEUNE, MARCH 2000.

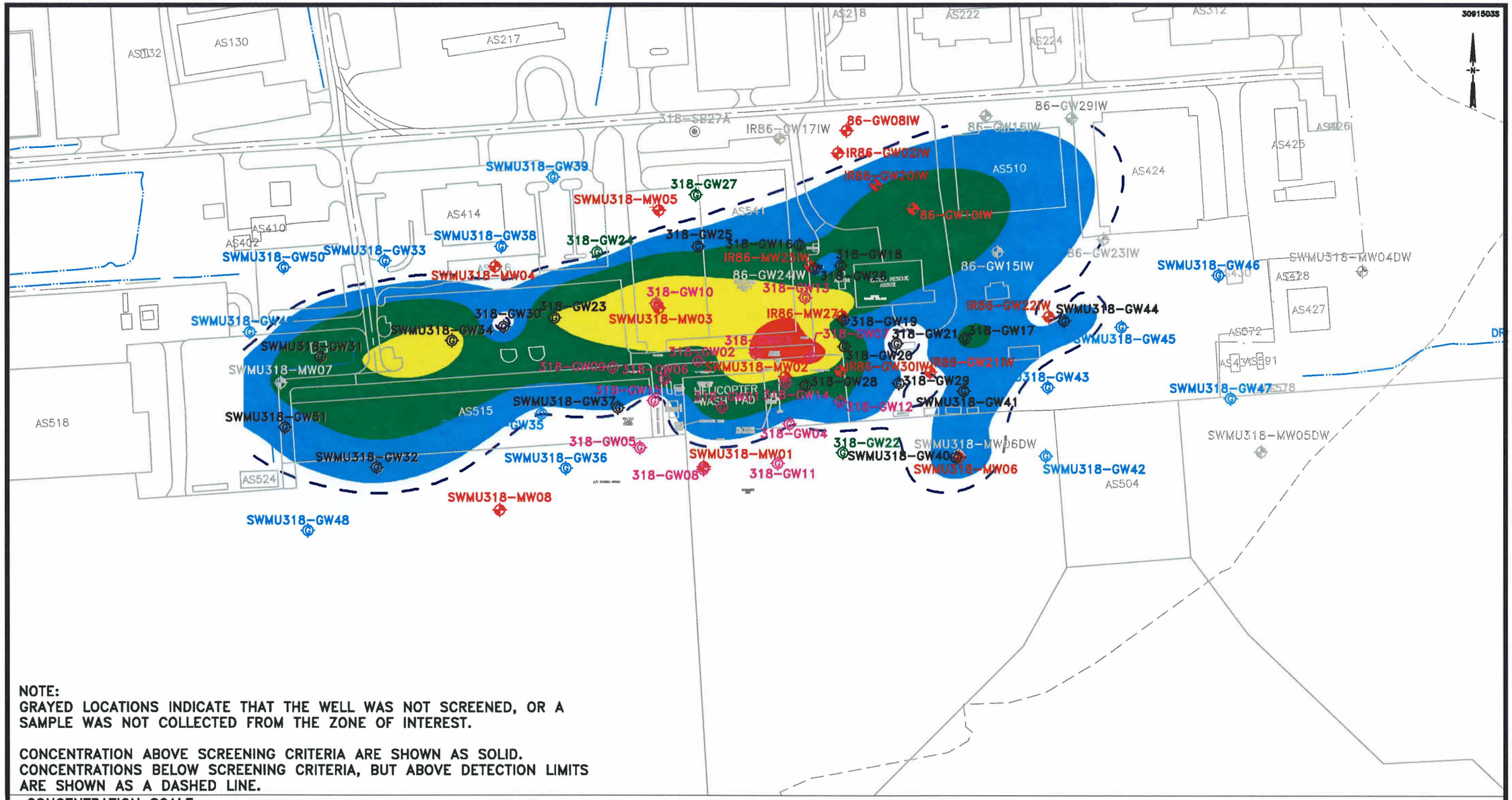
200 0 100 200
1 inch = 200 ft.

Baker

LEGEND

- – PHASE I RFI GROUNDWATER GRAB LOCATION
- – PHASE II RFI GROUNDWATER GRAB LOCATION
- – PHASE III RFI GROUNDWATER GRAB LOCATION
- – MONITORING WELL LOCATION

FIGURE 4-12
NAPHTHALENE CONCENTRATIONS IN INTERMEDIATE GROUNDWATER (25'-34')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID. CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 10 ppb
- 2L Standard (2.8 ppb)
- Detection Limit (2 ppb)

SOURCE: MCB, CAMP LEJEUNE, MARCH 2000.

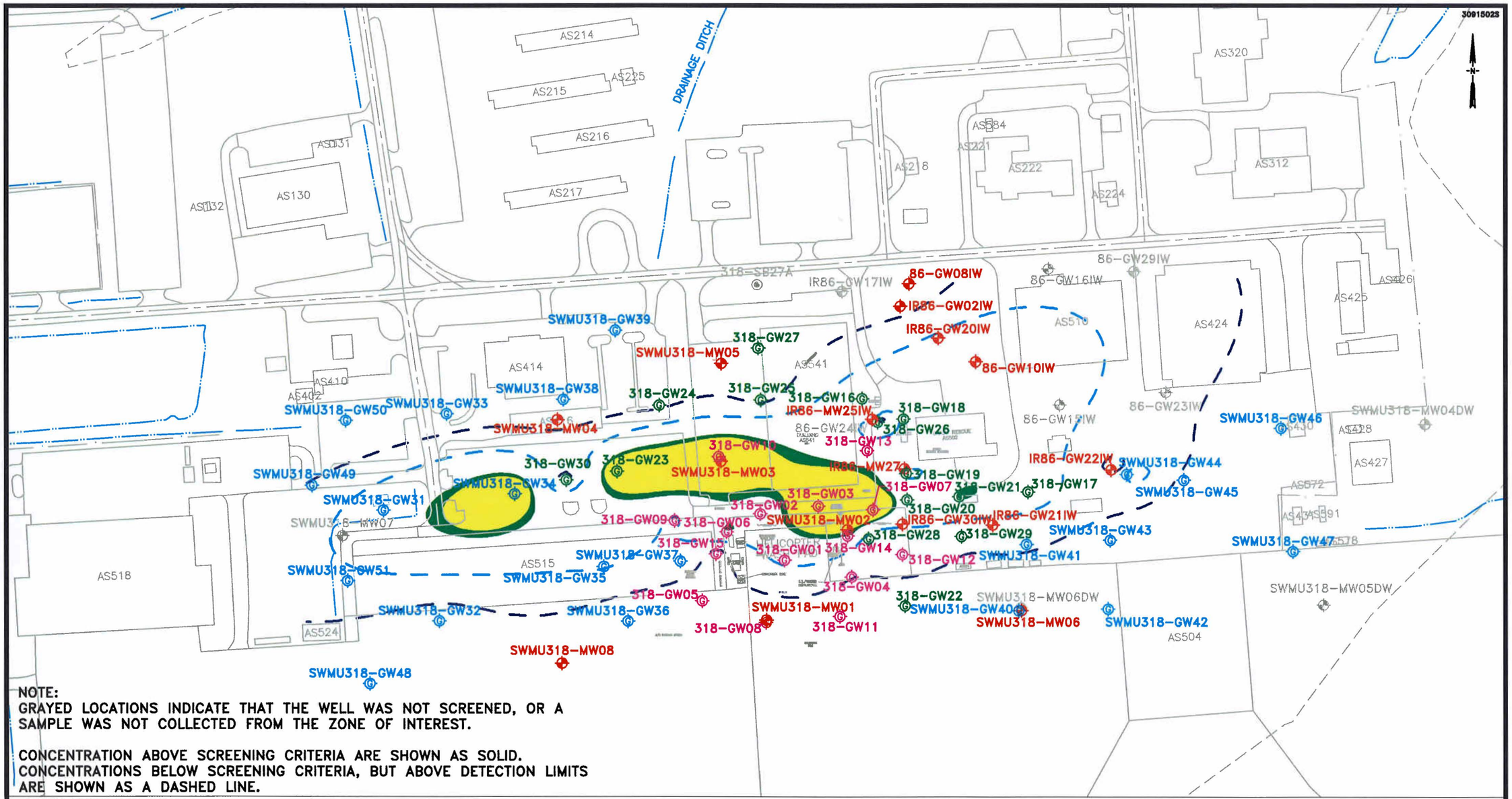
200 0 100 200
1 inch = 200 ft.

Baker

LEGEND

- PHASE I RFI GROUNDWATER GRAB LOCATION
- PHASE II RFI GROUNDWATER GRAB LOCATION
- PHASE III RFI GROUNDWATER GRAB LOCATION
- MONITORING WELL LOCATION

FIGURE 4-13
TCE CONCENTRATIONS IN INTERMEDIATE GROUNDWATER (25'-34')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO - 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID. CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 2L Standard (70 ppb)
- 10 ppb
- Detection Limit (2 ppb)

SOURCE: MCB, CAMP LEJEUNE, MARCH 2000.

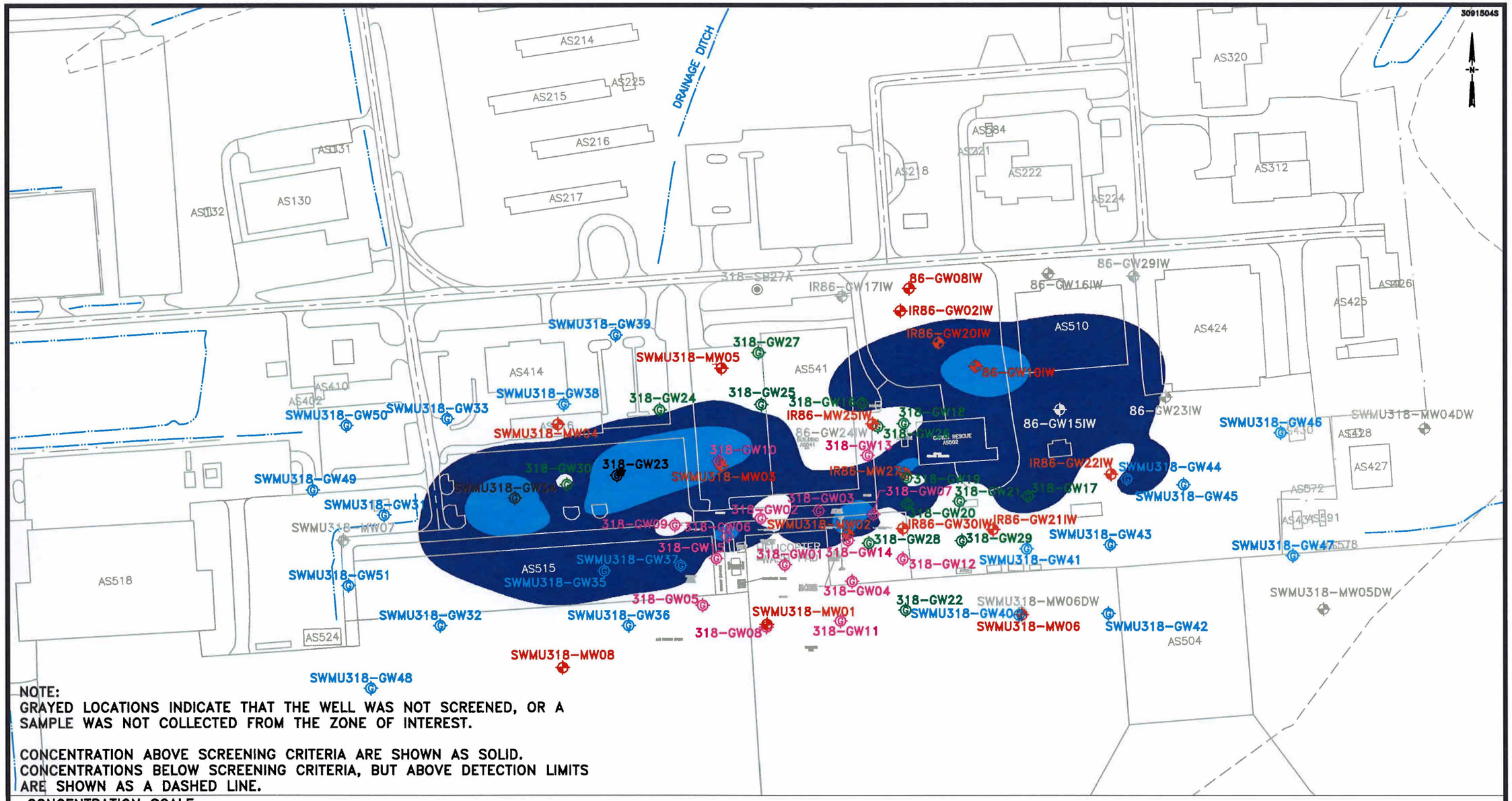
LEGEND

- – PHASE I RFI GROUNDWATER GRAB LOCATION
- – PHASE II RFI GROUNDWATER GRAB LOCATION
- – PHASE III RFI GROUNDWATER GRAB LOCATION
- – MONITORING WELL LOCATION

200 0 100 200
1 inch = 200 ft.

Baker

FIGURE 4-14
CIS-1,2-DCE CONCENTRATIONS IN INTERMEDIATE GROUNDWATER (25'-34')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO - 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID.
CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 10 ppb
- Detection Limit (2 ppb)

SOURCE: MCB, CAMP LEJEUNE, MARCH 2000.

200 0 100 200
1 inch = 200 ft.

Baker

LEGEND

- ⊙ – PHASE I RFI GROUNDWATER GRAB LOCATION
- ⊙ – PHASE II RFI GROUNDWATER GRAB LOCATION
- ⊙ – PHASE III RFI GROUNDWATER GRAB LOCATION
- ⊕ – MONITORING WELL LOCATION

FIGURE 4-15
VINYL CHLORIDE CONCENTRATIONS IN INTERMEDIATE GROUNDWATER (25'-34')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO - 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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AS214 AS215 AS216 AS217 AS225 DRAINAGE DITCH AS131 AS132 AS130 AS320 AS584 AS221 AS218 AS222 AS224 AS312 AS426 AS425 AS424 AS510 AS414 AS410 AS402 AS516 AS541 AS430 AS428 AS427 AS672 AS691 AS518 AS515 AS524 AS504

318-SB27A IR86-GW17IW 86-GW08IW 86-GW16IW 86-GW29IW IR86-GW02IW IR86-GW20IW 86-GW10IW 86-GW15IW 86-GW23IW SWMU318-GW45 SWMU318-GW46 SWMU318-MW04DW SWMU318-GW44 IR86-GW22IW SWMU318-GW43 SWMU318-GW47 SWMU318-MW05DW SWMU318-GW41 SWMU318-MW06DW SWMU318-GW42 SWMU318-GW40 SWMU318-GW39 SWMU318-GW38 SWMU318-GW33 SWMU318-GW50 SWMU318-GW49 SWMU318-GW31 SWMU318-GW34 SWMU318-GW51 SWMU318-GW32 SWMU318-GW36 SWMU318-GW48 SWMU318-GW37 SWMU318-GW35 SWMU318-MW07 SWMU318-MW03 SWMU318-MW02 SWMU318-MW01 SWMU318-MW08 318-GW27 318-GW25 318-GW16 318-GW18 318-GW24 318-GW26 318-GW13 318-GW10 318-GW23 318-GW30 318-GW19 318-GW07 318-GW21 318-GW17 318-GW03 318-GW02 318-GW20 318-GW09 318-GW06 318-GW28 318-GW29 318-GW01 318-GW14 318-GW12 318-GW04 318-GW22 318-GW05 318-GW08 318-GW11

IR86-MW25IW 86-GW24IW IR86-MW27D IR86-GW30IW IR86-GW21IW

NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID. CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 10 ppb
- Detection Limit (2ppb)

200 0 100 200
1 inch = 200 ft.

LEGEND

- – PHASE I RFI GROUNDWATER GRAB LOCATION
- – PHASE II RFI GROUNDWATER GRAB LOCATION
- – PHASE III RFI GROUNDWATER GRAB LOCATION
- – MONITORING WELL LOCATION

SOURCE: MCB CAMP LEJEUNE MARCH 2000

FIGURE 4-16
BENZENE CONCENTRATIONS IN DEEP GROUNDWATER (40'-44')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO - 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID.
CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 2L Standard (21 ppb)
- 10 ppb
- Detection Limit (2ppb)

SOURCE: MCB CAMP LEJEUNE MARCH 2000

200 0 100 200
1 inch = 200 ft.

LEGEND

- – PHASE I RFI GROUNDWATER GRAB LOCATION
- – PHASE II RFI GROUNDWATER GRAB LOCATION
- – PHASE III RFI GROUNDWATER GRAB LOCATION
- – MONITORING WELL LOCATION

FIGURE 4-17
NAPHTHALENE CONCENTRATIONS IN DEEP GROUNDWATER (40-44')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

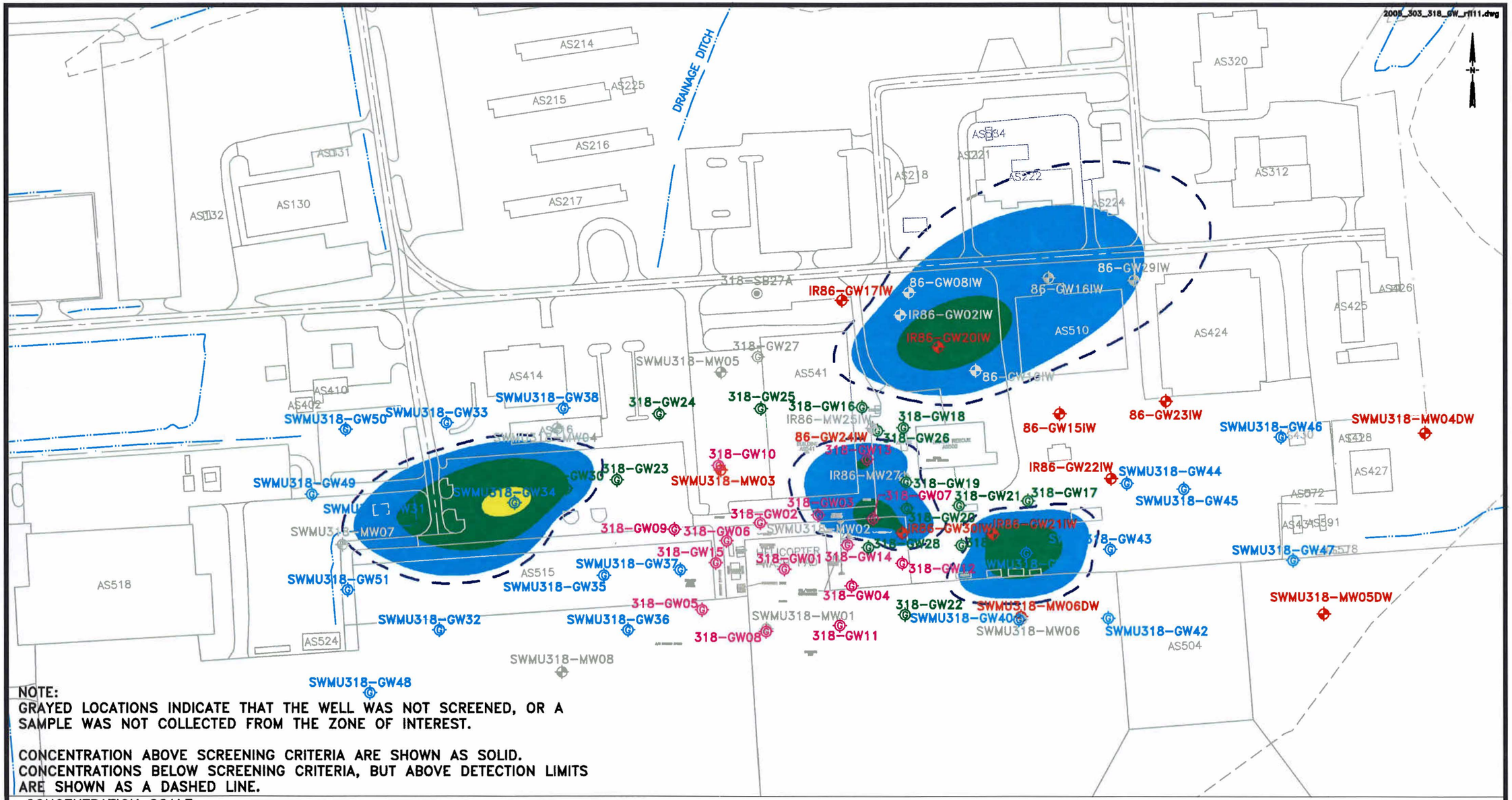

FIGURE 4-18
TCE CONCENTRATIONS IN DEEP GROUNDWATER (40-44')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO - 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

2005_303_318_GW_rfi10.dwg

DRAINAGE DITCH

AS214 AS215 AS216 AS217 AS225 AS131 AS132 AS130 AS218 AS221 AS222 AS224 AS320 AS312 AS425 AS426 AS424 AS510 AS541 AS414 AS410 AS402 AS408 AS428 AS427 AS572 AS581 AS518 AS515 AS524 AS504

318-SB27A

IR86-GW17IW IR86-GW08IW IR86-GW02IW IR86-GW20IW 86-GW29IW 86-GW16IW 86-GW10IW 86-GW15IW 86-GW23IW

318-GW27 SWMU318-MW05 SWMU318-GW38 318-GW24 318-GW25 318-GW16 318-GW18 SWMU318-GW33 SWMU318-GW50 SWMU318-MW04 86-GW24IW 318-GW26 318-GW13 318-GW10 318-GW23 318-GW30 SWMU318-MW03 IR86-GW22IW SWMU318-GW44 SWMU318-GW46 SWMU318-MW04DW

318-GW19 318-GW07 318-GW21 318-GW17 SWMU318-GW45 318-GW03 318-GW02 318-GW20 SWMU318-MW02 IR86-GW30IW IR86-GW21IW SWMU318-GW49 SWMU318-GW34 SWMU318-GW31 SWMU318-MW07 318-GW09 318-GW06 318-GW28 SWMU318-GW43 SWMU318-GW47 318-GW15 318-GW01 318-GW14 318-GW12 SWMU318-GW41 SWMU318-GW37 SWMU318-GW35 SWMU318-GW51 318-GW04 318-GW22 SWMU318-MW06DW SWMU318-MW05DW 318-GW05 SWMU318-GW32 SWMU318-GW36 SWMU318-MW01 SWMU318-GW40 SWMU318-MW06 SWMU318-GW42 318-GW08 318-GW11 SWMU318-MW08 SWMU318-GW48

NOTE:
GRAYED LOCATIONS INDICATE THAT THE WELL WAS NOT SCREENED, OR A SAMPLE WAS NOT COLLECTED FROM THE ZONE OF INTEREST.

CONCENTRATION ABOVE SCREENING CRITERIA ARE SHOWN AS SOLID. CONCENTRATIONS BELOW SCREENING CRITERIA, BUT ABOVE DETECTION LIMITS ARE SHOWN AS A DASHED LINE.

CONCENTRATION SCALE

- 5,000 ppb
- 1,000 ppb
- 100 ppb
- 2L Standard (70 ppb)
- 10 ppb
- Detection Limit (2ppb)

SOURCE: MCB CAMP LEJEUNE MARCH 2000

200 0 100 200
1 inch = 200 ft.

Baker

LEGEND

- PHASE I RFI GROUNDWATER GRAB LOCATION
- PHASE II RFI GROUNDWATER GRAB LOCATION
- PHASE III RFI GROUNDWATER GRAB LOCATION
- MONITORING WELL LOCATION

FIGURE 4-19
CIS-1,2-DCE CONCENTRATIONS IN DEEP GROUNDWATER (40-44')
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO - 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

TABLE 7-1
SUMMARY OF ANALYTICAL DATA USED IN THE SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Media	Sample ID	Date Sampled	Sample Interval (Feet below ground surface)	Analysis					Comments
				TCL VOCs (SW 846 Method 8260B - mobile laboratory)	TCL VOCs (OLMO 4.2)	TCL VOCs (OLMO 4.2) - BTEX only	TCL SVOCs (OLMO 4.2)	RCRA Metals (ILMO 4.1)	
Surface Soil	SWMU303-IS04-00	3/19/2002	0 - 1		X				Relabled "SWMU303-IS04-00B"
	SWMU303-SB01-00	3/19/2002	0 - 1				X	X	
	SWMU303-SB02-00	3/19/2002	0 - 1				X	X	
	SWMU303-TW01-00	3/19/2002	0 - 1				X	X	
	SWMU303-TW02-00	3/20/2002	0 - 1				X	X	
	SWMU303-TW03-00	3/20/2002	0 - 1				X	X	
	SWMU318-IS01-00	9/14/1997	0 - 2			X	X	X	deep but no nearby samples in source area
	SWMU318-IS02-00	9/14/1997	0 - 2			X	X	X	deep but no nearby samples in source area
	SWMU318-IS03-00	9/14/1997	0 - 2			X	X	X	deep but no nearby samples in source area
	SWMU318-SS01-00	9/14/1997	0 - 2			X	X	X	deep but no nearby samples in source area
	SWMU318-SS02-00	3/19/2002	0 - 1		X		X	X	
	SWMU318-SS03-00	3/19/2002	0 - 1		X		X	X	
	SWMU318-TW01-00	3/20/2002	0 - 1		X		X	X	
	SWMU318-TW02-00	3/20/2002	0 - 1		X		X	X	
	SWMU318-TW03-00	3/20/2002	0 - 1		X		X	X	
	SWMU318-SB05-00	3/16/2004	0 - 1	X					
	SWMU318-SB06-00	3/16/2004	0 - 1	X	X				
	SWMU318-SB09-00	3/22/2004	0 - 1	X	X		X	X	
	SWMU318-SB10-00	3/23/2004	0 - 1	X			X	X	
	SWMU318-SB11-00	3/22/2004	0 - 1	X					
	SWMU318-SB12-00	3/22/2004	0 - 1	X					
	SWMU318-SB16-00	2/4/2005	0 - 1	X	X		X	X	
	SWMU318-SB19-00	2/4/2005	0 - 1	X	X		X	X	
	SWMU318-SB20-00	2/3/2005	0 - 1	X	X				
	SWMU318-SB21-00	2/3/2005	0 - 1	X	X		X	X	
	SWMU318-SB22-00	2/7/2005	0 - 1	X					
	SWMU318-SB23-00	2/3/2005	0 - 1	X	X		X		
	SWMU318-SB24-00	2/7/2005	0 - 1	X	X		X	X	
	SWMU318-SB26-00	2/4/2005	0 - 1	X					
	SWMU318-SB27-00	2/7/2005	0 - 1	X					
	SWMU318-SB28-00	2/8/2005	0 - 1	X					

TABLE 7-1
SUMMARY OF ANALYTICAL DATA USED IN THE SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Media	Sample ID	Date Sampled	Sample Interval (Feet below ground surface)	Analysis					Comments
				TCL VOCs (SW 846 Method 8260B - mobile laboratory)	TCL VOCs (OLMO 4.2)	TCL VOCs (OLMO 4.2) - BTEX only	TCL SVOCs (OLMO 4.2)	RCRA Metals (ILMO 4.1)	
Shallow Groundwater	SWMU318-GW01	3/19/2004	12-16	X	X		X		
	SWMU318-GW03	3/18/2004	12-16	X	X		X		
	SWMU318-GW04	3/18/2004	12-16	X	X		X		
	SWMU318-GW07	3/18/2004	10-14	X	X				
	SWMU318-GW08	3/17/2004	12-16	X					
	SWMU318-GW14	3/22/2004	12-16	X					
	SWMU318-GW28	6/24/2004	10-14	X					

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	USEPA Region IV Recommended Surface Soil Screening Values	
Analyte	**(ug/kg) or (mg/kg) [1,2]**	**Comment**
Volatile Organics:		
1,1,1-Trichloroethane	100	value for aliphatic chlorinated hydrocarbons
1,1,1,2-Tetrachloroethane	100	value for aliphatic chlorinated hydrocarbons
1,1,2,2-Tetrachloroethane	100	value for aliphatic chlorinated hydrocarbons
1,1,2-Trichloro-1,2,2-trifluoroethane	100	value for aliphatic chlorinated hydrocarbons
1,1,2-Trichloroethane	100	value for aliphatic chlorinated hydrocarbons
1,1-Dichloroethane	100	value for aliphatic chlorinated hydrocarbons
1,1-Dichloroethene	100	value for aliphatic chlorinated hydrocarbons
1,1-Dichloropropene	NA	
1,2-Dibromoethane	NA	
1,2-Dibromo-3-chloropropane (DBCP)	100	value for aliphatic chlorinated hydrocarbons
1,2-Dichloroethane	400	
1,2-Dichloroethene (Total)	100	value for aliphatic chlorinated hydrocarbons
1,2-Dichloroethene (cis)	100	value for aliphatic chlorinated hydrocarbons
1,2-Dichloroethene (trans)	100	value for aliphatic chlorinated hydrocarbons
1,2-Dichloropropane	700,000	
1,2,3-Trichlorobenzene	10	value for trichlorobenzene
1,2,3-Trichloropropane	NA	
1,2,4-Trimethylbenzene	NA	
1,3,5-Trimethylbenzene	NA	
1,3-Dichloropropane	NA	
2,2-Dichloropropane	NA	
2-Butanone	NA	
2-Chlorotoluene	NA	
2-Hexanone	NA	
4-Chlorotoluene	NA	
4-Isopropyltoluene	NA	
4-Methyl-2-Pentanone	NA	
Acetone	NA	
Benzene	50	
Bromobenzene	NA	
Bromochloromethane	100	value for aliphatic chlorinated hydrocarbons
Bromodichloromethane	100	value for aliphatic chlorinated hydrocarbons
Bromoform	NA	
Bromomethane	NA	
Butylbenzene, n-	NA	
Butylbenzene, sec-	NA	
Butylbenzene, tert-	NA	
Carbon Disulfide	NA	
Carbon Tetrachloride	1,000,000	
Chlorobenzene	50	
Chloroethane	100	value for aliphatic chlorinated hydrocarbons
Chloroform	1	
Chloromethane	100	value for aliphatic chlorinated hydrocarbons
cis-1,3-Dichloropropene	100	value for aliphatic chlorinated hydrocarbons
Cyclohexane	100	
Dibromomethane	NA	
Dibromochloromethane	100	value for aliphatic chlorinated hydrocarbons
Dichlorodifluoromethane	100	value for aliphatic chlorinated hydrocarbons
Ethylbenzene	50	
Isopropylbenzene (Cumene)	100	value for monocyclic aromatic hydrocarbons
Methyl Acetate	NA	
Methyl Cyclohexane	100	value for monocyclic aromatic hydrocarbons
Methyl tert-butyl ether	NA	
Methylene Chloride	2000	
Propylbenzene, n-	NA	
Styrene	100	

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	USEPA Region IV Recommended Surface Soil Screening Values	
Analyte	**(ug/kg) or (mg/kg) [1,2]**	**Comment**
Volatile Organics (Cont.):		
Tetrachloroethene	10	
Toluene	50	
trans-1,3-Dichloropropene	100	value for aliphatic chlorinated hydrocarbons
Trichloroethene (TCE)	1	
Trichlorofluoromethane	100	value for aliphatic chlorinated hydrocarbons
Vinyl Chloride	10	
Xylene, m-	50	value for total xylenes
Xylene, o-	50	value for total xylenes
Xylene (Total)	50	
Semivolatile Organics:		
1,1'-Biphenyl	60,000	
1,2,4-Trichlorobenzene	10	value for trichlorobenzene
1,2-Dichlorobenzene	10	value for dichlorobenzene
1,3-Dichlorobenzene	10	value for dichlorobenzene
1,4-Dichlorobenzene	10	value for dichlorobenzene
2,2'-Oxybis (1-Chloropropane)	100	value for aliphatic chlorinated hydrocarbons
2,4,5-Trichlorophenol	4,000	
2,4,6-Trichlorophenol	10,000	
2,4-Dichlorophenol	3	value for total dichlorophenols
2,4-Dimethylphenol	500	value for cresols
2,4-Dinitrophenol	20,000	
2,4-Dinitrotoluene	NA	
2,6-Dinitrotoluene	NA	
2-Chloronaphthalene	1000	value for chloronapthalene
2-Chlorophenol	NA	
2-Methylnaphthalene	NA	
2-Methylphenol	500	value for cresols
2-Nitroaniline	NA	
2-Nitrophenol	7,000	value for 4-nitrophenol
3,3'-Dichlorobenzidine	100	value for total polycyclic chlorinated hydrocarbons
3-Nitroaniline	NA	
4,6-Dinitro-2-Methylphenol	NA	
4-Bromophenyl-Phenylether	NA	
4-Chloro-3-Methylphenol	NA	
4-Chloroaniline	NA	
4-Chlorophenyl-Phenylether	10	value for chlorophenols
4-Methylphenol	500	value for cresols
4-Nitroaniline	NA	
4-Nitrophenol	7,000	
Acenaphthene	NA	
Acenaphthylene	NA	
Acetophenone	NA	
Anthracene	NA	
Atrazine	0.05	
Benzaldehyde	100	value for monocyclic aromatic hydrocarbons
Benzo(a)anthracene	NA	
Benzo(a)pyrene	NA	
Benzo(b)fluoranthene	NA	
Benzo(g,h,i)perylene	NA	
Benzo(k)fluoranthene	NA	
bis(2-Chloroethyl)ether	100	value for aliphatic chlorinated hydrocarbons
bis(2-Chloroethoxy)methane	100	value for aliphatic chlorinated hydrocarbons
bis(2-Ethylhexyl)phthalate	NA	see value for total phthalates
Butylbenzylphthalate	NA	see value for total phthalates
Caprolactam	NA	
Carbazole	NA	

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	USEPA Region IV Recommended Surface Soil Screening Values	
Analyte	**(ug/kg) or (mg/kg) [1,2]**	**Comment**
Semivolatile Organics (Cont):		
Chrysene	NA	
Dibenzo(a,h)anthracene	NA	
Dibenzofuran	NA	
Diethylphthalate	100,000	
Dimethylphthalate	200,000	
Di-n-butylphthalate	200,000	
Di-n-octylphthalate	NA	
Fluoranthene	NA	
Fluorene	NA	
Hexachlorobenzene	2.5	
Hexachlorobutadiene	100	value for aliphatic chlorinated hydrocarbons
Hexachlorocyclopentadiene	10,000	
Hexachloroethane	100	value for aliphatic chlorinated hydrocarbons
Indeno(1,2,3-cd)pyrene	NA	
Isophorone	NA	
Naphthalene	NA	
Nitrobenzene	40,000	
n-Nitroso-di-n-propylamine	NA	
n-Nitrosodiphenylamine	20,000	
Pentachlorophenol	2	
Phenanthrene	NA	
Phenol	50	
Pyrene	NA	
PAHs (total)	1000	
Phthalates (total)	100	
Total Inorganics:		
Arsenic	10	
Barium	165	
Cadmium	1.6	
Chromium (Total)	0.4	
Chromium III	0.4	Value for Chromium (total)
Chromium VI	0.4	Value for Chromium (total)
Lead	50	
Mercury	0.1	
Selenium	0.81	
Silver	2	

Notes:

NA = Not Applicable/ Not Established

[1] Soil screening values are in microgram per kilogram (ug/kg) for organic compounds and in milligram per kilogram (mg/kg) for inorganic constituents.

[2] Values obtained from *Guidelines for Performing Screening Level Ecological Risk Assessments Within the North Carolina Division of Waste Management* (NCDENR 2003)

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	USEPA Region IV Recommended Freshwater Screening Values [1]	
Analyte	**(ug/L)**	**Comment**
Volatile Organics:		
1,1,1-Trichloroethane	528	
1,1,1,2-Tetrachloroethane	NA	
1,1,2,2-Tetrachloroethane	240	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	
1,1,2-Trichloroethane	940	
1,1-Dichloroethane	NA	
1,1-Dichloroethene	303	
1,1-Dichloropropene	NA	
1,2-Dibromoethane	NA	
1,2-Dibromo-3-chloropropane (DBCP)	NA	
1,2-Dichloroethane	2000	
1,2-Dichloroethene (Total)	1350	value for 1,2-dichloroethene(trans)
1,2-Dichloroethene (cis)	NA	
1,2-Dichloroethene (trans)	1350	
1,2-Dichloropropane	525	
1,2,3-Trichlorobenzene	NA	
1,2,3-Trichloropropane	NA	
1,2,4-Trimethylbenzene	NA	
1,3,5-Trimethylbenzene	NA	
1,3-Dichloropropane	NA	
2,2-Dichloropropane	NA	
2-Butanone	NA	
2-Chlorotoluene	NA	
2-Hexanone	NA	
4-Chlorotoluene	NA	
4-Isopropyltoluene	NA	
4-Methyl-2-Pentanone	NA	
Acetone	NA	
Benzene	53	
Bromobenzene	NA	
Bromochloromethane	NA	
Bromodichloromethane	NA	
Bromoform	293	
Bromomethane	110	
Butylbenzene, n-	NA	
Butylbenzene, sec-	NA	
Butylbenzene, tert-	NA	
Carbon Disulfide	NA	
Carbon Tetrachloride	352	
Chlorobenzene	195	
Chloroethane	NA	
Chloroform	289	
Chloromethane	5500	
cis-1,3-Dichloropropene	24.4	
Cyclohexane	NA	
Dibromomethane	NA	
Dibromochloromethane	NA	
Dichlorodifluoromethane	NA	
Ethylbenzene	453	
Isopropylbenzene (Cumene)	NA	
Methyl Acetate	NA	
Methyl Cyclohexane	NA	
Methyl tert-butyl ether	NA	
Methylene Chloride	1930	
Propylbenzene, n-	NA	
Styrene	NA	

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	USEPA Region IV Recommended Freshwater Screening Values [1]	
Analyte	**(ug/L)**	**Comment**
Volatile Organics (Cont.):		
Tetrachloroethene	84	
Toluene	175	
trans-1,3-Dichloropropene	24.4	Cis and Trans isomers
Trichloroethene (TCE)	NA	
Trichlorofluoromethane	NA	
Vinyl Chloride	NA	
Xylene, m-	NA	
Xylene, o-	NA	
Xylene (Total)	NA	
Semivolatile Organics:		
1,1'-Biphenyl	NA	
1,2,4-Trichlorobenzene	44.9	
1,2-Dichlorobenzene	15.8	
1,3-Dichlorobenzene	50.2	
1,4-Dichlorobenzene	11.2	
2,2'-Oxybis (1-Chloropropane)	NA	
2,4,5-Trichlorophenol	NA	
2,4,6-Trichlorophenol	3.2	
2,4-Dichlorophenol	36.5	
2,4-Dimethylphenol	21.2	
2,4-Dinitrophenol	6.2	
2,4-Dinitrotoluene	310	
2,6-Dinitrotoluene	NA	
2-Chloronaphthalene	NA	
2-Chlorophenol	43.8	
2-Methylnaphthalene	NA	
2-Methylphenol	NA	
2-Nitroaniline	NA	
2-Nitrophenol	3500	
3,3'-Dichlorobenzidine	NA	
3-Nitroaniline	NA	
4,6-Dinitro-2-Methylphenol	2.3	
4-Bromophenyl-Phenylether	12.2	
4-Chloro-3-Methylphenol	0.3	
4-Chloroaniline	NA	
4-Chlorophenyl-Phenylether	NA	
4-Methylphenol	NA	
4-Nitroaniline	NA	
4-Nitrophenol	82.8	
Acenaphthene	17	
Acenaphthylene	NA	
Acetophenone	NA	
Anthracene	NA	
Atrazine	NA	
Benzaldehyde	NA	
Benzo(a)anthracene	NA	
Benzo(a)pyrene	NA	
Benzo(b)fluoranthene	NA	
Benzo(g,h,i)perylene	NA	
Benzo(k)fluoranthene	NA	
bis(2-Chloroethyl)ether	2380	
bis(2-Chloroethoxy)methane	NA	
bis(2-Ethylhexyl)phthalate	0.299	
Butylbenzylphthalate	22	
Caprolactam	NA	
Carbazole	NA	

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	USEPA Region IV Recommended Freshwater Screening Values [1]	
Analyte	**(ug/L)**	**Comment**
Semivolatile Organics (Cont):		
Chrysene	NA	
Dibenzo(a,h)anthracene	NA	
Dibenzofuran	NA	
Diethylphthalate	521	
Dimethylphthalate	330	
Di-n-butylphthalate	9.4	
Di-n-octylphthalate	0.3	value for bis(2-ethylhexyl)phthalate
Fluoranthene	39.8	
Fluorene	NA	
Hexachlorobenzene	NA	
Hexachlorobutadiene	0.93	
Hexachlorocyclopentadiene	0.07	
Hexachloroethane	9.8	
Indeno(1,2,3-cd)pyrene	NA	
Isophorone	1170	
Naphthalene	62	
Nitrobenzene	270	
n-Nitroso-di-n-propylamine	NA	
n-Nitrosodiphenylamine	58.5	
Pentachlorophenol	12.8	pH = 7.8 S.U.
Phenanthrene	NA	
Phenol	256	
Pyrene	NA	
PAHs (total)	17	Value for acenaphthene
Phthalates (total)	NA	
Total Inorganics:		
Arsenic	190	Trivalent (+3) form
Barium	NA	
Cadmium	0.16	Hardness = 50 mg CaCO3/L (default)[2]
Chromium (Total)	NA	
Chromium III	117.32	Hardness = 50 mg CaCO3/L (default)
Chromium VI	11	
Lead	1.32	Hardness = 50 mg CaCO3/L (default)
Mercury	0.012	
Selenium	5	
Silver	0.012	

Notes:

NA = Not Applicable/ Not Established

USEPA = United States Environmental Protection Agency

[1] Values obtained from *Guidelines for Performing Screening Level Ecological Risk Assessments within the North Carolina Division of Waste Management* (NCDENR 2003)

[2] USEPA Region IV hardness based calculation updated to reflect current ambient water quality criteria (USEPA 2002).

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	North Carolina Surface Water Quality Standard for Aquatic Life - Fresh Water[1]	
Analyte	**(ug/L)**	**Comment**
Volatile Organics:		
1,1,1-Trichloroethane	NA	
1,1,1,2-Tetrachloroethane	NA	
1,1,2,2-Tetrachloroethane	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	
1,1,2-Trichloroethane	NA	
1,1-Dichloroethane	NA	
1,1-Dichloroethene	NA	
1,1-Dichloropropene	NA	
1,2-Dibromoethane	NA	
1,2-Dibromo-3-chloropropane (DBCP)	NA	
1,2-Dichloroethane	NA	
1,2-Dichloroethene (Total)	NA	
1,2-Dichloroethene (cis)	NA	
1,2-Dichloroethene (trans)	NA	
1,2-Dichloropropane	NA	
1,2,3-Trichlorobenzene	NA	
1,2,3-Trichloropropane	NA	
1,2,4-Trimethylbenzene	NA	
1,3,5-Trimethylbenzene	NA	
1,3-Dichloropropane	NA	
2,2-Dichloropropane	NA	
2-Butanone	NA	
2-Chlorotoluene	NA	
2-Hexanone	NA	
4-Chlorotoluene	NA	
4-Isopropyltoluene	NA	
4-Methyl-2-Pentanone	NA	
Acetone	NA	
Benzene	NA	
Bromobenzene	NA	
Bromochloromethane	NA	
Bromodichloromethane	NA	
Bromoform	NA	
Bromomethane	NA	
Butylbenzene, n-	NA	
Butylbenzene, sec-	NA	
Butylbenzene, tert-	NA	
Carbon Disulfide	NA	
Carbon Tetrachloride	0.4	
Chlorobenzene	NA	
Chloroethane	NA	
Chloroform	NA	
Chloromethane	NA	
cis-1,3-Dichloropropene	NA	
Cyclohexane	NA	
Dibromomethane	NA	
Dibromochloromethane	NA	
Dichlorodifluoromethane	NA	
Ethylbenzene	NA	
Isopropylbenzene (Cumene)	NA	
Methyl Acetate	NA	
Methyl Cyclohexane	NA	
Methyl tert-butyl ether	NA	
Methylene Chloride	NA	
Propylbenzene, n-	NA	
Styrene	NA	

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	North Carolina Surface Water Quality Standard for Aquatic Life - Fresh Water[1]	
Analyte	**(ug/L)**	**Comment**
Volatile Organics (Cont.):		
Tetrachloroethene	NA	
Toluene	0.36	
trans-1,3-Dichloropropene	NA	
Trichloroethene (TCE)	NA	
Trichlorofluoromethane	NA	
Vinyl Chloride	NA	
Xylene, m-	NA	
Xylene, o-	NA	
Xylene (Total)	NA	
Semivolatile Organics:	NA	
1,1'-Biphenyl	NA	
1,2,4-Trichlorobenzene	NA	
1,2-Dichlorobenzene	NA	
1,3-Dichlorobenzene	NA	
1,4-Dichlorobenzene	NA	
2,2'-Oxybis (1-Chloropropane)	NA	
2,4,5-Trichlorophenol	NA	
2,4,6-Trichlorophenol	NA	
2,4-Dichlorophenol	NA	
2,4-Dimethylphenol	NA	
2,4-Dinitrophenol	NA	
2,4-Dinitrotoluene	NA	
2,6-Dinitrotoluene	NA	
2-Chloronaphthalene	NA	
2-Chlorophenol	NA	
2-Methylnaphthalene	NA	
2-Methylphenol	NA	
2-Nitroaniline	NA	
2-Nitrophenol	NA	
3,3'-Dichlorobenzidine	NA	
3-Nitroaniline	NA	
4,6-Dinitro-2-Methylphenol	NA	
4-Bromophenyl-Phenylether	NA	
4-Chloro-3-Methylphenol	NA	
4-Chloroaniline	NA	
4-Chlorophenyl-Phenylether	NA	
4-Methylphenol	NA	
4-Nitroaniline	NA	
4-Nitrophenol	NA	
Acenaphthene	NA	
Acenaphthylene	NA	
Acetophenone	NA	
Anthracene	NA	
Atrazine	NA	
Benzaldehyde	NA	
Benzo(a)anthracene	NA	
Benzo(a)pyrene	NA	
Benzo(b)fluoranthene	NA	
Benzo(g,h,i)perylene	NA	
Benzo(k)fluoranthene	NA	
bis(2-Chloroethyl)ether	NA	
bis(2-Chloroethoxy)methane	NA	
bis(2-Ethylhexyl)phthalate	NA	
Butylbenzylphthalate	NA	
Caprolactam	NA	
Carbazole	NA	

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	North Carolina Surface Water Quality Standard for Aquatic Life - Fresh Water[(1)]	
Analyte	**(ug/L)**	**Comment**
Semivolatile Organics (Cont):		
Chrysene	NA	
Dibenzo(a,h)anthracene	NA	
Dibenzofuran	NA	
Diethylphthalate	NA	
Dimethylphthalate	NA	
Di-n-butylphthalate	NA	
Di-n-octylphthalate	NA	
Fluoranthene	NA	
Fluorene	NA	
Hexachlorobenzene	NA	
Hexachlorobutadiene	NA	
Hexachlorocyclopentadiene	NA	
Hexachloroethane	NA	
Indeno(1,2,3-cd)pyrene	NA	
Isophorone	NA	
Naphthalene	NA	
Nitrobenzene	NA	
n-Nitroso-di-n-propylamine	NA	
n-Nitrosodiphenylamine	NA	
Pentachlorophenol	NA	
Phenanthrene	NA	
Phenol	NA	
Pyrene	NA	
PAHs (total)	NA	
Phthalates (total)	NA	
Total Inorganics:		
Arsenic	50	
Barium	NA	
Cadmium	0.4	
Chromium (Total)	50	
Chromium III	NA	
Chromium VI	NA	
Lead	25	
Mercury	0.012	
Selenium	5	
Silver	0.06	

Notes:
NA = Not Applicable/ Not Established
[(1)] Values obtained from *Guidelines for Performing Screening Level Ecological Risk Assessments Within the North Carolina Division of Waste Management* (NCDENR 2003). Original reference: North Carolina Water Quality Standards (North Carolina Administrative Code. Title 15A, Subchapter 2L) October 25, 1995. Last updated 1 April 2003.

TABLE 7-3
SELECTION OF ECOLOGICAL COPCs IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV ESV	Maximum Hazard Quotient	Soil COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [1]				
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	0/16	NA	NA	2U - 12U	12	100	0.12	No	
1,1,1-Trichloroethane (TCA)	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,1,2,2-Tetrachloroethane	0/22	NA	NA	2U - 12U	12	100	0.12	No	
1,1,2-Trichloro-1,2,2-trifluoroethane	0/10	NA	NA	5U - 12U	12	100	0.12	No	
1,1,2-Trichloroethane	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,1-Dichloroethane	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,1-Dichloroethene	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,1-Dichloropropene	0/16	NA	NA	1U - 12U	12	NA	NA	Yes	4
1,2,3-Trichlorobenzene	4/16	0.7J - 1.93J	SWMU318-SB16-00	5U - 12U	1.93	10	0.19	No	
1,2,3-Trichloropropane	0/10	NA	NA	2U	2	NA	NA	Yes	4
1,2,4-Trichlorobenzene	2/22	0.53J - 0.94J	SWMU318-SB26-00	5U - 12U	0.94	10	0.09	No	
1,2,4-Trimethylbenzene	2/16	0.59J - 0.65J	SWMU318-SB26-00	2U - 12U	0.65	NA	NA	Yes	3
1,2-Dibromo-3-chloropropane (DBCP)	0/22	NA	NA	5U - 12U	12	100	0.12	No	
1,2-Dibromoethane (EDB)	0/22	NA	NA	2U - 12U	12	NA	NA	Yes	4
1,2-Dichlorobenzene (o-)	1/26	9200 - 9200	SWMU318-SS01-00	1U - 12U	9200	10	920.00	Yes	1
1,2-Dichloroethane	0/22	NA	NA	1U - 12U	12	400	0.03	No	
1,2-Dichloroethene (cis)	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,2-Dichloroethene (total)	0/4	NA	NA	10U - 12U	12	100	0.12	No	
1,2-Dichloroethene (trans)	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,2-Dichloropropane	0/22	NA	NA	1U - 12U	12	700000	<0.01	No	
1,3,5-Trimethylbenzene	1/16	0.47J - 0.47J	SWMU318-SB20-00	2U - 12U	0.47	NA	NA	Yes	3
1,3-Dichlorobenzene (m-)	0/26	NA	NA	1U - 670U	670	10	67.00	Yes	2
1,3-Dichloropropane	0/16	NA	NA	1U - 12U	12	NA	NA	Yes	4
1,3-Dichloropropene (cis)	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,3-Dichloropropene (trans)	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,4-Dichlorobenzene (p-)	2/26	1.8 - 4300	SWMU318-SS01-00	1U - 12U	4300	10	430.00	Yes	1
2,2-Dichloropropane	0/16	NA	NA	1U - 12U	12	NA	NA	Yes	4
2-Butanone (MEK)	6/10	7J - 20	SWMU318-TW01-00	10UJ - 12U	20	NA	NA	Yes	3
2-Chlorotoluene	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
2-Hexanone (MBK)	1/10	3J - 3J	SWMU318-TW01-00	10UJ - 28U	3	NA	NA	Yes	3
4-Chlorotoluene	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
4-Isopropyltoluene	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
4-Methyl-2-pentanone (MIBK)	1/10	1J - 1J	SWMU318-TW01-00	10U - 28U	1	NA	NA	Yes	3
Acetone	6/10	27J - 78	SWMU318-TW01-00	10UJ - 12UJ	78	NA	NA	Yes	3
Benzene	2/26	2J - 2J	00,SWMU318-TW01-	1U - 670U	2	50	0.04	No	
Bromobenzene	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4

TABLE 7-3
SELECTION OF ECOLOGICAL COPCs IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV ESV	Maximum Hazard Quotient	Soil COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [1]				
Volatile Organic Compounds (ug/kg)(Cont.)									
Bromochloromethane	0/16	NA	NA	2U - 12U	12	100	0.12	No	
Bromodichloromethane	0/22	NA	NA	2U - 12U	12	100	0.12	No	
Bromoform	1/22	13 - 13	SWMU318-TW02-00	2U - 12U	13	NA	NA	Yes	3
Bromomethane	0/22	NA	NA	5U - 12U	12	NA	NA	Yes	4
Butylbenzene, sec-	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
Butylbenzene, tert-	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
Carbon Disulfide	2/10	2J - 3J	SWMU318-SS03-00	5U - 12U	3	NA	NA	Yes	3
Carbon Tetrachloride	0/22	NA	NA	1U - 12U	12	1000000	<0.01	No	
Chlorobenzene	0/26	NA	NA	1U - 670U	670	50	13.40	Yes	2
Chloroethane	1/22	44J - 44J	SWMU303-IS04-00	5UJ - 12U	44	100	0.44	No	
Chloroform	0/22	NA	NA	1U - 12U	12	1	12.00	Yes	2
Chloromethane	0/22	NA	NA	5U - 12U	12	100	0.12	No	
Cyclohexane	0/10	NA	NA	5U - 12U	12	100	0.12	No	
Dibromochloromethane	0/22	NA	NA	2U - 12U	12	100	0.12	No	
Dibromomethane	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
Dichlorodifluoromethane	0/22	NA	NA	5UJ - 12U	12	100	0.12	No	
Ethylbenzene	0/26	NA	NA	1U - 670U	670	50	13.40	Yes	2
Hexachlorobutadiene	0/16	NA	NA	5U - 12U	12	100	0.12	No	
Isopropylbenzene (Cumene)	0/22	NA	NA	2U - 12U	12	100	0.12	No	
Methyl Acetate	0/10	NA	NA	5U - 12U	12	NA	NA	Yes	4
Methyl Cyclohexane	0/10	NA	NA	5U - 12U	12	100	0.12	No	
Methyl Tert-Butyl Ether (MTBE)	0/10	NA	NA	5U - 12U	12	NA	NA	Yes	4
Methylene Chloride	7/22	1J - 18	SWMU318-TW02-00	5U - 23UJ	18	2000	<0.01	No	
Naphthalene	2/16	1.1J - 1.5J	SWMU318-SB26-00	5U - 12U	1.5	NA	NA	Yes	3
n-Butylbenzene	1/16	0.66J - 0.66J	SWMU318-SB26-00	2U - 12U	0.66	NA	NA	Yes	3
n-Propylbenzene	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
Styrene (Ethenylbenzene)	0/22	NA	NA	1U - 12U	12	100	0.12	No	
Tetrachloroethene (PCE)	0/22	NA	NA	1U - 12U	12	10	1.20	Yes	2
Toluene	1/26	4J - 4J	SWMU318-SB05-00	1U - 670U	4	50	0.08	No	
Trichloroethene (TCE)	0/22	NA	NA	1U - 12U	12	1	12.00	Yes	2
Trichlorofluoromethane	1/18	2J - 2J	SWMU318-SB09-00	5U - 11UJ	2	100	0.02	No	
Vinyl Chloride	0/22	NA	NA	2U - 12U	12	10	1.20	Yes	2
Xylene, m-	2/16	2J - 4.7J	SWMU318-SB10-00	2U - 12U	4.7	50	0.09	No	
Xylene, o-	0/16	NA	NA	1U - 12U	12	50	0.24	No	
Xylenes, total	0/14	NA	NA	1U - 670U	670	50	13.40	Yes	2

TABLE 7-3
SELECTION OF ECOLOGICAL COPCs IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV ESV	Maximum Hazard Quotient	Soil COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [(1)]				
Semivolatile Organic Compounds (ug/kg)									
1,1'-Biphenyl	0/17	NA	NA	360U - 650U	650	60000	0.01	No	
2,2'-Oxybis[1-chloropropane]	0/21	NA	NA	360U - 18000U	18000	100	180.00	Yes	2
2,4,5-Trichlorophenol	0/21	NA	NA	360U - 18000U	18000	4000	4.50	Yes	2
2,4,6-Trichlorophenol	0/21	NA	NA	360U - 18000U	18000	10000	1.80	Yes	2
2,4-Dichlorophenol	0/21	NA	NA	360U - 18000U	18000	3	6000.00	Yes	2
2,4-Dimethylphenol	0/21	NA	NA	360U - 18000U	18000	500	36.00	Yes	2
2,4-Dinitrophenol	0/21	NA	NA	890U - 86000U	86000	20000	4.30	Yes	2
2,4-Dinitrotoluene	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
2,6-Dinitrotoluene	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
2-Chloronaphthalene	0/21	NA	NA	360U - 18000U	18000	1000	18.00	Yes	2
2-Chlorophenol	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
2-Methylnaphthalene	2/21	120J - 2600J	SWMU318-SS01-00	360U - 650UJ	2600	NA	NA	Yes	3
2-Methylphenol (o-Cresol)	0/21	NA	NA	360U - 18000U	18000	500	36.00	Yes	2
2-Nitroaniline	0/21	NA	NA	730U - 86000U	86000	NA	NA	Yes	4
2-Nitrophenol	0/21	NA	NA	360U - 18000U	18000	7000	2.57	Yes	2
3,3'-Dichlorobenzidine	0/21	NA	NA	360U - 86000U	86000	100	860.00	Yes	2
3-Nitroaniline	0/21	NA	NA	730U - 86000U	86000	NA	NA	Yes	4
4,6-Dinitro-2-methylphenol	0/21	NA	NA	730U - 86000U	86000	NA	NA	Yes	4
4-Bromophenyl-phenylether	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
4-Chloro-3-methylphenol	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
4-Chloroaniline	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
4-Chlorophenyl-phenylether	0/21	NA	NA	360U - 18000U	18000	10	1800.00	Yes	2
4-Methylphenol (p-Cresol)	0/21	NA	NA	360U - 18000U	18000	500	36.00	Yes	2
4-Nitroaniline	0/21	NA	NA	730U - 86000U	86000	NA	NA	Yes	4
4-Nitrophenol	0/21	NA	NA	730U - 86000U	86000	7000	12.29	Yes	2
Acenaphthene	1/21	34J - 34J	SWMU318-SS03-00	360U - 18000U	34	NA	NA	Yes	3
Acenaphthylene	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
Acetophenone	1/17	120J - 120J	SWMU318-SS03-00	360U - 650U	120	NA	NA	Yes	3
Anthracene	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
Atrazine	0/17	NA	NA	360U - 650U	650	0.05	13000.00	Yes	2
Benzaldehyde	1/17	33J - 33J	SWMU318-TW02-00	360U - 650U	33	100	0.33	No	
Benzo(a)anthracene	4/21	52J - 4100J	SWMU318-SS01-00	360U - 470U	4100	NA	NA	Yes	3
Benzo(a)pyrene	4/21	82J - 5000J	SWMU318-SS01-00	360U - 470U	5000	NA	NA	Yes	3
Benzo(b)fluoranthene	6/21	29J - 5900J	SWMU318-SS01-00	360U - 470U	5900	NA	NA	Yes	3
Benzo(g,h,i)perylene	4/21	86J - 5000J	SWMU318-SS01-00	360U - 470U	5000	NA	NA	Yes	3
Benzo(k)fluoranthene	3/21	130J - 6900J	SWMU318-SS01-00	360U - 470U	6900	NA	NA	Yes	3

TABLE 7-3
SELECTION OF ECOLOGICAL COPCs IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV ESV	Maximum Hazard Quotient	Soil COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [(1)]				
Semivolatile Organic Compounds (ug/kg)(Cont.)									
Bis(2-chloroethoxy)methane	0/21	NA	NA	360U - 18000U	18000	100	180.00	Yes	2
Bis(2-chloroethyl)ether	0/21	NA	NA	360U - 18000U	18000	100	180.00	Yes	2
Bis(2-ethylhexyl) Phthalate (BEHP)	14/21	46J - 22000J	SWMU318-SS01-00	360U - 400U	22000	NA	NA	Yes	3
Butyl Benzyl Phthalate	3/21	65J - 2000J	SWMU318-SS01-00	360U - 470U	2000	NA	NA	Yes	3
Caprolactam	1/17	100J - 100J	SWMU318-SS03-00	360U - 650U	100	NA	NA	Yes	3
Carbazole	1/21	44J - 44J	SWMU318-SS03-00	360U - 18000U	44	NA	NA	Yes	3
Chrysene	4/21	69J - 6700J	SWMU318-SS01-00	360U - 470U	6700	NA	NA	Yes	3
Dibenz(a,h)anthracene	3/21	45J - 2300J	SWMU318-SS01-00	360U - 650U	2300	NA	NA	Yes	3
Dibenzofuran	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
Diethyl Phthalate (DEP)	0/21	NA	NA	360U - 18000U	18000	100000	0.18	No	
Dimethyl Phthalate	1/21	48J - 48J	SWMU318-SS03-00	360U - 18000U	48	200000	<0.01	No	
Di-n-butyl Phthalate (DBP)	2/21	31J - 2400J	SWMU318-SS01-00	360U - 650U	2400	200000	0.01	No	
Di-n-octyl Phthalate	4/21	30J - 170J	SWMU318-SS02-00	360U - 18000U	170	NA	NA	Yes	3
Fluoranthene	6/21	21J - 7700J	SWMU318-SS01-00	360U - 470U	7700	NA	NA	Yes	3
Fluorene	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
Hexachlorobenzene	0/21	NA	NA	360U - 18000U	18000	2.5	7200.00	Yes	2
Hexachlorocyclopentadiene	0/21	NA	NA	360U - 86000U	86000	10000	8.60	Yes	2
Hexachloroethane	0/21	NA	NA	360U - 18000U	18000	100	180.00	Yes	2
Indeno(1,2,3-cd)pyrene	6/21	36J - 4700J	SWMU318-SS01-00	360U - 470U	4700	NA	NA	Yes	3
Isophorone	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
Nitrobenzene	0/21	NA	NA	360U - 18000U	18000	40000	0.45	No	
n-Nitrosodi-n-propylamine	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
n-Nitrosodiphenylamine	0/21	NA	NA	360U - 18000U	18000	20000	0.90	No	
Pentachlorophenol	0/21	NA	NA	730U - 86000U	86000	2	43000.00	Yes	2
Phenanthrene	1/21	110J - 110J	SWMU318-SS03-00	360U - 18000U	110	NA	NA	Yes	3
Phenol	0/21	NA	NA	360U - 18000U	18000	50	360.00	Yes	2
Pyrene	4/21	71J - 7800J	SWMU318-SS01-00	360U - 470U	7800	NA	NA	Yes	3
Metals (mg/kg)									
Arsenic	13/20	0.48J - 14.3	SWMU318-IS02-00	0.26U - 3.4U	14.3	10	1.43	Yes	1
Barium	19/20	9.4J - 396	SWMU318-SS01-00	25U	396	165	2.40	Yes	1
Cadmium	13/20	0.081J - 57.2	SWMU318-SS01-00	0.035U - 0.87U	57.2	1.6	35.75	Yes	1
Chromium	20/20	3.7 - 91.1	SWMU318-SS01-00	NA	91.1	0.4	227.75	Yes	1
Lead	20/20	3.2 - 110	SWMU318-SS01-00	NA	110	50	2.20	Yes	1
Mercury	13/20	0.018J - 0.14	SWMU318-IS02-00	0.02U - 0.07U	0.14	0.1	1.40	Yes	1

TABLE 7-3
SELECTION OF ECOLOGICAL COPCs IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV ESV	Maximum Hazard Quotient	Soil COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [(1)]				
Metals (mg/kg)(Cont.)									
Selenium	10/20	0.56J - 1.3	SWMU318-SS03-00	0.4U - 1U	1.3	0.81	1.60	Yes	1
Silver	1/20	7.2 - 7.2	SWMU318-SS01-00	0.098U - 1.4U	7.2	2	3.60	Yes	1

Notes:

[(1)] Maximum concentration. If contaminant was not detected, equals the maximum detection limit.

D = Value is the result of a dilution
U = Chemical was not detected above the method detection limit
J = Estimated Value
NJ = Presumptive evidence for the presence of the material at an estimated value.
COPC = Contaminant of Potential Concern
EPA = Ecological Protection Agency
ESV = Ecological Screening Value
Hazard Quotient = Contaminant Concentration/ ESV
MDL = Maximum detection limit
mg/kg = miligram per kilogram
NA = Not Available
SQL = Sample quantitation limit
ug/kg = microgram per kilogram

Contaminant Categories
1 Contaminant was found in concentrations exceeding its screening value.
2 Contaminant was not found in concentrations exceeding the SQL; however, the MDL exceed its screening value.
3 Contaminant was found in concentrations exceeding its SQL; however, there is no current screening value for the contaminant.
4 Contaminant was not found in concentrations exceeding the SQL and there is no current screening value for the contaminant.

TABLE 7-4
SELECTION OF ECOLOGICAL COPCs IN GROUNDWATER NEAR DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV Freshwater CSV	Maximum Hazard Quotient	North Carolina Fresh Surface Water Quality Standard	Exceeds NCWQS?	Groundwater COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [1]						
Volatile Organic Compounds (ug/L)											
1,1,1,2-Tetrachloroethane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,1,1-Trichloroethane (TCA)	0/7	NA	NA	2U - 10U	10.00	528	0.02	NA	NA	No	
1,1,2,2-Tetrachloroethane	0/7	NA	NA	2U - 10U	10.00	240	0.04	NA	NA	No	
1,1,2-Trichloro-1,2,2-trifluoroethane	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
1,1,2-Trichloroethane	0/7	NA	NA	2U - 10U	10.00	940	0.01	NA	NA	No	
1,1-Dichloroethane	1/7	0.5J - 0.5J	SWMU318-GW04	2U - 10U	0.50	NA	NA	NA	NA	Yes	3
1,1-Dichloroethene	0/7	NA	NA	2U - 10U	10.00	303	0.03	NA	NA	No	
1,1-Dichloropropene	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,2,3-Trichlorobenzene	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,2,4-Trichlorobenzene	0/7	NA	NA	2U - 10U	10.00	44.9	0.22	NA	NA	No	
1,2,4-Trimethylbenzene	3/7	1J - 17	SWMU318-GW14	2U	17.00	NA	NA	NA	NA	Yes	3
1,2-Dibromo-3-chloropropane (DBCP)	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,2-Dibromoethane (EDB)	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,2-Dichlorobenzene (o-)	2/7	0.4J - 0.4J	SWMU318-GW03,SWMU318-GW04	2U - 10U	0.40	15.8	0.03	NA	NA	No	
1,2-Dichloroethane	0/7	NA	NA	2U - 10U	10.00	2000	<0.01	NA	NA	No	
1,2-Dichloroethene (cis)	5/7	0.4J - 86	SWMU318-GW14	2U - 10U	86.00	NA	NA	NA	NA	Yes	3
1,2-Dichloroethene (total)	1/2	2J - 2J	SWMU318-GW01	10U	2.00	1350	<0.01	NA	NA	No	
1,2-Dichloroethene (trans)	0/7	NA	NA	2U - 10U	10.00	1350	<0.01	NA	NA	No	
1,2-Dichloropropane	0/7	NA	NA	2U - 10U	10.00	525	0.02	NA	NA	No	
1,3,5-Trimethylbenzene	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,3-Dichlorobenzene (m-)	2/7	0.7J - 0.7J	SWMU318-GW03,SWMU318-GW04	2U - 10U	0.70	50.2	0.01	NA	NA	No	
1,3-Dichloropropane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,3-Dichloropropene (cis)	0/7	NA	NA	2U - 10U	10.00	24.4	0.41	NA	NA	No	
1,3-Dichloropropene (trans)	0/7	NA	NA	2U - 10U	10.00	24.4	0.41	NA	NA	No	
1,4-Dichlorobenzene (p-)	2/7	0.9J - 0.9J	SWMU318-GW03,SWMU318-GW04	2U - 10U	0.90	11.2	0.08	NA	NA	No	
2,2-Dichloropropane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
2-Butanone (MEK)	0/2	NA	NA	10UJ	10.00	NA	NA	NA	NA	Yes	4
2-Chlorotoluene	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
2-Hexanone (MBK)	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
4-Chlorotoluene	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
4-Isopropyltoluene	2/7	0.7J - 6.4J	SWMU318-GW14	2U	6.40	NA	NA	NA	NA	Yes	3
4-Methyl-2-pentanone (MIBK)	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Acetone	0/2	NA	NA	10UJ	10.00	NA	NA	NA	NA	Yes	4
Benzene	2/7	0.9J - 14	SWMU318-GW14	2U - 10U	14.00	53	0.26	NA	NA	No	
Bromobenzene	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Bromochloromethane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Bromodichloromethane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Bromoform	0/7	NA	NA	2U - 10U	10.00	293	0.03	NA	NA	No	
Bromomethane	0/7	NA	NA	2U - 10U	10.00	110	0.09	NA	NA	No	

TABLE 7-4
SELECTION OF ECOLOGICAL COPCs IN GROUNDWATER NEAR DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV Freshwater CSV	Maximum Hazard Quotient	North Carolina Fresh Surface Water Quality Standard	Exceeds NCWQS?	Groundwater COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [1]						
Volatile Organic Compounds (ug/L)(Cont.)											
Butylbenzene, sec-	2/7	2J - 5	SWMU318-GW01	2U - 10U	5.00	NA	NA	NA	NA	Yes	3
Butylbenzene, tert-	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Carbon Disulfide	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Carbon Tetrachloride	0/7	NA	NA	2U - 10U	10.00	352	0.03	0.4	Yes	Yes	5
Chlorobenzene	1/7	2 - 2	SWMU318-GW04	2U - 10U	2.00	195	0.01	NA	NA	No	
Chloroethane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Chloroform	0/7	NA	NA	2U - 10U	10.00	289	0.03	NA	NA	No	
Chloromethane	0/7	NA	NA	2U - 10U	10.00	5500	<0.01	NA	NA	No	
Cyclohexane	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Dibromochloromethane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Dibromomethane	0/6	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Dichlorodifluoromethane (Freon-12)	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Ethylbenzene	5/7	0.6J - 8.1J	SWMU318-GW14	2U - 10U	8.10	453	0.02	NA	NA	No	
Hexachlorobutadiene	0/7	NA	NA	2U - 10U	10.00	0.93	10.75	NA	NA	Yes	2
Isopropylbenzene (Cumene)	2/7	1J - 2J	SWMU318-GW01	2U - 10U	2.00	NA	NA	NA	NA	Yes	3
Methyl Acetate	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Methyl Cyclohexane	1/2	1J - 1J	SWMU318-GW01	10U	1.00	NA	NA	NA	NA	Yes	3
Methyl Tert-Butyl Ether (MTBE)	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Methylene Chloride	0/7	NA	NA	2U - 10U	10.00	1930	<0.01	NA	NA	No	
Naphthalene	4/7	4.4 - 328	SWMU318-GW14	2U	328.00	62	5.29	NA	NA	Yes	1
n-Butylbenzene	3/7	0.5J - 49	SWMU318-GW14	2U	49.00	NA	NA	NA	NA	Yes	3
n-Propylbenzene	1/7	4 - 4	SWMU318-GW01	2U - 10U	4.00	NA	NA	NA	NA	Yes	3
Styrene (Ethenylbenzene)	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Tetrachloroethene (PCE)	0/7	NA	NA	2U - 10U	10.00	84	0.12	NA	NA	No	
Toluene	4/7	0.7J - 4J	SWMU318-GW14	2U - 10U	4.00	175	0.02	0.36	Yes	Yes	5
Trichloroethene (TCE)	3/7	0.7J - 60	SWMU318-GW14	2U - 10U	60.00	NA	NA	NA	NA	Yes	3
Trichlorofluoromethane	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Vinyl Chloride	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Xylene, m/p-	2/7	2J - 4J	SWMU318-GW14	4U - 10U	4.00	NA	NA	NA	NA	Yes	3
Xylene, o-	1/7	1J - 1J	SWMU318-GW04	2U - 10U	1.00	NA	NA	NA	NA	Yes	3
Xylenes, total	2/7	2J - 4J	SWMU318-GW14	4U - 10U	4.00	NA	NA	NA	NA	Yes	3
Semivolatile Organic Compounds (ug/L)											
1,1'-Biphenyl	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
2,2'-Oxybis[1-chloropropane]	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
2,4,5-Trichlorophenol	0/3	NA	NA	25U	25.00	NA	NA	NA	NA	Yes	4
2,4,6-Trichlorophenol	0/3	NA	NA	10U	10.00	3.2	3.13	NA	NA	Yes	2
2,4-Dichlorophenol	0/3	NA	NA	10U	10.00	36.5	0.27	NA	NA	No	
2,4-Dimethylphenol	0/3	NA	NA	10U	10.00	21.2	0.47	NA	NA	No	
2,4-Dinitrophenol	0/3	NA	NA	25U	25.00	6.2	4.03	NA	NA	Yes	2
2,4-Dinitrotoluene	0/3	NA	NA	10U	10.00	310	0.03	NA	NA	No	
2,6-Dinitrotoluene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
2-Chloronaphthalene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4

TABLE 7-4
SELECTION OF ECOLOGICAL COPCs IN GROUNDWATER NEAR DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV Freshwater CSV	Maximum Hazard Quotient	North Carolina Fresh Surface Water Quality Standard	Exceeds NCWQS?	Groundwater COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [1]						
Semivolatile Organic Compounds (ug/L)(Cont.)											
2-Chlorophenol	0/3	NA	NA	10U	10.00	43.8	0.23	NA	NA	No	
2-Methylnaphthalene	1/3	8J - 8J	SWMU318-GW04	10U	8.00	NA	NA	NA	NA	Yes	3
2-Methylphenol (o-Cresol)	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
2-Nitroaniline	0/3	NA	NA	25U	25.00	NA	NA	NA	NA	Yes	4
2-Nitrophenol	0/3	NA	NA	10U	10.00	3500	<0.01	NA	NA	No	
3,3'-Dichlorobenzidine	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
3-Nitroaniline	0/3	NA	NA	25U	25.00	NA	NA	NA	NA	Yes	4
4,6-Dinitro-2-methylphenol	0/3	NA	NA	25U	25.00	2.3	10.87	NA	NA	Yes	2
4-Bromophenyl-phenylether	0/3	NA	NA	10U	10.00	12.2	0.82	NA	NA	No	
4-Chloro-3-methylphenol	0/3	NA	NA	10U	10.00	0.3	33.33	NA	NA	Yes	2
4-Chloroaniline	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
4-Chlorophenyl-phenylether	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
4-Methylphenol (p-Cresol)	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
4-Nitroaniline	0/3	NA	NA	25UJ	25.00	NA	NA	NA	NA	Yes	4
4-Nitrophenol	0/3	NA	NA	25U	25.00	82.8	0.30	NA	NA	No	
Acenaphthene	0/3	NA	NA	10U	10.00	17	0.59	NA	NA	No	
Acenaphthylene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Acetophenone	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Anthracene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Atrazine	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Benzaldehyde	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Benzo(a)anthracene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Benzo(a)pyrene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Benzo(b)fluoranthene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Benzo(g,h,i)perylene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Benzo(k)fluoranthene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Bis(2-chloroethoxy)methane	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Bis(2-chloroethyl)ether	0/3	NA	NA	10U	10.00	2380	<0.01	NA	NA	No	
Bis(2-ethylhexyl) Phthalate (BEHP)	0/3	NA	NA	10U	10.00	0.299	33.44	NA	NA	Yes	2
Butyl Benzyl Phthalate	0/3	NA	NA	10U	10.00	22	0.45	NA	NA	No	
Caprolactam	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Carbazole	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Chrysene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Dibenz(a,h)anthracene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Dibenzofuran	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Diethyl Phthalate (DEP)	0/3	NA	NA	10U	10.00	521	0.02	NA	NA	No	
Dimethyl Phthalate	0/3	NA	NA	10U	10.00	330	0.03	NA	NA	No	
Di-n-butyl Phthalate (DBP)	0/3	NA	NA	10U	10.00	9.4	1.06	NA	NA	Yes	2
Di-n-octyl Phthalate	0/3	NA	NA	10U	10.00	0.3	33.33	NA	NA	Yes	2
Fluoranthene	0/3	NA	NA	10U	10.00	39.8	0.25	NA	NA	No	
Fluorene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Hexachlorobenzene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4

TABLE 7-4
SELECTION OF ECOLOGICAL COPCs IN GROUNDWATER NEAR DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV Freshwater CSV	Maximum Hazard Quotient	North Carolina Fresh Surface Water Quality Standard	Exceeds NCWQS?	Groundwater COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [1]						
Semivolatile Organic Compounds (ug/L)(Cont.)											
Hexachlorocyclopentadiene	0/3	NA	NA	10UJ	10.00	0.07	142.86	NA	NA	Yes	2
Hexachloroethane	0/3	NA	NA	10U	10.00	9.8	1.02	NA	NA	Yes	2
Indeno(1,2,3-cd)pyrene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Isophorone	0/3	NA	NA	10U	10.00	1170	<0.01	NA	NA	No	
Nitrobenzene	0/3	NA	NA	10U	10.00	270	0.04	NA	NA	No	
n-Nitrosodi-n-propylamine	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
n-Nitrosodiphenylamine	0/3	NA	NA	10U	10.00	58.5	0.17	NA	NA	No	
Pentachlorophenol	0/3	NA	NA	25U	25.00	12.794	1.95	NA	NA	Yes	2
Phenanthrene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Phenol	0/3	NA	NA	10U	10.00	256	0.04	NA	NA	No	
Pyrene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4

Notes:

[1] Maximum concentration. If contaminant was not detected, equals the maximum detection limit.

COPC = Contaminant of Potential Concern
CSV = Chronic Screening Value
EPA = Ecological Protection Agency
Hazard Quotient = Contaminant Concentration/ CSV
J = Estimated Value
MDL = Maximum detection limit
mg/L = miligram per liter
NA = Not Available
NCWQS = North Carolinal Water Quality Standard
SQL = Sample quantitation limit
U = Chemical was not detected above the method detection limit
ug/L = microgram per liter
UJ = Chemical was not detected above the method detection limit; method detection limit is an estimated value.

Contaminant Categories
1 Contaminant was found in concentrations exceeding its screening value.
2 Contaminant was not found in concentrations exceeding the SQL; however, the MDL exceed its screening value.
3 Contaminant was found in concentrations exceeding its SQL; however, there is no current screening value for the contaminant.
4 Contaminant was not found in concentrations exceeding the SQL and there is no current screening value for the contaminant.
5 Contaminant's SQL (if not detected) or maximum concentration exceeds the NCWQS.

TABLE 7-5
MEDIA-SPECIFIC SCREENING VALUES FOR STEP 3A
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

Analyte	Step 3A Soil Screening Values		
	(ug/kg) or (mg/kg) [1]	Reference [2]	Comment
Volatile Organics:			
1,1,1-Trichloroethane	100		value for aliphatic chlorinated hydrocarbons
1,1,1,2-Tetrachloroethane	100		value for aliphatic chlorinated hydrocarbons
1,1,2,2-Tetrachloroethane	100		value for aliphatic chlorinated hydrocarbons
1,1,2-Trichloro-1,2,2-trifluoroethane	100		value for aliphatic chlorinated hydrocarbons
1,1,2-Trichloroethane	100		value for aliphatic chlorinated hydrocarbons
1,1-Dichloroethane	100		value for aliphatic chlorinated hydrocarbons
1,1-Dichloroethene	100		value for aliphatic chlorinated hydrocarbons
1,1-Dichloropropene	NA		
1,2-Dibromoethane	1,230	USEPA, 2003	
1,2-Dibromo-3-chloropropane (DBCP)	100		value for aliphatic chlorinated hydrocarbons
1,2-Dichloroethane	400		
1,2-Dichloroethene (Total)	100		value for aliphatic chlorinated hydrocarbons
1,2-Dichloroethene (cis)	100		value for aliphatic chlorinated hydrocarbons
1,2-Dichloroethene (trans)	100		value for aliphatic chlorinated hydrocarbons
1,2-Dichloropropane	700,000		
1,2,3-Trichlorobenzene	10		value for trichlorobenzene
1,2,3-Trichloropropane	3,360	USEPA, 2003	
1,2,4-Trimethylbenzene	NA		
1,3,5-Trimethylbenzene	NA		
1,3-Dichloropropane	NA		
2,2-Dichloropropane	NA		
2-Butanone	89,600	USEPA, 2003	
2-Chlorotoluene	NA		
2-Hexanone	12,600	USEPA, 2003	
4-Chlorotoluene	NA		
4-Isopropyltoluene	NA		
4-Methyl-2-Pentanone	100,000	USEPA, 1995	LD50 for red-winged blackbird
Acetone	2,500	USEPA, 2003	
Benzene	50		
Bromobenzene	NA		
Bromochloromethane	100		value for aliphatic chlorinated hydrocarbons
Bromodichloromethane	100		value for aliphatic chlorinated hydrocarbons
Bromoform	15,900	USEPA, 2003	
Bromomethane	NA		
Butylbenzene, n-	NA		
Butylbenzene, sec-	NA		
Butylbenzene, tert-	NA		
Carbon Disulfide	94.1	USEPA, 2003	
Carbon Tetrachloride	1,000,000		
Chlorobenzene	50		
Chloroethane	100		value for aliphatic chlorinated hydrocarbons
Chloroform	1		
Chloromethane	100		value for aliphatic chlorinated hydrocarbons
cis-1,3-Dichloropropene	100		value for aliphatic chlorinated hydrocarbons
Cyclohexane	100		
Dibromochloromethane	2,050	USEPA, 2003	
Dibromomethane	100		value for aliphatic chlorinated hydrocarbons
Dichlorodifluoromethane	100		value for aliphatic chlorinated hydrocarbons
Ethylbenzene	50		
Isopropyl ether	NA		
Methyl tert-butyl ether	NA		
Isopropylbenzene (Cumene)	100		value for monocyclic aromatic hydrocarbons
Methyl Acetate	NA		
Methyl Cyclohexane	100		value for aliphatic chlorinated hydrocarbons

TABLE 7-5
MEDIA-SPECIFIC SCREENING VALUES FOR STEP 3A
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

Analyte	Step 3A Soil Screening Values		
	(ug/kg) or (mg/kg) [1]	Reference [2]	Comment
Volatile Organics (Cont.):			
Methylene Chloride	2000		
Propylbenzene, n-	NA		
Styrene	100		
Tetrachloroethene	10		
Toluene	50		
trans-1,3-Dichloropropene	100		value for aliphatic chlorinated hydrocarbons
Trichloroethene (TCE)	1		
Trichlorofluoromethane	100		value for aliphatic chlorinated hydrocarbons
Vinyl Chloride	10		
Xylene (Total)	50		
Xylene, m-	50		value for total xylenes
Xylene, o-	50		value for total xylenes
Semivolatile Organics:			
1,1'-Biphenyl	60,000		
1,2,4-Trichlorobenzene	10		value for trichlorobenzene
1,2-Dichlorobenzene	10		value for dichlorobenzene
1,3-Dichlorobenzene	10		value for dichlorobenzene
1,4-Dichlorobenzene	10		value for dichlorobenzene
2,2'-Oxybis (1-Chloropropane)	100		value for aliphatic chlorinated hydrocarbons
2,4,5-Trichlorophenol	4,000		
2,4,6-Trichlorophenol	10,000		
2,4-Dichlorophenol	3		value for total dichlorophenols
2,4-Dimethylphenol	500		value for cresols
2,4-Dinitrophenol	20,000		
2,4-Dinitrotoluene	1,280	USEPA, 2003	
2,6-Dinitrotoluene	32.8	USEPA, 2003	
2-Chloronaphthalene	1000		value for chloronapthalene
2-Chlorophenol	2.5	NCDENR 2003	value for total monochlorophenols
2-Methylnaphthalene	3,240	USEPA, 2003	
2-Methylphenol	500		value for cresols
2-Nitroaniline	74,100	USEPA, 2003	
2-Nitrophenol	7,000		value for 4-nitrophenol
3,3'-Dichlorobenzidine	100		value for total polycyclic chlorinated hydrocarbons
3-Nitroaniline	NA		
4,6-Dinitro-2-Methylphenol	NA		
4-Bromophenyl-Phenylether	NA		
4-Chloro-3-Methylphenol	2.5	NCDENR 2003	value for total monochlorophenols
4-Chloroaniline	1,100	USEPA, 2003	
4-Chlorophenyl-Phenylether	10		value for chlorophenols
4-Methylphenol	500		value for cresols
4-Nitroaniline	NA		
4-Nitrophenol	7,000		
Acenaphthene	100	USEPA, 1995	Canadian background concentration
Acenaphthylene	100	USEPA, 1995	Canadian background concentration
Acetophenone	300,000	USEPA, 2003	
Anthracene	100	USEPA, 1995	Canadian background concentration
Atrazine	0.05		
Benzaldehyde	100		value for monocyclic aromatic hydrocarbons
Benzo(a)anthracene	100	USEPA, 1995	Canadian background concentration
Benzo(a)pyrene	100	USEPA, 1995	Canadian backgound concentration
Benzo(b)fluoranthene	100	USEPA, 1995	Canadian backgound concentration
Benzo(g,h,i)perylene	100	USEPA, 1995	Canadian backgound concentration
Benzo(k)fluoranthene	100	USEPA, 1995	Canadian backgound concentration
bis(2-Chloroethyl)ether	100		value for aliphatic chlorinated hydrocarbons

TABLE 7-5
MEDIA-SPECIFIC SCREENING VALUES FOR STEP 3A
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

Analyte	Step 3A Soil Screening Values		
	(ug/kg) or (mg/kg) [1]	Reference [2]	Comment
Semivolatile Organics (Cont.):			
bis(2-Chloroethoxy)methane	100		value for aliphatic chlorinated hydrocarbons
bis(2-Ethylhexyl)phthalate	100	NCDENR 2003	value for total phthalates
Butylbenzylphthalate	100	NCDENR 2003	value for total phthalates
Caprolactam	NA		
Carbazole	NA		
Chrysene	100	USEPA, 1995	Canadian background concentration
Dibenzo(a,h)anthracene	100	USEPA, 1995	Canadian background concentration
Dibenzofuran	NA		
Diethylphthalate	100,000		
Dimethylphthalate	200,000		
Di-n-butylphthalate	200,000		
Di-n-octylphthalate	100	NCDENR 2003	value for total phthalates
Fluoranthene	100	USEPA, 1995	Canadian background concentration
Fluorene	100	USEPA, 1995	Canadian background concentration
Hexachlorobenzene	2.5		
Hexachlorobutadiene	100		value for aliphatic chlorinated hydrocarbons
Hexachlorocyclopentadiene	10,000		
Hexachloroethane	100		value for aliphatic chlorinated hydrocarbons
Indeno(1,2,3-cd)pyrene	100	USEPA, 1995	Canadian background concentration
Isophorone	139,000	USEPA, 2003	
Naphthalene	99.4	USEPA, 2003	
Nitrobenzene	40,000		
n-Nitroso-di-n-propylamine	544	USEPA, 2003	
n-Nitrosodiphenylamine	20,000		
Pentachlorophenol	2		
Phenanthrene	100	USEPA, 1995	Canadian background concentration
Phenol	50		
Pyrene	100	USEPA, 1995	Canadian background concentration
PAHs (total)	1000		
Phthalates (total)	100		
Total Inorganics:			
Arsenic	10		18 Eco-SSL terrestrial plants (USEPA 2003)
Barium	165		330 Eco-SSL soil invertebrates (USEPA 2003)
Cadmium	1.6		0.36 Eco-SSL mammalian wildlife (USEPA 2003)
Chromium (Total)	0.4		26 Eco-SSL avian wildlife (USEPA 2003)
Chromium III	0.4		Value for Chromium (total)
Chromium VI	0.4		Value for Chromium (total)
Lead	50		16 Eco-SSL avian wildlife (USEPA 2003)
Mercury	0.1		
Selenium	0.81		
Silver	2		

Notes:
NA = Not Applicable/ Not Established
NCDENR = North Carolina Department of Environment and Natural Resources
USEPA = United States Environmental Protection Agency
[1] Soil screening values are in microgram per kilogram (ug/kg) for organic compounds and in milligram per kilogram (mg/kg) for inorganic constituents.
[2] Non-shaded values are USEPA Region IV screening values obtained from *Guidelines for Performing Screening Level Ecological Risk Assessments within the North Carolina Division of Waste Management* (NCDENR 2003)
Shading indicates a screening value not included in Step 2 evaluation.

TABLE 7-5
MEDIA-SPECIFIC SCREENING VALUES FOR STEP 3A
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

Analyte	Step 3A Surface Water Screening Values - Freshwater		
	(ug/L)	Reference [(1)]	Comment
Volatile Organics:			
1,1,1-Trichloroethane	528		
1,1,1,2-Tetrachloroethane	NA		
1,1,2,2-Tetrachloroethane	240		
1,1,2-Trichloro-1,2,2-trifluoroethane	NA		
1,1,2-Trichloroethane	940		
1,1-Dichloroethane	47	USEPA 2003, USEPA 2004	
1,1-Dichloroethene	303		
1,1-Dichloropropene	NA		
1,2-Dibromoethane	NA		
1,2-Dibromo-3-chloropropane (DBCP)	NA		
1,2-Dichloroethane	2000		
1,2-Dichloroethene (Total)	590	USEPA, 2004	
1,2-Dichloroethene (cis)	NA		
1,2-Dichloroethene (trans)	1350		
1,2-Dichloropropane	525		
1,2,3-Trichlorobenzene	8	USEPA, 2004	
1,2,3-Trichloropropane	NA		
1,2,4-Trimethylbenzene	33	USEPA, 2004	
1,3,5-Trimethylbenzene	71	USEPA, 2004	
1,3-Dichloropropane	NA		
2,2-Dichloropropane	NA		
2-Butanone	2,200	USEPA, 2003	
2-Chlorotoluene	NA		
2-Hexanone	99	USEPA 2003, USEPA 2004	
4-Chlorotoluene	NA		
4-Isopropyltoluene	NA		
4-Methyl-2-Pentanone	170	USEPA 2003, USEPA 2004	
Acetone	1,500	USEPA, 2004	
Benzene	53		
Bromobenzene	NA		
Bromochloromethane	NA		
Bromodichloromethane	4,320	USEPA, 2003	
Bromoform	293		
Bromomethane	110		
Butylbenzene, n-	NA		
Butylbenzene, sec-	NA		
Butylbenzene, tert-	NA		
Carbon Disulfide	0.92	USEPA, 2004	
Carbon Tetrachloride	352		
Chlorobenzene	195		
Chloroethane	NA		
Chloroform	289		
Chloromethane	5500		
cis-1,3-Dichloropropene	24.4		
Cyclohexane	NA		
Dibromochloromethane	9.7	USEPA, 2003	
Dibromomethane	NA		
Dichlorodifluoromethane	NA		
Ethylbenzene	453		
Isopropyl ether	NA		
Methyl tert-butyl ether	11070	USEPA, 2004	
Isopropylbenzene (Cumene)	2.6	USEPA, 2004	
Methyl Acetate	NA		
Methyl Cyclohexane	NA		

TABLE 7-5
MEDIA-SPECIFIC SCREENING VALUES FOR STEP 3A
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

Analyte	Step 3A Surface Water Screening Values - Freshwater		
	(ug/L)	Reference [(1)]	Comment
Volatile Organics (Cont.):			
Methylene Chloride	1930		
Propylbenzene, n-	128	USEPA, 2004	
Styrene	72	USEPA, 2004	
Tetrachloroethene	84		
Toluene	175		
trans-1,3-Dichloropropene	24.4		Cis and Trans isomers
Trichloroethene (TCE)	21	USEPA, 2004	
Trichlorofluoromethane	NA		
Vinyl Chloride	930	USEPA 2003, USEPA 2004	
Xylene (Total)	13	USEPA, 2004	
Xylene, m-	1.8	USEPA, 2004	
Xylene, o-	13	USEPA, 2004	Value for total Xylene
Semivolatile Organics:			
1,1'-Biphenyl	14	USEPA, 2004	
1,2,4-Trichlorobenzene	44.9		
1,2-Dichlorobenzene	15.8		
1,3-Dichlorobenzene	50.2		
1,4-Dichlorobenzene	11.2		
2,2'-Oxybis (1-Chloropropane)	NA		
2,4,5-Trichlorophenol	NA		
2,4,6-Trichlorophenol	3.2		
2,4-Dichlorophenol	36.5		
2,4-Dimethylphenol	21.2		
2,4-Dinitrophenol	6.2		
2,4-Dinitrotoluene	310		
2,6-Dinitrotoluene	81	USEPA 2003, USEPA 2004	
2-Chloronaphthalene	0.396	USEPA, 2003	
2-Chlorophenol	43.8		
2-Methylnaphthalene	4.7	USEPA, 2004	
2-Methylphenol	13	USEPA, 2004	
2-Nitroaniline	NA		
2-Nitrophenol	3500		
3,3'-Dichlorobenzidine	4.5	USEPA 2003, USEPA 2004	
3-Nitroaniline	NA		
4,6-Dinitro-2-Methylphenol	2.3		
4-Bromophenyl-Phenylether	12.2		
4-Chloro-3-Methylphenol	0.3		
4-Chloroaniline	232	USEPA 2003, USEPA 2004	
4-Chlorophenyl-Phenylether	NA		
4-Methylphenol	25	USEPA, 2003	
4-Nitroaniline	NA		
4-Nitrophenol	82.8		
Acenaphthene	17		
Acenaphthylene	4,840	USEPA, 2003	
Acetophenone	NA		
Anthracene	0.012	USEPA, 2004	
Atrazine	1.8	USEPA, 2004	
Benzaldehyde	NA		
Benzo(a)anthracene	0.018	USEPA, 2004	
Benzo(a)pyrene	0.014	USEPA, 2003	
Benzo(b)fluoranthene	9.07	USEPA, 2003	
Benzo(g,h,i)perylene	7.64	USEPA, 2003	
Benzo(k)fluoranthene	NA		
bis(2-Chloroethyl)ether	2380		

TABLE 7-5
MEDIA-SPECIFIC SCREENING VALUES FOR STEP 3A
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

Analyte	Step 3A Surface Water Screening Values - Freshwater		
	(ug/L)	Reference [1]	Comment
Semivolatile Organics (Cont.):			
bis(2-Chloroethoxy)methane	NA		
bis(2-Ethylhexyl)phthalate	0.30		
Butylbenzylphthalate	22		
Caprolactam	NA		
Carbazole	NA		
Chrysene	NA		
Dibenzo(a,h)anthracene	4	USEPA, 2003	
Dibenzofuran	3.7	USEPA, 2004	
Diethylphthalate	521		
Dimethylphthalate	330		
Di-n-butylphthalate	9.4		
Di-n-octylphthalate	0.3		value for bis(2-ethylhexyl)phthalate
Fluoranthene	39.8		
Fluorene	3	USEPA, 2004	
Hexachlorobenzene	0.0003	USEPA 2003, USEPA 2004	
Hexachlorobutadiene	0.93		
Hexachlorocyclopentadiene	0.07		
Hexachloroethane	9.8		
Indeno(1,2,3-cd)pyrene	4.31	USEPA, 2003	
Isophorone	1170		
Naphthalene	62		
Nitrobenzene	270		
n-Nitroso-di-n-propylamine	NA		
n-Nitrosodiphenylamine	58.5		
Pentachlorophenol	12.8		pH = 7.8 S.U.
Phenanthrene	0.4	USEPA, 2004	
Phenol	256		
Pyrene	0.025	USEPA, 2004	
PAHs (total)	17		Value for acenaphthene
Phthalates (total)	NA		
Total Inorganics:			
Arsenic	190		Trivalent (+3) form
Barium	4	USEPA, 2004	
Cadmium	0.16	NCDENR 2003, USEPA 2002	Hardness = 50 mg CaCO3/L (default)[2]
Chromium (Total)	11	NCDENR, 2003	Value for Chromium VI
Chromium III	117.32		Hardness = 50 mg CaCO3/L (default)
Chromium VI	11		
Lead	1.32		Hardness = 50 mg CaCO3/L (default)
Mercury	0.012		
Selenium	5		
Silver	0.012		

Notes:
NA = Not Applicable/ Not Established
NCDENR = North Carolina Department of Environment and Natural Resources
USEPA = United States Environmental Protection Agency
[1] Non-shaded values are USEPA Region IV screening values obtained from *Guidelines for Performing Screening Level Ecological Risk Assessments within the North Carolina Division of Waste Management* (NCDENR 2003)
[2] USEPA Region IV hardness based calculation updated to reflect current ambient water quality criteria (USEPA 2002).
Shading indicates a screening value not included in NCDENR 2003.

TABLE 7-6
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening			Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Soil Screening Value (SSSV)[5]	Mean HQ [5]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Background?				
Volatile Organic Compounds (ug/kg)											
1,1-Dichloropropene	4	1.86	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
1,2,3-Trichloropropane	4	1.16	3360	<0.01	ND	NA	NA	0/10	No	No	Mean HQ < 1.0 Not Detected
1,2,4-Trimethylbenzene	3	2.15	NA	NA	0.65 J	NA	NA	2/16	No	No	See text
1,2-Dibromoethane (EDB)	4	3.02	1230	<0.01	ND	NA	NA	0/22	No	No	Mean HQ < 1.0 Not Detected
1,2-Dichlorobenzene (o-)	1	356.47	10	35.65	9200	NA	NA	1/26	Yes	Yes	Mean HQ > 1.0
1,3,5-Trimethylbenzene	3	2.17	NA	NA	0.47 J	NA	NA	1/16	No	No	See text
1,3-Dichlorobenzene (m-)	2	15.51	10	1.55	ND	NA	NA	0/26	Yes	No	Not Detected
1,3-Dichloropropane	4	1.86	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
1,4-Dichlorobenzene (p-)	1	168.06	10	16.81	4300	NA	NA	2/26	Yes	Yes	Mean HQ > 1.0
2,2-Dichloropropane	4	1.86	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
2-Butanone (MEK)	3	9.30	89600	<0.01	20	NA	NA	6/10	No	No	Mean HQ < 1.0
2-Chlorotoluene	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
2-Hexanone (MBK)	3	6.90	12600	<0.01	3 J	NA	NA	1/10	No	No	Mean HQ < 1.0
4-Chlorotoluene	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
4-Isopropyltoluene	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
4-Methyl-2-pentanone (MIBK)	3	6.70	100000	<0.01	1.00 J	NA	NA	1/10	No	No	Mean HQ < 1.0
Acetone	3	27.40	2500	0.01	78	NA	NA	6/10	No	No	Mean HQ < 1.0
Bromobenzene	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
Bromoform	3	3.45	15900	<0.01	13	NA	NA	1/22	No	No	Mean HQ < 1.0
Bromomethane	4	4.02	NA	NA	ND	NA	NA	0/22	No	No	Not Detected
Butylbenzene, sec-	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
Butylbenzene, tert-	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
Carbon Disulfide	3	4.10	94.1	0.03	3.00 J	NA	NA	2/10	No	No	Mean HQ < 1.0
Chlorobenzene	2	15.34	50	0.31	ND	NA	NA	0/26	No	No	Mean HQ < 1.0 Not Detected
Chloroform	2	2.81	1	2.81	ND	NA	NA	0/22	No	No	Not Detected
Ethylbenzene	2	15.34	50	0.31	ND	NA	NA	0/26	No	No	Mean HQ < 1.0 Not Detected
Methyl Acetate	4	4.25	NA	NA	ND	NA	NA	0/10	No	No	Not Detected
Methyl Tert-Butyl Ether (MTBE)	4	4.25	NA	NA	ND	NA	NA	0/10	No	No	Not Detected
Naphthalene	3	3.10	99.4	0.02	1.50 J	NA	NA	2/16	No	No	Mean HQ < 1.0
n-Butylbenzene	3	2.19	NA	NA	0.66 J	NA	NA	1/16	No	No	See text
n-Propylbenzene	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
Tetrachloroethene (PCE)	2	2.81	10	0.28	ND	NA	NA	0/22	No	No	Mean HQ < 1.0 Not Detected
Trichloroethene (TCE)	2	2.81	1	2.81	ND	NA	NA	0/22	No	No	Not Detected
Vinyl Chloride	2	3.39	10	0.34	ND	NA	NA	0/22	No	No	Mean HQ < 1.0 Not Detected
Xylenes, total	2	29.99	50	0.60	ND	NA	NA	0/14	No	No	Mean HQ < 1.0 Not Detected
Semivolatile Organic Compounds (ug/kg)											
2,2'-Oxybis[1-chloropropane]	2	623.10	100	6.23	ND	NA	NA	0/21	No	No	Not Detected
2,4,5-Trichlorophenol	2	720.71	4000	0.18	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
2,4,6-Trichlorophenol	2	623.10	10000	0.06	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected

TABLE 7-6
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening			Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Soil Screening Value (SSSV)[5]	Mean HQ [5]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Background?				
Semivolatile Organic Compounds (ug/kg)(Cont.)											
2,4-Dichlorophenol	2	623.10	3	207.70	ND	NA	NA	0/21	No	No	Not Detected
2,4-Dimethylphenol	2	623.10	500	1.25	ND	NA	NA	0/21	No	No	Not Detected
2,4-Dinitrophenol	2	2869.52	20000	0.14	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
2,4-Dinitrotoluene	4	623.10	1280	0.49	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
2,6-Dinitrotoluene	4	623.10	32.8	19.00	ND	NA	NA	0/21	No	No	Not Detected
2-Chloronaphthalene	2	623.10	1000	0.62	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
2-Chlorophenol	4	623.10	2.5	249.24	ND	NA	NA	0/21	No	No	Not Detected
2-Methylnaphthalene	3	313.10	3240	0.10	2600 J	NA	NA	2/21	No	No	Mean HQ < 1.0
2-Methylphenol (o-Cresol)	2	623.10	500	1.25	ND	NA	NA	0/21	No	No	Not Detected
2-Nitroaniline	4	2558.81	74100	0.03	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
2-Nitrophenol	2	623.10	7000	0.09	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
3,3'-Dichlorobenzidine	2	2461.19	100	24.61	ND	NA	NA	0/21	No	No	Not Detected
3-Nitroaniline	4	2558.81	NA	NA	ND	NA	NA	0/21	No	No	Not Detected
4,6-Dinitro-2-methylphenol	4	2558.81	NA	NA	ND	NA	NA	0/21	No	No	Not Detected
4-Bromophenyl-phenylether	4	623.10	NA	NA	ND	NA	NA	0/21	Yes	No	Not Detected
4-Chloro-3-methylphenol	4	623.10	2.5	249.24	ND	NA	NA	0/21	No	No	Not Detected
4-Chloroaniline	4	623.10	1100	0.57	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
4-Chlorophenyl-phenylether	2	623.10	10	62.31	ND	NA	NA	0/21	Yes	No	Not Detected
4-Methylphenol (p-Cresol)	2	623.10	500	1.25	ND	NA	NA	0/21	No	No	Not Detected
4-Nitroaniline	4	2558.81	NA	NA	ND	NA	NA	0/21	No	No	Not Detected
4-Nitrophenol	2	2558.81	7000	0.37	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
Acenaphthene	3	613.76	100	0.34	34 J	NA	NA	1/21	Yes	No	Mean HQ < 1.0
Acenaphthylene	4	623.10	100	6.23	ND	NA	NA	0/21	Yes	No	Not Detected
Acetophenone	3	195.88	300000	<0.01	120 J	NA	NA	1/17	No	No	Mean HQ < 1.0
Anthracene	4	623.10	100	6.23	ND	NA	NA	0/21	Yes	No	Not Detected
Atrazine	2	202.35	0.05	4047.06	ND	NA	NA	0/17	No	No	Not Detected
Benzo(a)anthracene	3	369.19	100	3.69	4100 J	NA	NA	4/21	Yes	No	See text
Benzo(a)pyrene	3	414.62	100	4.15	5000 J	NA	NA	4/21	Yes	No	See text
Benzo(b)fluoranthene	3	448.48	100	4.48	5900 J	NA	NA	6/21	Yes	No	See text
Benzo(g,h,i)perylene	3	410.95	100	4.11	5000 J	NA	NA	4/21	Yes	No	See text
Benzo(k)fluoranthene	3	517.14	100	5.17	6900.00 J	NA	NA	3/21	Yes	No	See text
Bis(2-chloroethoxy)methane	2	623.10	100	6.23	ND	NA	NA	0/21	No	No	Not Detected
Bis(2-chloroethyl)ether	2	623.10	100	6.23	ND	NA	NA	0/21	No	No	Not Detected
Bis(2-ethylhexyl) Phthalate (BEHP)	3	1476.52	100	14.77	22000 J	NA	NA	14/21	No	Yes	Mean HQ > 1.0
Butyl Benzyl Phthalate	3	270.52	100	2.71	2000 J	NA	NA	3/21	No	Yes	Mean HQ > 1.0
Caprolactam	3	194.71	NA	NA	100 J	NA	NA	1/17	No	No	See text
Carbazole	3	614.24	NA	NA	44 J	NA	NA	1/21	No	No	See text
Chrysene	3	499.19	100	4.99	6700 J	NA	NA	4/21	Yes	No	See text
Dibenz(a,h)anthracene	3	288.71	100	2.89	2300 J	NA	NA	3/21	Yes	No	See text
Dibenzofuran	4	623.10	NA	NA	ND	NA	NA	0/21	No	No	Not Detected

TABLE 7-6
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening			Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Soil Screening Value (SSSV)[2]	Mean HQ [3]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Background?				
Semivolatile Organic Compounds (ug/kg)(Cont.)											
Di-n-octyl Phthalate	3	593.19	100	1.70	170 J	NA	NA	4/21	No	No	See text
Fluoranthene	3	538.90	100	5.39	7700 J	NA	NA	6/21	Yes	No	See text
Fluorene	4	623.10	100	6.23	ND	NA	NA	0/21	Yes	No	Not Detected
Hexachlorobenzene	2	623.10	2.5	249.24	ND	NA	NA	0/21	Yes	No	Not Detected
Hexachlorocyclopentadiene	2	2361.43	10000	0.24	ND	NA	NA	0/21	Yes	No	Mean HQ < 1.0 Not Detected
Hexachloroethane	2	623.10	100	6.23	ND	NA	NA	0/21	Yes	No	Not Detected
Indeno(1,2,3-cd)pyrene	3	391.38	100	3.91	4700 J	NA	NA	6/21	Yes	No	See text
Isophorone	4	623.10	139000	<0.01	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
n-Nitrosodi-n-propylamine	4	623.10	544	1.15	ND	NA	NA	0/21	No	No	Not Detected
Pentachlorophenol	2	2558.81	2	1279.40	ND	NA	NA	0/21	Yes	No	Not Detected
Phenanthrene	3	617.38	100	1.10	110 J	NA	NA	1/21	Yes	No	See text
Phenol	2	623.10	50	12.46	ND	NA	NA	0/21	No	No	Not Detected
Pyrene	3	555.05	100	5.55	7800 J	NA	NA	4/21	Yes	No	See text
Metals (mg/kg)											
Arsenic	1	2.29	10	0.23	14	1.14	No	13/20	Yes	No	Mean HQ < 1.0
Barium	1	43.72	165	0.26	396	21.75	No	19/20	No	No	Mean HQ < 1.0
Cadmium	1	3.67	1.6	2.29	57	0.03	No	13/20	Yes	Yes	Mean HQ > 1.0
Chromium	1	18.46	0.4	46.15	91.10	12.68	No	20/20	Yes	Yes	Mean HQ > 1.0
Lead	1	28.07	50	0.56	110.0	16.73	No	20/20	Yes	No	Mean HQ < 1.0
Mercury	1	0.04	0.1	0.42	0.1	0.06	No	13/20	Yes	No	Mean HQ < 1.0
Selenium	1	0.56	0.81	0.69	1.3	0.81	No	10/20	Yes	No	Mean HQ < 1.0
Silver	1	0.51	2	0.25	7.2	0.15	No	1/20	Yes	No	Mean HQ < 1.0

Notes:
U = Chemical was not detected above the method detection limit
J = Estimated Value
HQ = Hazard Quotient Hazard Quotient = Contaminant Concentration/ ESV
mg/kg = miligram per kilogram
ug/kg = microgram per kilogram
NA = Not Applicable

[1] See Table 7-3 and text for definitions of contaminant categories.
[2] References for all screening values are provided on Table 7-5.
[3] The mean HQ represents the mean (half non-detect) concentration divided by the screening value. In cases where the mean exceeds the maximum the maximum value is used.
[4] The background concentration presented is for AOC 2 surface soils (Final Area of Concern Background Study [Baker 2001]).
[5] Compound is identified as an "important bioaccumulative chemical" in the USEPA document *Bioaccumulation Testing and Interpretation for the Purpose of Sediment Quality Assessment, Status and Needs* (EPA-823-R-00-001, February 2000).

TABLE 7-7
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN GROUNDWATER NEAR THE DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening					Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Water Screening Value (SWSV)[2]	North Carolina Fresh Surface Water Quality Standard	Refined SWSV Mean HQ [3]	NCWQS Mean HQ [3]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Mean Background?				
Volatiles (ug/L)													
1,1,1,2-Tetrachloroethane	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
1,1,2-Trichloro-1,2,2-trifluoroethane	4	5	NA	NA	NA	NA	ND	NA	NA	0/2	No	No	Not Detected
1,1-Dichloroethane	3	2.6429	47	NA	0.01	NA	0.50 J	NA	NA	1/7	No	No	Mean HQ < 1.0
1,1-Dichloropropene	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
1,2,3-Trichlorobenzene	4	1.5714	8	NA	0.20	NA	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
1,2,4-Trimethylbenzene	3	3.4286	33	NA	0.10	NA	17.00	NA	NA	3/7	No	No	Mean HQ < 1.0
1,2-Dibromo-3-chloropropane (DBCP)	4	2.7143	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
1,2-Dibromoethane (EDB)	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
1,2-Dichloroethene (cis)	3	14.1143	NA	NA	NA	NA	86.00	NA	NA	5/7	No	No	See text
1,3,5-Trimethylbenzene	4	1.5714	71	NA	0.02	NA	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
1,3-Dichloropropane	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
2,2-Dichloropropane	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
2-Butanone (MEK)	4	5	2200	NA	<0.01	NA	ND	NA	NA	0/2	No	No	Mean HQ < 1.0 Not Detected
2-Chlorotoluene	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
2-Hexanone (MBK)	4	5	99	NA	0.05	NA	ND	NA	NA	0/2	No	No	Mean HQ < 1.0 Not Detected
4-Chlorotoluene	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
4-Isopropyltoluene	3	1.7286	NA	NA	NA	NA	6.40 J	NA	NA	2/7	No	No	See text
4-Methyl-2-pentanone (MIBK)	4	5	170	NA	0.03	NA	ND	NA	NA	0/2	No	No	Mean HQ < 1.0 Not Detected
Acetone	4	5	1500	NA	<0.01	NA	ND	NA	NA	0/2	No	No	Mean HQ < 1.0 Not Detected
Bromobenzene	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
Bromochloromethane	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
Bromodichloromethane	4	2.7143	4320	NA	<0.01	NA	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
Butylbenzene, sec-	3	2.2857	NA	NA	NA	NA	5.00	NA	NA	2/7	No	No	See text
Butylbenzene, tert-	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
Carbon Disulfide	4	5	0.92	NA	5.43	NA	ND	NA	NA	0/2	No	No	Not Detected
Carbon Tetrachloride	5	2.7143	352	0.4	<0.01	6.79	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
Chloroethane	4	2.7143	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
Cyclohexane	4	5	NA	NA	NA	NA	ND	NA	NA	0/2	No	No	Not Detected
Dibromochloromethane	4	2.7143	9.7	NA	0.28	NA	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
Dibromomethane	4	1.6667	NA	NA	NA	NA	ND	NA	NA	0/6	No	No	Not Detected
Dichlorodifluoromethane (Freon-12)	4	2.7143	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
Hexachlorobutadiene	2	1.5714	0.93	NA	1.69	NA	ND	NA	NA	0/7	Yes	No	Not Detected
Isopropylbenzene (Cumene)	3	2.2857	2.6	NA	0.77	NA	2.00 J	NA	NA	2/7	No	No	Mean HQ < 1.0

TABLE 7-7
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN GROUNDWATER NEAR THE DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening					Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Water Screening Value (SWSV)[2]	North Carolina Fresh Surface Water Quality Standard	Refined SWSV Mean HQ [3]	NCWQS Mean HQ [3]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Mean Background?				
Volatiles (ug/L)(Cont.)													
Methyl Acetate	4	5	NA	NA	NA	NA	ND	NA	NA	0/2	No	No	Not Detected
Methyl Cyclohexane	3	3	NA	NA	NA	NA	1.00 J	NA	NA	1/2	No	No	See text
Methyl Tert-Butyl Ether (MTBE)	4	5	11070	NA	<0.01	NA	ND	NA	NA	0/2	No	No	Mean HQ < 1.0 Not Detected
Naphthalene	1	51.2	62	NA	0.83	NA	328.00	NA	NA	4/7	No	No	Mean HQ < 1.0
n-Butylbenzene	3	12.2143	NA	NA	NA	NA	49.00	NA	NA	3/7	No	No	See text
n-Propylbenzene	3	2	128	NA	0.02	NA	4.00	NA	NA	1/7	No	No	Mean HQ < 1.0
Styrene (Ethenylbenzene)	4	2.7143	72	NA	0.04	NA	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
Toluene	5	2.4714	175	0.36	0.01	6.87	4.00 J	NA	NA	4/7	No	No	Mean HQ < 1.0
Trichloroethene (TCE)	3	10.5286	21	NA	0.50	NA	60.00	NA	NA	3/7	No	No	Mean HQ < 1.0
Trichlorofluoromethane	4	5	NA	NA	NA	NA	ND	NA	NA	0/2	No	No	Not Detected
Vinyl Chloride	4	2.7143	930	NA	<0.01	NA	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
Xylene, m/p-	3	3.1429	13	NA	0.24	NA	4.00 J	NA	NA	2/7	No	No	Mean HQ < 1.0
Xylene, o-	3	2.7143	13	NA	0.08	NA	1.00 J	NA	NA	1/7	No	No	Mean HQ < 1.0
Xylenes, total	3	3.1429	13	NA	0.24	NA	4.00 J	NA	NA	2/7	No	No	Mean HQ < 1.0
Semivolatile Organic Compounds (ug/L)													
1,1'-Biphenyl	4	5	14	NA	0.36	NA	ND	NA	NA	0/3	No	No	Mean HQ < 1.0 Not Detected
2,2'-Oxybis[1-chloropropane]	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
2,4,5-Trichlorophenol	4	12.5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
2,4,6-Trichlorophenol	2	5	3.2	NA	1.56	NA	ND	NA	NA	0/3	No	No	Not Detected
2,4-Dinitrophenol	2	12.5	6.2	NA	2.02	NA	ND	NA	NA	0/3	No	No	Not Detected
2,6-Dinitrotoluene	4	5	81	NA	0.06	NA	ND	NA	NA	0/3	No	No	Mean HQ < 1.0 Not Detected
2-Chloronaphthalene	4	5	0.396	NA	12.63	NA	ND	NA	NA	0/3	No	No	Not Detected
2-Methylnaphthalene	3	6	4.7	NA	1.28	NA	8.00 J	NA	NA	1/3	No	Yes	Mean HQ > 1.0
2-Methylphenol (o-Cresol)	4	5	13	NA	0.38	NA	ND	NA	NA	0/3	No	No	Mean HQ < 1.0 Not Detected
2-Nitroaniline	4	12.5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
3,3'-Dichlorobenzidine	4	5	4.5	NA	1.11	NA	ND	NA	NA	0/3	No	No	Not Detected
3-Nitroaniline	4	12.5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
4,6-Dinitro-2-methylphenol	2	12.5	2.3	NA	5.43	NA	ND	NA	NA	0/3	No	No	Not Detected
4-Chloro-3-methylphenol	2	5	0.3	NA	16.67	NA	ND	NA	NA	0/3	No	No	Not Detected
4-Chloroaniline	4	5	232	NA	0.02	NA	ND	NA	NA	0/3	No	No	Mean HQ < 1.0 Not Detected
4-Chlorophenyl-phenylether	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	Yes	No	Not Detected
4-Methylphenol (p-Cresol)	4	5	25	NA	0.20	NA	ND	NA	NA	0/3	No	No	Mean HQ < 1.0 Not Detected
4-Nitroaniline	4	12.5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Acenaphthylene	4	5	4840	NA	<0.01	NA	ND	NA	NA	0/3	Yes	No	Mean HQ < 1.0 Not Detected

TABLE 7-7
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN GROUNDWATER NEAR THE DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening					Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Water Screening Value (SWSV)[2]	North Carolina Fresh Surface Water Quality Standard	Refined SWSV Mean HQ [3]	NCWQS Mean HQ [3]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Mean Background?				
Semivolatile Organic Compounds (ug/L)(Cont.)													
Acetophenone	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Anthracene	4	5	0.012	NA	416.67	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Atrazine	4	5	1.8	NA	2.78	NA	ND	NA	NA	0/3	No	No	Not Detected
Benzaldehyde	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Benzo(a)anthracene	4	5	0.018	NA	277.78	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Benzo(a)pyrene	4	5	0.014	NA	357.14	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Benzo(b)fluoranthene	4	5	9.07	NA	0.55	NA	ND	NA	NA	0/3	Yes	No	Mean HQ < 1.0 Not Detected
Benzo(g,h,i)perylene	4	5	7.64	NA	0.65	NA	ND	NA	NA	0/3	Yes	No	Mean HQ < 1.0 Not Detected
Benzo(k)fluoranthene	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Bis(2-chloroethoxy)methane	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Bis(2-ethylhexyl) Phthalate (BEHP)	2	5	0.299	NA	16.72	NA	ND	NA	NA	0/3	No	No	Not Detected
Caprolactam	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Carbazole	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Chrysene	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Dibenz(a,h)anthracene	4	5	4	NA	1.25	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Dibenzofuran	4	5	3.7	NA	1.35	NA	ND	NA	NA	0/3	No	No	Not Detected
Di-n-butyl Phthalate (DBP)	2	5	9.4	NA	0.53	NA	ND	NA	NA	0/3	No	No	Mean HQ < 1.0 Not Detected
Di-n-octyl Phthalate	2	5	0.3	NA	16.67	NA	ND	NA	NA	0/3	No	No	Not Detected
Fluorene	4	5	3	NA	1.67	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Hexachlorobenzene	4	5	0.0003	NA	16666.67	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Hexachlorocyclopentadiene	2	5	0.07	NA	71.43	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Hexachloroethane	2	5	9.8	NA	0.51	NA	ND	NA	NA	0/3	Yes	No	Mean HQ < 1.0 Not Detected
Indeno(1,2,3-cd)pyrene	4	5	4.31	NA	1.16	NA	ND	NA	NA	0/3	Yes	No	Not Detected
n-Nitrosodi-n-propylamine	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Pentachlorophenol	2	12.5	12.79430308	NA	0.98	NA	ND	NA	NA	0/3	Yes	No	Mean HQ < 1.0 Not Detected
Phenanthrene	4	5	0.4	NA	12.50	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Pyrene	4	5	0.025	NA	200.00	NA	ND	NA	NA	0/3	Yes	No	Not Detected

Notes:

U = Chemical was not detected above the method detection limit
J = Estimated Value
NJ = Presumptive evidence for the presence of the material at an estimated value.
COPC = Ecological Contaminant of Potential Concern
HQ = Hazard Quotient
ug/L = microgram per liter
NA = Not Applicable
NCWQS = North Carolina Water Quality Standard
ND = Not Detected
EPA = Environmental Protection Agency
ESV = Ecological Screening Value
MDL = Maximum detection limit

TABLE 7-7
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN GROUNDWATER NEAR THE DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening					Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Water Screening Value (SWSV)[2]	North Carolina Fresh Surface Water Quality Standard	Refined SWSV Mean HQ [3]	NCWQS Mean HQ [3]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Mean Background?				

Notes (Continued):

[1] See Table 7-4 and text for definitions of contaminant categories.

[2] References for alternative screening values are provided on Table 7-5.

[3] The mean HQ represents the mean (half non-detect) concentration divided by the screening value. In cases where the mean exceeds the maximum the maximum value is used.

[4] The background concentration presented is for shallow portions of the surficial aquifer (Base Background Groundwater Investigation [Baker 2002]).

[5] Compound is identified as an "important bioaccumulative chemical" in the USEPA document *Bioaccumulation Testing and Interpretation for the Purpose of Sediment Quality Assessment, Status and Needs* (EPA-823-R-00-001, February 2000).

(USEPA, 1992), RAGS Part E, Supplemental Guidance for Dermal Risk Assessment Interim Final (USEPA, 2004b), Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure (USEPA, 1993), and Standard Default Exposure Factors, Interim Final (USEPA, 1991b). The Central Tendency (CT) risk descriptor was also used for exposure scenarios when the RME scenarios indicated a potential risk to human health, to more completely present the range of possible risks. The CT exposure calculations use less conservative exposure factors (as appropriate) to calculate chemical intakes for the CT-case scenarios. In this baseline HHRA, the CT exposure scenario was calculated only for those RME exposure scenarios that resulted in unacceptable risk or hazard levels. The inclusion of the CT exposure scenario provides a range of potential carcinogenic risks and noncarcinogenic health hazards with which to make informed risk management decisions when determining remedial action.

6.3.1 Potential Human Receptors

Camp Lejeune operates as a Marine Corps base. It is assumed that long-term plans for the facility and land use are generally the same as the present plan. Based on information available regarding the physical features, site setting, site historical activities, and current and expected land uses, four potential human receptors have been selected for evaluation. These include:

- Future Adolescent (7-16 years) Trespassers
- Current Military Base Personnel
- Future Resident Adults and Children (1-6 years)
- Future Construction Workers

SWMUs 303/318 is located in the Marine Corps Air Station (MCAS) New River area east of Bancroft Street and adjacent to the helicopter wash pad. SWMU 303 consists of two steel, ASTs that are contained within a concrete, bermed structure. SWMU 318 is a concrete, multi-chambered oil/water separator and grit chamber associated with the helicopter wash pad. The helicopter wash pad is a flat 160-foot by 120-foot concrete area bermed on three sides with two drains that collect the runoff and the associated piping transfers the liquids to the oil/water separator. The area immediately surrounding the SWMU is covered with grass. An open drainage ditch that collects stormwater run-off from the surrounding area is located east of the oil/water separator. Access to the study area is restricted to military employees. Current

receptors include military Base personnel who may be involved in maintenance activities or airfield operations in the area.

Current adult military Base personnel who work or train in the study area may be exposed to COPCs and media of concern at the SWMU. These include military personnel stationed at the Base. A standard tour of duty of four years was assumed. Workers were evaluated for incidental ingestion of and dermal contact with surface soil and inhalation of fugitive dusts and volatiles from the surface soil. It should be noted that exposure to surface soil in the study is considered unlikely since it is covered with grass.

At present, shallow groundwater in the vicinity of the SWMU is not utilized for potable purposes. For the current military Base personnel receptors, potable water is derived from water supply wells that withdraw water from the deeper Castle Hayne aquifer. The groundwater is treated at one of five plants on the Base. The nearest active water supply well is located approximately 2,400-feet hydraulically upgradient of the SWMU (see Section 3.2). As a result, current groundwater exposure was not assessed. Exposure to subsurface soil in the current scenario is unlikely for the receptor population. Consequently, subsurface soil exposure for current workers was not considered in this HHRA.

Although residential development by the military or general public is unlikely in the industrialized area of the SWMU, future hypothetical residential exposure to children and adults was evaluated. The future adult and child residential receptors could potentially be exposed to COPCs in surface soil by ingestion and dermal contact, and inhalation of dusts and volatiles from surface soil. Residential receptors could also potentially be exposed to COPCs in subsurface soil (ingestion and dermal contact, and inhalation of dusts) should that soil be excavated. The depths of subsurface soil samples considered in the risk evaluation for future residents were 1 to 11 feet bgs. Groundwater at the SWMU is currently not utilized as a potable source. However, it is possible that the groundwater could be used for potable purposes in the future. Therefore, in accordance with USEPA guidance, groundwater exposure via ingestion, dermal contact, and inhalation of volatiles was conservatively evaluated for future residential receptors.

Future construction workers that may perform excavation and construction at the SWMU were also evaluated for incidental ingestion and dermal contact exposures to excavated surface and subsurface soil, as well as the inhalation of fugitive dusts and volatiles emanating from surface

and subsurface soil during excavation/construction activities. The depths of subsurface soil samples considered in the risk evaluation for construction workers were 1 to 11 feet bgs. Construction workers may also be exposed via dermal contact to shallow groundwater when performing excavation activities at the SWMU. Therefore, dermal contact with shallow groundwater is also evaluated for this receptor as a potential exposure pathway.

In summary, the following potential human receptors and exposure pathways were retained for quantitative evaluation in this baseline HHRA.

Current Military Base Personnel

- Incidental Ingestion of Surface Soil
- Dermal Contact with Surface Soil
- Inhalation of Fugitive Dusts and Volatiles Emanating from Surface Soil

Future Adolescent (Ages 7-16 Years) Trespassers

- Incidental Ingestion of Surface Soil
- Dermal Contact with Surface Soil
- Inhalation of Fugitive Dusts and Volatiles Emanating from Surface Soil

Future Adult and Child (Ages 1-6 Years) Residents

- Incidental Ingestion of Surface and Subsurface Soil
- Dermal Contact with Surface and Subsurface Soil
- Inhalation of Fugitive Dusts and Volatiles Emanating from Surface and Subsurface Soil
- Ingestion of Groundwater
- Dermal Contact with Groundwater
- Inhalation of VOCs in Groundwater while showering

Future Construction Workers

- Incidental Ingestion of Surface and Subsurface Soil
- Dermal Contact with Surface and Subsurface Soil

- Inhalation of Fugitive Dusts and Volatiles from Surface and Subsurface Soil
- Dermal Contact with Shallow Groundwater

6.3.2 Conceptual Site Model

Development of a conceptual site model of potential exposure is critical in evaluating exposures for the human receptors. The conceptual site model considers all reasonable current and future potential exposures and media of concern under a no-action scenario. Current and potential future exposure scenarios for the SWMU are summarized in the conceptual site model presented as Figure 6-1. Current exposures evaluated at the SWMU included military Base personnel. Future exposures evaluated at the SWMU included adolescent trespassers, construction workers, and residents.

Potential contaminant release mechanisms from affected media include stormwater runoff, leaching to underlying groundwater, and advective transport in the direction of groundwater flow. Potentially affected media at the SWMU may include surface and subsurface soil and groundwater.

The current/potential future land use scenarios considered adult exposures. In addition, a residential child, 1-6 years old, and an adolescent trespasser, 7-16 years old, were also considered. Exposure routes (i.e., ingestion, dermal contact, and inhalation) for each exposure scenario are summarized in Figure 6-1.

6.3.3 Quantification of Exposure

Exposure to contaminants is quantified using 1) data from the SWMU (i.e., concentrations of contaminants) and 2) determining human exposure to the environmental media. The chemical concentrations used in the estimation of chronic daily intakes (CDIs) and dermally-absorbed doses (DADs) for each medium are considered to be representative of the types of potential exposures encountered by each receptor throughout the time of exposure. The equations used to calculate the CDIs and DADs for each receptor and exposure pathway are presented in Section 6.3.5. Groundwater is in motion, thus chemical concentrations detected in these media change frequently over time. Soil generally moves more slowly through erosion and deposition. Therefore, groundwater contaminant concentrations may be best represented by the most recently

collected data, while soil concentrations can include some older data, as appropriate. The manner in which environmental data are represented also depends on the number of samples and sampling locations available for a given area and a given medium. For example, exposure can occur at a portion of the SWMU (i.e., a "hotspot") or the entire SWMU, depending on the type of scenario considered for a given receptor.

6.3.4 Data Analysis

USEPA recommends using the average concentration to represent "a reasonable estimate of the concentration likely to be contacted over time" (USEPA, 1989). This concentration, commonly termed the exposure point concentration (EPC), is a conservative estimate of exposure of individuals to chemicals of potential concern at hazardous waste sites. The EPC is determined for each individual exposure unit within a site. An exposure unit is the area throughout which a receptor moves and encounters an environmental medium for the duration of the exposure. Unless there is site-specific evidence to the contrary, an individual receptor is assumed to be equally exposed to media within all portions of the exposure unit over the time frame of the risk assessment (USEPA, 2002a).

USEPA's most recent guidance, Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, 2002a), provides tools to calculate upper confidence limits to be used as EPCs in risk assessments. The USEPA 2002 guidance recommends the use of the software package, ProUCL (USEPA, 2001b), to calculate upper confidence limits for use in risk assessments. The most recent version of ProUCL is Version 3.0.

The ProUCL software has been developed by USEPA to compute an appropriate 95% UCL of the unknown population mean. All upper confidence limit computation methods contained in the USEPA guidance documents are available in ProUCL, Version 3.0. ProUCL tests for normality, lognormality, and a gamma distribution of the data set, and computes a conservative and stable 95% UCL of the unknown population mean (assuming the data set consists of points from a single population) (USEPA, 2001b). Several parametric and distribution-free non-parametric methods are included in ProUCL. The upper confidence limit computation methods in ProUCL cover a wide range of skewed data distributions arising from the various environmental applications.

USEPA Region IV groundwater EPC interim guidance (USEPA, 2002b) states that risk screening (carcinogenic and noncarcinogenic) for groundwater exposure should be estimated at each monitoring location for all COPCs. This is to allow the risk assessor to determine if there is (are) a COPC(s) outside the defined contaminant plume that could potentially drive unacceptable risk but is masked because the well is located outside the plume. The center of the plume is defined as the well with the highest summed risk and the wells in close proximity to that well. The average concentration at those points should then be calculated. As previously noted in Section 6.2.2, contaminant plumes were identified for both shallow and deep groundwater. Therefore, average concentrations were calculated from concentrations of the COPCs identified in each plume and used as the exposure concentrations.

Frequencies of detection, as well as maximum detected values, are presented in Tables 2.1 through 2.8 of Appendix H. The computational output from the ProUCL calculations performed for each COPC is presented on Tables 3.1 through 3.5 of Appendix H and in Appendix I. The equations for estimating intakes due to direct exposures to site-related chemicals for the various identified pathways are presented in Section 6.3.5 and on the risk calculation spreadsheets found in Appendix J.

For results reported as "nondetect" (i.e., results flagged with the following validation qualifiers: U and UJ), a value of one half of the sample-specific detection limit was used to calculate the 95% UCL; the actual value could be between zero and a value just below the detection limit. 95% UCLs were calculated only for the constituents detected in at least one sample collected from the environmental medium of interest.

Estimated concentrations also were used to calculate the 95% UCL, such as "J" qualified (estimated) data. Reported concentrations qualified with an "R" (rejected) were not used in the statistical evaluation.

As previously mentioned, duplicate sample data were averaged with corresponding environmental sample data and re-included into the data set for these risk evaluations. In instances where the original and duplicate sample result were either both detected or both non-detected, the values were averaged for the risk assessment. In instances when the original and duplicate sample result contained one detection and one non-detection, the detected value was

averaged with one-half of the detection limit of the non-detected value and the averaged sample result was considered a detection.

Statistical data summary tables (i.e., ProUCL output) for COPCs in each medium sampled (i.e. surface soil and groundwater) are found in the Statistical Summaries presented in Appendix I. These tables provide the arithmetic mean, the standard deviation, and the upper 95 percent confidence limit value based on type of distribution (as determined by ProUCL).

6.3.5 Calculation of Chronic Daily Intakes

In order to numerically estimate the risks for current and future human receptors at the SWMU, a CDI must be estimated for each COPC in every retained exposure pathway. These equations were obtained from USEPA guidance (USEPA, 1989).

The following paragraphs present the general equations used in the calculation of CDIs for each potential exposure pathway. The exposure input parameters used in the calculation of CDIs are presented in Section 6.3.6. Input parameters were taken from USEPA's default exposure factors guidelines where available and applicable. All inputs not defined by USEPA were derived from USEPA documents concerning exposure or from best professional judgment. All exposure assessments incorporate the representative contaminant concentrations in the estimation of intakes. Therefore, only one exposure scenario was developed for each exposure route/receptor combination.

CDIs for carcinogenic effects incorporate terms to represent the exposure duration (years) over the course of a lifetime (70 years or 25,550 days) (USEPA, 1989). Noncarcinogenic CDIs, on the other hand, were estimated using the concept of an average annual exposure. The intake incorporates terms describing the exposure time and/or frequency representing the number of hours per day and the number of days per year that exposure occurs. In general, noncarcinogenic CDIs for many exposure routes (e.g., soil ingestion) are greater for children than adults because of the differences in body weights, similar exposure frequencies, and higher ingestion rates.

6.3.5.1 Soil

Incidental Ingestion of Soil

The following equation was used in the calculation of a CDI (mg/kg/day) for a human receptor who incidentally ingests soil at the site:

$$CDI = \frac{Cs \; x \; IR \; x \; FI \; x \; CF \; x \; EF \; x \; ED}{BW \; x \; AT_c \; or \; AT_{nc}}$$

Where:

Cs	=	chemical concentration in soil (mg/kg)
IR	=	ingestion rate (mg/day)
FI	=	fraction of soil ingested from the source (unitless)
CF	=	conversion factor (10^{-06} kg/mg)
EF	=	exposure frequency (days/yr)
ED	=	exposure duration (yrs)
BW	=	adult body weight (kg)
AT_c	=	averaging time carcinogens (days)
AT_{nc}	=	averaging time, noncarcinogens (days)

Relevant equations and factors required for estimating the daily intake are presented in Appendix J.

Dermal Contact with Soil

The absorbed dose associated with the potential dermal contact of COPCs in soil was calculated using the following equation (USEPA, 1989):

$$DAD = \frac{Cs \; x \; SA \; x \; AF \; x \; ABS \; x \; EF \; x \; ED \; x \; CF}{BW \; x \; AT}$$

Where:

DAD	=	Dermally Absorbed Dose, mg/kg-day
Cs	=	Chemical concentration in the soil, mg/kg
AF	=	Adherence Factor, milligram per square centimeter day (mg/cm^2-d)
ABS	=	Absorbed fraction, unitless
CF	=	Conversion Factor, 10^{-06} mg/kg
SA	=	Surface Area of exposed skin, cm^2
EF	=	Exposure Frequency, days/year
ED	=	Exposure Duration, years
BW	=	average Body Weight, kg
AT	=	Averaging Time, days

Relevant equations and factors required for estimating the absorbed dose are presented in Appendix J.

Inhalation of Fugitive Dust and Volatiles from Soil

The daily intake resulting from the inhalation of COPCs adsorbed onto fugitive dust particulate and volatilized into the air was estimated using the following equation (USEPA, 1989):

$$CDI = \frac{Ca \ x \ RR \ x \ ET \ x \ EF \ x \ ED}{BW \ x \ AT}$$

Where:

CDI	=	Chronic Daily Intake, mg/kg-day
Ca	=	Chemical concentration in air, milligrams per cubic meter (mg/m^3)
RR	=	Respiration Rate, m^3/hour
ET	=	Exposure Time, hours/day
EF	=	Exposure Frequency, days/year
ED	=	Exposure Duration, years
BW	=	average Body Weight, kg
AT	=	Averaging Time, days

The air concentration (Ca) of a chemical in fugitive dust emissions was estimated from the following equation, as determined by Cowherd (1985).

$$Ca = Cs \times (1/PEF + 1/VF)$$

Where:

Ca	=	Chemical concentration in air as fugitive dust, mg/m^3
Cs	=	Concentration of chemical in the soil, mg/kg
PEF	=	Particulate Emission Factor, m^3/kg
VF	=	Volatilization Factor, m^3/kg

Volatilization factors used in this HHRA were obtained from the USEPA Region IX PRG tables (USEPA, 2004a). Relevant equations and factors required for estimating the dose are presented in Appendix J.

6.3.5.2 Groundwater

Ingestion of Groundwater

The daily intake associated with the direct potential ingestion of the COPCs in groundwater under a drinking water scenario were calculated using the following equation (USEPA, 1989):

$$CDI = \frac{Cw \times IR \times EF \times ED}{BW \times AT}$$

Where:

CDI	=	Chronic Daily Intake, mg/kg-day
Cw	=	Chemical concentration in water, mg/L
IR	=	Ingestion Rate, L/day
EF	=	Exposure Frequency, days/year
ED	=	Exposure Duration, years
BW	=	average Body Weight, kg
AT	=	Averaging Time, days

Relevant equations and factors required for estimating the daily intake dose are presented in Appendix J.

Dermal Contact with Groundwater

The absorbed dose associated with potential dermal contact with COPCs in groundwater was calculated using the following equation (USEPA, 1989 and 2004b):

$$CDI = \frac{DA_{event} * EF * ED * CF * SA}{BW \ x \ AT}$$

Where:

CDI	=	Chronic Daily Intake, mg/kg-day
DA_{event}	=	Absorbed dose per event (mg/cm^2-event) (assume 1 event/day)
EF	=	Exposure Frequency, days/year
ED	=	Exposure Duration, years
CF	=	Conversion Factor, 1 L/1000 cm^3
SA	=	Surface Area of exposed skin, cm^2
BW	=	average Body Weight, kg
AT	=	Averaging Time, days

The following equations are used to calculate DA_{event} for organic compounds:

If $t_{event} \leq t^*$, then

$$DA_{event} = 2FA * K_p * C_w * \sqrt{\frac{6\tau_{event} * t_{event}}{\pi}}$$

If $t_{event} > t^*$, then

$$DA_{event} = FA * K_p * C_w \left[\frac{t_{event}}{1+B} + 2\tau_{event} \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right]$$

Where:

DA_{event}	=	Absorbed dose per event (mg/cm^2-event)
FA	=	Fraction absorbed (dimensionless)
K_p	=	Dermal permeability coefficient of compound in water (cm/hour)
Cw	=	Chemical concentration in water (mg/cm^3)
τ_{event}	=	Lag time per event (hour /event)
t_{event}	=	Event duration (hour /event) (assume 1 event/day)
t*	=	Time to reach steady-state (hour) = $2.4\tau_{event}$
B	=	Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (ve) (dimensionless).

The following equation is used to calculate DA_{event} for inorganic and highly ionized organic chemicals:

$$DA_{event} = K_p * C_w * t_{event}$$

Where:

DA_{event}	=	Absorbed dose per event (mg/cm^2-event)
K_p	=	Dermal permeability coefficient of compound in water (cm/ hour)
C_w	=	Chemical concentration in water (mg/cm^3)
t_{event}	=	Event duration (hours/event) (assume 1 event/day)

Relevant equations and factors required for estimating the absorbed dose are presented in Appendix J.

Inhalation of Volatiles in Groundwater

Inhalation of volatiles in groundwater was calculated according to guidance put forth in the USEPA Region IV Bulletin. Therefore, it was assumed that inhalation of volatiles in groundwater was equivalent to ingesting two liters of water per day. In order to express this quantitatively, the carcinogenic risks and noncarcinogenic health hazards for the ingestion of volatile organic COPCs only were summed and incorporated into the total site risk. This was applied to the adult resident receptors only, as young children typically do not shower.

Relevant equations and factors required for estimating dose were calculated and are presented in Appendix J.

6.3.6 Exposure Input Parameters

Tables 4.1.RME through 4.3a.CT of Appendix H present the exposure factors used in the estimation of potential CDIs for COPCs retained for each receptor identified below. USEPA promulgated exposure factors are used in conjunction with USEPA standard default exposure factors. When USEPA exposure factors are not available, best professional judgment and site-specific information are used to derive a conservative and defensible value. The following paragraphs present the rationale for the selection of exposure factors for each receptor group evaluated in the baseline HHRA.

6.3.6.1 Current Military Personnel

This scenario assumes that current adult Base military personnel working on-site could come into contact with surface soil at the SWMU. Therefore, this receptor was evaluated for potential exposure to surface soil via incidental ingestion, dermal contact, and inhalation of fugitive dust and volatiles. A summary of the exposure parameters is discussed in the following paragraphs and presented on Tables 4.1.RME and 4.1a.RME of Appendix H.

The ingestion rate for military personnel exposed to surface soil was assumed to be 100 mg/day (USEPA, 1993), and the fraction ingested was assumed to be 100 percent (professional judgment). An EF of 250 days per year (USEPA, 2004b) was used in conjunction with an exposure duration of 4 years (standard military tour of duty). A respiration rate of 0.55 m^3/hr (representing an average of 11.3 m^3/day for women and 15.2 m^3/day for men) for an adult (USEPA, 1997) was also used. An ET of 8 hours (professional judgment) was used to represent an average workday. An AT of 70 years or 25,550 days was used for exposure to potentially carcinogenic compounds while an AT of 1,460 days was used for noncarcinogenic exposures.

There is a potential for base personnel to absorb COPCs by dermal contact. A skin surface area of 3,300 cm^2 for an adult (USEPA, 2004b) assumed to wear a short-sleeved shirt, long pants, and shoes, was used to evaluate dermal contact with soil. An SAF of 0.2 mg/cm^2 was used and is

based on the 50th percentile weighted SAF for utility workers, which is the activity determined by USEPA to represent a reasonable, high-end contact activity (USEPA, 2004b). Dermal absorption fractions provided in USEPA RAGS Part E (USEPA, 2004b) or Region IV default dermal absorption fractions of 0.01 for organics, and 0.001 for inorganics (USEPA, 2000) were also used to estimate soil exposures.

6.3.6.2 Future Adolescent (7 - 16 years) Trespassers

This scenario assumes that future adolescent (7 - 16 years) trespassers could come into contact with surface soil at the SWMU. These receptors were evaluated for potential exposure to surface soil via incidental ingestion, dermal contact, and inhalation of fugitive dust and volatiles. A summary of the exposure parameters is discussed in the following paragraphs and presented on Tables 4.1.RME and 4.1a.RME of Appendix H.

A 45 kg adolescent (USEPA, 1997) was assumed to have an exposure duration of 10 years (USEPA, 2000). The exposure time (ET) was estimated to be 4.04 hours per day for an adolescent (USEPA, 1997). The ingestion rate was assumed to be 100 mg/day for the adolescent (USEPA, 1993), with a 100% fraction ingested from the source (professional judgment). The exposure frequency (EF) was assumed to be 52 events/year, based on anticipated exposures of two days/week (i.e., a weekend) for 6 months (professional judgment). A respiration rate 0.576 m^3/hr for adolescent (USEPA, 1997) was also used. The respiration rate used for the adolescent represents the average for an individual aged 9 to 18 years old. Averaging times (ATs) 3,650 days for adolescents for noncarcinogens, and 25,550 days for carcinogens were also used (USEPA, 1989).

The USEPA recommended weighted 0.2 mg/cm^2 SAF for the young child was conservatively used for the adolescent trespasser and is based on the 95th percentile weighted SAF for children playing at a day care center or in wet soil (USEPA, 2004b). Dermal absorption values provided in USEPA RAGS Part E (USEPA, 2004b) or Region IV default dermal absorption values of 0.01 for organics, and 0.001 for inorganics (USEPA, 2000) were also used to estimate soil exposures. A skin surface area of 5,300 cm^2 for the adolescent (representing 50th percentile body-part SAF [average of male/female] for the head, forearms, hands, lower legs and feet of a <7 to <18 year old) (USEPA 2001) was assumed for the surface soil scenario.

6.3.6.3 Future Adult and Young Child Residents

This scenario assumes that future adult and young child (1-6 years) residents could come into contact with surface soil and subsurface soil at the SWMU. It is also conservatively assumed that the groundwater will be potable. Therefore, these receptors could come into contact with contaminants detected in the groundwater under a drinking water scenario in the future, in addition to coming into contact with surface and subsurface soil. These receptors were then evaluated for potential exposure to surface and subsurface soil via incidental ingestion, dermal contact, and inhalation of fugitive dust and volatiles and groundwater via ingestion, dermal contact, and inhalation of VOCs while showering. A summary of the exposure parameters is discussed in the following paragraphs and presented on Tables 4.1.RME, 4.1a.RME, 4.1.CT, 4.1a.CT, 4.2.RME, 4.2a.RME, 4.2.CT, 4.2a.CT, 4.3.RME, 4.3a.RME, 4.3.CT, and 4.3a.CT of Appendix H. Unless otherwise noted, the CT exposure parameters are the same as for RME.

Future adult and young child residents could contact surface or subsurface soil during outdoor recreational activities such as playing, walking, or running, in the area immediately surrounding their homes or while performing gardening activities. A 70 kg adult and a 15 kg child were assumed for exposure durations of 24 years and 6 years, respectively (USEPA, 1993). Exposure durations of 7 years for the adult and 2 years for the child were used for CT exposure (USEPA, 1993). Exposure times were estimated to be 1.5 hours per day for adults and 5.57 hours per day for the child (USEPA, 1997). The ingestion rate was assumed to be 200 mg/day for the young child and 100 mg/day for the adult (USEPA, 1993), with a 100% fraction ingested from source (professional judgment), over 350 days/year (USEPA, 2004b). Ingestion rates of 100 mg/day for the young child and 50 mg/day for the adult over 234 days per year were used for CT exposure (USEPA, 1993). Respiration rates of 0.308 m^3/hr for the child and 0.55 m^3/hr for the adult (USEPA, 1997) were also used. The respiration rate used for the young child represents the average for an individual aged 0 to 8 years old. Averaging times of 8,760 days for adults and 2,190 days for children for noncarcinogens, and 25,550 days for carcinogens were also used (USEPA, 1989).

The USEPA recommended weighted SAF of 0.07 mg/cm^2 was used for the residential adult (USEPA, 2004b). This is based on the 50th percentile weighted SAF for gardeners, which is the activity determined to represent a reasonable, high-end contact activity. The USEPA recommended weighted 0.2 mg/cm^2 SAF for the young child was used and is based on the 95th

percentile weighted SAF for children playing at a day care center or in wet soil (USEPA, 2004b). USEPA recommended SAF values of 0.01 mg/cm^2 for the adult and 0.04 mg/cm^2 for the child were used for the CT exposure scenario (USEPA, 2004b). Dermal absorption values provided in USEPA RAGS Part E (USEPA, 2004b) or Region IV default dermal absorption values of 0.01 for organics, and 0.001 for inorganics (USEPA, 2000) were also used to estimate soil exposures. Skin surface areas of 2,800 cm^2 for the young child and 5,700 cm^2 for the adult (USEPA, 2004b) were assumed for the surface soil scenario. These are the SA values currently recommended by the USEPA for exposure to contaminated soil and are the averages of the 50th percentiles for males and females greater than 18 years of age (adults) and from <1 to <6 years old (young children). As recommended in RAGS Part E, the SA values used for the RME scenario were also assumed for the CT exposure scenario.

Potential exposures to groundwater COPCs may occur under a drinking water scenario. Exposure to total concentrations of groundwater inorganic COPCs were evaluated as per USEPA Region IV guidance. Exposure pathways evaluated for future residents include ingestion, dermal contact, and inhalation of VOCs while showering. Groundwater ingestion rates of 2 L/day and 1 L/day, respectively, were assumed for the adult and young child residents (USEPA, 1993). Exposure frequency of 350 days per year was also assumed for groundwater. Groundwater ingestion rates of 1.4 L/day and 1 L/day (adult and child, respectively) over 234 days per year were used for CT exposure (USEPA, 1993). Total body surface areas of 6,600 cm^2 and 18,000 cm^2 (50th percentile values for male and female young children or adults) (USEPA, 2004b) were assumed for the groundwater scenario for the young child and adult, respectively. For the RME scenario, exposure times of 0.58 hour/day and 1 hour/day were assumed for the adult and young child residents (USEPA, 2004b). For CT exposure, 0.25 hour/day and 0.33 hour/day were assumed for the adult and young child (USEPA, 2004b). All other exposure parameters were the same as the soil exposure parameters.

6.3.6.4 Future Adult Construction Workers

Potential exposures to soil COPCs may occur to construction workers while performing soil excavation and construction activities at the SWMU. Exposure pathways evaluated included incidental ingestion, dermal contact, and inhalation of fugitive dust and volatiles of surface and subsurface soil, and dermal contact with shallow groundwater. A summary of the exposure parameters is discussed in the following paragraphs and presented on Tables 4.1.RME,

4.1a.RME, 4.1.CT, 4.1a.CT, 4.2.RME, 4.2a.RME, 4.2.CT, 4.2a.CT, 4.3.RME, and 4.3.CT of Appendix H.

Exposure was assumed to occur for 8 hours per day for soil (USEPA, 1991b) and 2.6 hours per day for groundwater (professional judgment), 250 days per year (USEPA, 2004b), for a construction period of 1 year (professional judgment). A USEPA default value for the soil ingestion rate of 480 mg/day (USEPA, 1993), a 100% fraction ingested from source (professional judgment) and a respiration rate of 3.3 m^3/hour (USEPA, 1997) were also assumed for a 70 kg construction worker (USEPA, 1997). A skin surface area of 3,300 cm^2 for an adult (USEPA, 2001b) assumed to wear a short-sleeved shirt, long pants, and shoes, was used to evaluate dermal contact with soil and groundwater. The soil to skin adherence factor of 0.2 mg/cm^2 (USEPA, 2004b) was used. Dermal absorption values provided in USEPA RAGS Part E (USEPA, 2004b) or Region IV default dermal absorption values of 0.01 for organics, and 0.001 for inorganics (USEPA, 2000) were also used to estimate soil exposures. The averaging time of 365 for noncarcinogens and 25,550 days for carcinogens, respectively, were also used (USEPA, 1989).

USEPA believes construction workers are likely to experience substantial exposures to soils during excavation and other work activities. The equation to calculate particulate emission factor (PEF) for a construction scenario has been revised to focus exclusively on emissions from truck traffic on unpaved roads, which typically contribute the majority of dust emissions during construction. A site-specific PEF has been derived for the construction worker scenario for this risk assessment. The "study area" surrounding the SWMU is approximately 30 acres in size. The methodologies used to calculate the new PEF are taken from USEPA's Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (Peer Review Draft) (USEPA, 2001b). The following equation was used to calculate the construction scenario PEF:

$$PEF_{sc} = \frac{Q}{Csr} * \frac{1}{F_D} * \left[\frac{T * A_R}{556 * \left(\frac{W}{3}\right)^{0.4} * \left(\frac{365 - p}{365}\right) * VKT} \right]$$

Where:

PEF_{sc}	=	subchronic road particulate emission factor (m^3/kg)
Q/C_{sr}	=	Inverse of 1-h average air concentration along a straight road segment bisecting a 30 acre square site (g/m^2-s per kg/m^3)
F_D	=	dispersion correction factor (unitless) (0.185)
T	=	total time over which construction occurs (s) (8 hours/day for 250 days or 7.2×10^6 seconds)
A_R	=	surface area of contaminated road segment (m^2) (5,296 m^2)
W	=	mean vehicle weight (8 tons)
p	=	number of days with at least 0.01 inches of precipitation (days/year) (120 days for the area of Jacksonville, NC)
VKT	=	sum of fleet vehicle kilometers traveled during the exposure duration (km) (2,610 km assuming a site area of 30 acres)

The following assumptions were incorporated into the above-referenced parameters used to calculate the site-specific construction worker scenario. The SWMU is in an industrialized area of the Base. It was assumed that daily unpaved road traffic would consist of at most 20 cars (2 tons per car) and 10 trucks (20 tons per truck). A_R is based on a road length of 348 m and assumes a road width of 15.24 m. VKT is based on 30 vehicles traveling a road length of 348 m (or 0.348 km) for five days per week for 50 weeks (considering an EF of 250 days per year). Thus, a construction worker scenario PEF of 2.0×10^6 m^3/kg was calculated. This calculation is also presented in Appendix J.

6.4 Toxicity Assessment

This section will review the available toxicological information for COPCs retained for quantitative evaluation.

An important component of the HHRA process is the relationship between the dose of a compound (amount to which an individual or population is potentially exposed) and the potential for adverse health effects resulting from exposure to that dose. Dose-response relationships provide a means by which potential public health impacts may be evaluated. Standard RfDs

and/or CSFs have been developed for many of the COPCs. This section provides a brief description of these parameters.

6.4.1 Reference Doses

The RfDs are developed for chronic and/or subchronic human exposure to chemicals, and are based solely on the noncarcinogenic effects of chemical substances. These values are defined as an estimate of a daily exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of adverse effects during a lifetime. The RfD is expressed as dose (mg) per unit body weight (kg) per unit time (day).

6.4.2 Carcinogenic Slope Factors

CSFs are used to estimate an upper bound lifetime probability of an individual developing cancer as a result of exposure to a particular level of a potential carcinogen (USEPA, 1989). This factor is reported in units of proportion (of a population) affected per mg/kg/day and is derived through an assumed low-dosage, linear multistage model and an extrapolation from high to low dose-responses determined from animal studies. The slope factor represents the upper 95th percent confidence limit on the increased cancer risk from a lifetime exposure to an agent. CSFs can also be derived from USEPA promulgated unit risk values for air and/or water. CSFs derived from unit risks cannot, however, be applied to environmental media other than the medium considered in the unit risk estimate.

Slope factors are also accompanied by weight-of-evidence classifications, which designate the strength of the evidence that the COPC is a potential human carcinogen.

Quantitative indices of toxicity and USEPA weight-of-evidence classifications are presented in Tables 5.1 through 6.2 of Appendix H for the identified COPCs. The hierarchy (USEPA, 2003) for choosing these toxicity values was:

- Tier 1 - Integrated Risk Information System (IRIS, 2005)
- Tier 2 - USEPA's Provisional Peer Reviewed Toxicity Values (PPRTVs) (database of values developed on a chemical-specific basis when requested by USEPA's Superfund program)

- Tier 3 – Other Toxicity Values (includes additional USEPA and non-USEPA sources of toxicity information)

IRIS is the generally preferred source of human health toxicity values. IRIS generally contains RfDs, RfCs, CSFs, drinking water unit risk values, and inhalation unit risk values that have gone through a peer review and USEPA consensus review process. IRIS normally represents the official Agency scientific position regarding the toxicity of the chemicals based on the data available at the time of the review.

The second tier is USEPA's PPRTVs. Generally, PPRTVs are derived for one of two reasons. First, the Superfund Health Risk Technical Support Center (STSC) reviews the toxicity values in the Health Effects Assessment Summary Table (HEAST), which is now a Tier 3 source. As the reviews are completed, those toxicity values will be removed from HEAST, and any new toxicity value developed in such a review becomes a PPRTV and placed in the PPRTV database. Second, Regional Superfund Offices may request a PPRTV for contaminants lacking a relevant IRIS value. The STSC uses the same methodologies for both situations.

The third tier includes other sources of information. These sources should provide toxicity information based on similar methods and procedures as those used for Tiers 1 and 2, contain values which are peer reviewed, are available to the public, and are transparent about the methods and processes used to develop the values. Tier 3 sources include, but are not limited to, the following:

- The California Environmental Protection Agency (Cal EPA) toxicity values
- The Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels
- HEAST toxicity values.

6.4.3 Dermal Absorption Efficiency

Many of the RfDs and CSFs are derived from oral toxicological studies based on administered dose, and do not account for the amount of a substance that can penetrate exchange boundaries after contact (e.g., absorbed dose). As a result, there is very little information available regarding dermal toxicity criteria. Therefore, in order to account for a difference in toxicity between an administered dose and an absorbed dose, the RfDs and CSFs (that were based on an administered

dose) were adjusted, as described by Appendix A of RAGS A (USEPA, 1989). The adjustment for the oral RfD that would correspond to a dermally absorbed dose is represented by multiplying the RfD by an oral-to-dermal extrapolation value. The adjustment for the oral CSF that would correspond to the dermally-absorbed dose is represented by dividing the CSF by an oral-to-dermal extrapolation value. Recommended oral absorption efficiencies for those compounds/analytes with chemical-specific dermal absorption factors from soil were obtained from RAGS Part E (USEPA, 2004b). The oral-to-dermal extrapolation values were obtained from sources such as the NCEA, IRIS, Agency for Toxic Substance and Disease Registry (ATSDR) toxicological profiles, toxicology publications, toxicology references, and USEPA Regional Offices. Only oral-to-dermal extrapolation values that had reference documents available were used in this risk assessment. Otherwise, a value of 100 percent was assumed. The oral-to-dermal extrapolation values used in this baseline HHRA for the SWMU are presented in Tables 5.1 and 6.1 of Appendix H.

6.5 Risk Characterization

The risk characterization combines the selected COPCs, the exposure assessment, and the toxicity assessment to produce a quantitative estimate of current and future potential human health risks associated with the SWMU. Sections 6.5.1 and 6.5.2 discuss the USEPA methodologies used for quantifying and characterizing carcinogenic and noncarcinogenic human health risks. ILCRs and Hazard Indices (HIs) are calculated to characterize potential human health effects. These terms are defined in the sections that follow. ILCRs and HIs are estimated for current and future receptors exposure scenarios that were identified for the SWMU in Section 6.3, and are discussed in Section 6.5.3.

6.5.1 Quantification and Characterization of Carcinogenic Risks

Quantitative risk calculations for potentially carcinogenic compounds estimate inferentially (versus probablistically) the potential ILCR for an individual in a specified population. This unit of risk refers to a potential cancer risk that is above the background cancer risk in unexposed individuals. For example, an ILCR of 1×10^{-06} indicates that an exposed individual has an increased probability of one in one million of developing cancer subsequent to exposure, over the course of their lifetime.

The potential lifetime ILCR for an individual was estimated from the following relationship:

$$ILCR = \sum_{i=1}^{n} (CDI_i or DAD_i) \times CSF_i$$

where the CSFi is expressed as $(mg/kg/day)^{-1}$ for compound i, and the chronic daily intake (CDI_i) and dermally absorbed dose (DAD_i) is expressed as mg/kg/day for compound i. Since the units of CSF are (mg chemical/kg body weight-day)$^{-1}$ and the units of intake or dose are mg chemical/kg body weight-day, the ILCR value is dimensionless. The aforementioned equation was derived assuming that cancer is a nonthreshold process and that the potential excess risk level is proportional to the cumulative intake over a lifetime.

For quantitative estimation of risk, it is assumed that cancer risks from various exposure routes are additive. Estimated ILCR values will be compared to 1 x 10^{-06} to 1 x 10^{-04}, which represents the target risk range of ILCR values considered by the USEPA to represent an acceptable (i.e., de minimis) risk (USEPA, 1990).

6.5.2 Quantification and Characterization of Noncarcinogenic Risks

Noncarcinogenic compounds assume that a threshold toxicological effect exists. Therefore, the potential for noncarcinogenic effects are calculated by comparing (i.e., dividing) CDI_i and DAD_i levels with RfDs for each COPC.

Noncarcinogenic effects are estimated by calculating the Hazard Quotient (HQ) for individual chemicals and the HI for overall chemicals and pathways by the following equation:

$$HI = \sum_{i=1}^{n} HQ_i$$

$$where: HQ_i = \frac{(CDI_i or DAD_i)}{RfD_i}$$

An HQ is the ratio of the daily intake or absorbed dose to the reference dose. CDI_i is the chronic daily intake (mg/kg/day) of contaminant i; DAD_i is the dermally absorbed dose (mg/kg/day) of contaminant i, and RfD_i is the reference dose (mg/kg/day) of the contaminant i over a prolonged period of exposure. Since the units of RfD are mg/kg-day and the units of CDI/DAD are mg/kg-day, the HQ and HI are dimensionless. To account for the additivity of noncarcinogenic risk following exposure to numerous chemicals, the HI, which is the sum of all the HQs, will be calculated. A ratio of 1.0 is used for comparison to the HQ and HI (USEPA, 1990). Ratios less than 1.0 indicate that adverse noncarcinogenic health effects are unlikely. Ratios greater than 1.0 indicate that adverse noncarcinogenic health effects may occur at that exposure level. However, this does not mean that adverse effects will definitely occur, since the RfD incorporates safety and modifying factors to ensure that it is well below that dose for which adverse effects have been observed. This procedure assumes that the risks from exposure to multiple chemicals are additive, an assumption that is probably valid for compounds that have the same target organ or cause the same toxic effect.

6.5.3 Potential Human Health Effects

Both pathway-specific risks and total site risks have been estimated for current military Base personnel, future adolescent trespassers, future residents, and future construction workers at the SWMU. All scenarios evaluated in this baseline HHRA were previously discussed in detail in Section 6.3. All calculation spreadsheets used for estimating potential carcinogenic and noncarcinogenic risks for receptors at the SWMU are presented in Appendix J. Please note that the full set of RAGS Part D tables is presented in Appendix H.

The total site carcinogenic and noncarcinogenic risks estimated for all current and future receptors evaluated in this baseline HHRA are presented in Tables 9.1 through 9.7 of Appendix H.

6.5.3.1 Current Military Base Personnel

Table 9.1RME of Appendix H presents all potential pathway-specific and total site risks estimated for current military Base personnel evaluated for ingestion and dermal exposures to site COPCs in surface soil and inhalation of fugitive dusts and volatiles from surface soil.

There were no carcinogenic risks or adverse noncarcinogenic health hazards calculated that exceeded USEPA's acceptable criteria for the current military Base personnel.

6.5.3.2 Future Adolescent Trespassers

Table 9.2RME of Appendix H present all potential pathway-specific and total site risks estimated for future adolescent trespassers evaluated for ingestion and dermal exposures to site COPCs in surface soil and inhalation of fugitive dusts from surface soil.

There were no carcinogenic risks or adverse noncarcinogenic health hazards calculated that exceeded USEPA's acceptable criteria for the future adolescent trespassers.

6.5.3.3 Future Adult and Child Residents

Tables 9.3RME through 9.6CT of Appendix H present all potential pathway-specific and total site risks estimated for future adult and child residents evaluated for ingestion and dermal exposures to site COPCs in surface soil, subsurface soil, shallow and deep groundwater, and inhalation of fugitive dusts from surface and subsurface soil and VOCs in shallow and deep groundwater. Two separate groundwater exposure scenarios were assessed for the future residents: (1) exposure to surface soil, subsurface soil, and shallow groundwater and (2) exposure to surface soil, subsurface soil, and deep groundwater. It is reasonable to expect that an individual would not be exposed to both aquifers at the same time in one exposure setting.

Shallow Groundwater

As shown in Tables 9.3RME and 9.4RME, the total HIs (68 and 88) exceed the USEPA acceptable hazard level of 1.0 for the future adult and child residents. This is caused by ingestion and inhalation (adults only) of TCE in the shallow groundwater. This contributes essentially 100 percent of the total HIs for both adult and child. As shown in Tables 9.3CT and 9.4CT, the total HIs for the adult and child exceeded 1.0 (32 for the adult and 54 for the child) under the CT exposure scenario.

As shown in Tables 9.3RME and 9.4RME, the total ILCRs (3.1×10^{-03} and 1.0×10^{-03}) exceed the USEPA acceptable range of 1×10^{-06} to 1×10^{-04} for the future adult and child residents. This is caused by ingestion of, dermal contact with, and inhalation (adults only) TCE and vinyl chloride in the shallow groundwater, which contribute approximately 81 percent and 14 percent, respectively, to the total ILCRs for the adult and young child. As shown in Tables 9.3CT and 9.4CT, the total ILCRs for the adult and child exceeded USEPA's acceptable range (4.2×10^{-04} for the adult and 2.1×10^{-04} for the child) under the CT exposure scenario.

Deep Groundwater

As shown in Tables 9.5RME and 9.6RME, the total HIs (10.5 and 13.7) exceed the USEPA acceptable hazard level of 1.0 for the future adult and child residents. This is caused by ingestion and inhalation (adults only) of TCE in the deep groundwater. This contributes approximately 99 percent of the total HIs for both adult and child. As shown in Tables 9.5CT and 9.6CT, the total HIs for the adult and child exceeded 1.0 (4.9 for the adult and 8.5 for the child) under the CT exposure scenario.

As shown in Tables 9.5RME and 9.6RME, the total ILCRs (1.9×10^{-03} and 6.3×10^{-04}) exceed the USEPA acceptable range of 1×10^{-06} to 1×10^{-04} for the future adult and child residents. This is caused by ingestion and inhalation (adults only) of TCE and vinyl chloride in the deep groundwater, which contribute approximately 19 percent and 79 percent, respectively, to the total ILCRs for the adult and young child. As shown in Tables 9.5CT and 9.6CT, the total ILCRs for the adult and child exceeded USEPA's acceptable range (2.6×10^{-04} for the adult and 1.3×10^{-04} for the child) under the CT exposure scenario.

Therefore, based on the quantitative results of the baseline HHRA, unacceptable risk was calculated for future residents upon exposure to shallow and deep groundwater investigated at the SWMU. However, it should be noted that it is unlikely that the shallow groundwater at the SWMU would be used as potable water source, and consideration should be given to the conservatism added to the groundwater exposure evaluation.

6.5.3.4 Future Construction Workers

Table 9.7RME of Appendix H presents all potential pathway-specific and total site risks estimated for future construction workers evaluated for ingestion and dermal exposures to site COPCs in surface soil, inhalation of fugitive dusts from surface soil, and dermal contact with groundwater.

There were no carcinogenic risks calculated that exceeded the USEPA acceptable range of 1×10^{-06} to 1×10^{-04} for the future construction worker. However, a total site HI of 2.4 was calculated for this receptor. This is caused by dermal contact with TCE in the shallow groundwater, which contributed approximately 73 percent of the total site HI. As shown in Table 9.7CT, the total HI for the future construction worker exceeded 1.0 (1.86) under the CT exposure scenario.

Therefore, based on the quantitative results of the baseline HHRA, unacceptable risk was calculated for future construction workers upon dermal exposure to groundwater investigated at the SWMU. However, consideration should be given to the conservatism added to the groundwater exposure evaluation.

6.6 Sources of Uncertainty

Uncertainties are encountered throughout the risk assessment process. This section discusses the sources of uncertainty inherent in the following elements of the human health evaluation performed for SWMUs 303/318:

- Sampling and analysis
- Selection of COPCs
- Exposure assessment
- Toxicological assessment
- Human risk characterization

Uncertainties associated with this risk assessment are discussed in the following paragraphs. Table 6-1 summarizes the potential effects of certain uncertainties on the estimation of human health risks.

6.6.1 Sampling and Analysis

The development of a risk assessment depends on the reliability of, and uncertainties associated with, the analytical data available to the risk assessor. These, in turn, are dependent on the operating procedures and techniques applied to the collection of environmental samples in the field and their subsequent analyses in the laboratory. To minimize the uncertainties associated with sampling and analysis at the SWMU, USEPA-approved sampling and analytical methods were employed. Data was generated following USEPA-approved analytical methods. Samples were analyzed for Target Compound List (TCL) VOCs and SVOCs and/or RCRA metals. Samples were taken from locations specified in the approved Work Plan along with the necessary QA/QC samples.

Analytical data are limited by the precision and accuracy of the methods of analysis, which are reflected by the Relative Percent Difference (RPD) of duplicate analyses and the percent recovery of spikes, respectively. In addition, the statistical methods used to compile and analyze the data (mean concentrations, detection frequencies) are subject to the overall uncertainty in data measurement. Furthermore, chemical concentrations in environmental media fluctuate over time and with respect to sampling location. Analytical data must be sufficient to consider the temporal and spatial characteristics of contamination at the site with respect to exposure.

Uncertainty exists also in the fact that contamination may or may not be fully delineated. And so, having a complete data set impacts the representativeness of exposure concentrations derived from the data.

Surface soil samples collected from 0-2 feet bgs (Phase I investigation) were included in this HHRA. This depth interval is generally not included in a HHRA as surface soil because it is not representative of the depth range recommended by USEPA Region IV risk guidance (USEPA, 2000). However, the surface soil samples collected from 0-2 feet bgs during the Phase I investigation were included in the HHRA data set to maximize the number of available data points and to gain representative coverage within the exposure area.

It is noted that the use of the 0-2 feet bgs surface soil samples adds uncertainty to the risk assessment. These data were not validated but were analyzed by a fixed-based laboratory following USEPA's CLP. Also, the inclusion of soil from 1-2 feet bgs in these samples may

dilute the concentration of any contaminants that may be present in the top foot of soil. Upon review of the surface soil data, most of the surface soil samples were collected from the 0-1 foot depth interval and therefore, dilution of EPCs by soil from 1-2 feet bgs concentrations would be minimal. Based on examination of the data sets, it is anticipated that the contribution to the uncertainty of this risk assessment is low.

There is some uncertainty associated with the inclusion of the mobile laboratory data in this HHRA. Mobile laboratory analysis included VOCs using a SW846 8260B method. On the one hand, the exclusion of the mobile laboratory data leaves data gaps in the groundwater exposure evaluations in this HHRA. On the other hand, the inclusion of the mobile laboratory data introduces uncertainty in that those data were not validated. However, confirmatory samples were collected for the purpose of maintaining a check on the mobile laboratory such that it could be determined that the mobile laboratory was producing similar results to the fixed-based laboratory. Therefore, it is anticipated that there is greater uncertainty associated with not including the mobile laboratory data.

6.6.2 Selection of COPCs

Soil and groundwater water COPCs were selected based on comparisons of the maximum detected concentration with USEPA Region IX PRGs for residential soil (soil) and tap water (groundwater).

PRGs were derived using conservative, USEPA-promulgated default values, and the most recent toxicological criteria available. All non-carcinogenic PRGs were divided by 10 to account for potential additive effects. This adjustment corresponds to assuming an HQ of 0.1, rather than 1.0. This adds additional conservatism to the COPC selection process.

RfDs and CSFs have been combined with "standard" exposure scenarios to calculate the PRGs. Actual exposure scenarios and parameters may differ from those used to calculate the PRG.

Guidance contained within RAGS Volume I, Part A discusses the evaluation of quantitation limits in relationship to whether or not chemicals should be eliminated from a baseline HHRA because they were not detected. In other words, just because a chemical was not detected does not mean it should be deleted from consideration. In the baseline HHRA performed for SWMUs

303/318, only those chemicals that were positively detected were retained for quantitative evaluation in the risk assessment. There is some uncertainty associated with chemicals that may not have been detected, but the sample quantitation limits were greater than corresponding standards and/or criteria. This situation could result in undetected risk. In the case of SWMUs 303/318, several SVOCs and arsenic had detection limits that exceeded the residential soil PRGs. Also, several VOCs, SVOCs, and arsenic had detection limits that exceeded the tap water PRGs. However, given the magnitude of COPCs retained and the levels of unacceptable risk quantified at this SWMU, the contribution of any undetected risk would be minor.

Given the other conservative aspects of this baseline HHRA, it is anticipated that the contribution associated with sample quantitation limits greater than corresponding criteria to the uncertainty of this risk assessment is low. Furthermore, for chemicals detected just once in a given medium, one half of all detection limits of that chemical (considered as non-detects) are used as proxy calculations in calculating the concentration term. Only those chemicals in a medium that are not positively detected in each sample collected and analyzed are eliminated from further consideration.

Currently, no Base closures are planned for MCB Camp Lejeune; therefore future residential development is unlikely. The application of the residential PRG values to soil and groundwater COPC selections would, therefore, tend to result in a list of COPCs that could be considered conservative for a military base. Conservative COPC selections in the baseline HHRA protects public health because the results of the baseline HHRA determine remedial alternatives and remedial action objectives.

6.6.3 Exposure Assessment

In performing exposure assessments, uncertainties arise from two main sources. First, uncertainties arise in estimating the fate of a compound in the environment, including estimating release and transport in a particular environmental medium. Second, uncertainties arise in the estimation of chemical intakes resulting from contact by a receptor with a particular medium.

To estimate an intake, certain assumptions must be made about exposure events, exposure durations, and the corresponding assimilation of constituents by the receptor. Exposure factors have been generated by the scientific community and have been reviewed by the USEPA. The

USEPA has published an Exposure Factors Handbook (USEPA, 1997), which contains the best and latest values. These exposure factors have been derived from a range of values generated by studies of limited numbers of individuals. It is assumed that all potential receptors remain on or near the site throughout the exposure periods and that their exposures to chemicals from the site are all uniform. In all instances, values used in this risk assessment, scientific judgments, and conservative assumptions agree with those of the USEPA.

The use of a RME approach, designed to avoid underestimating daily intakes, was employed throughout this risk assessment. The use of 95% UCL estimates of the arithmetic mean versus mean values as the concentration terms in estimating the CDI or DAD for the soil exposure scenarios and the maximum values as the concentration terms for groundwater exposure scenarios reduces the potential for underestimating exposure at the SWMU.

At sites where soils or groundwater contain VOCs or SVOCs, there is the potential for chemical vapors to migrate from the subsurface to overlying buildings. Vapor intrusion into buildings was not evaluated in this HHRA. Currently there are no structures with enclosed air space that are designed for human occupancy, and it is likely that the future use of the area where the SWMU is located will remain the same. The volatile COPCs detected in the soil and groundwater at SWMUs 303/318 were evaluated under very conservative exposure scenarios and determined to already pose unacceptable risk. Given the conservativeness of the other exposure pathway evaluations in this HHRA, it is estimated that the underestimation of risk associated with not evaluating vapor intrusion into buildings is low.

Inhalation of volatiles in groundwater during trenching activities was also not evaluated in this HHRA. Volatiles were detected in groundwater at low concentrations. Considering the likelihood of dissipation in outdoor air during construction activities and the conservative evaluation of the dermal contact with groundwater exposure pathway for the construction worker, it is estimated that the underestimation of risk associated with not evaluating the inhalation of volatiles in groundwater for this receptor is low.

6.6.4 Toxicological Assessment

In making quantitative estimates of the toxicity of varying dosages of compounds to human receptors, uncertainties arise from two sources. First, data on human exposure and the

subsequent effects are usually insufficient, if they are at all available. Human exposure data usually lack adequate concentration estimations and suffer from inherent temporal variability. Therefore, animal studies are often used and new uncertainties arise from the process of extrapolating animal results to humans. Second, to obtain observable effects with a manageable number of experimental subjects, high doses of a compound are often used. In this situation, a high dose means that high exposures are used in the experiment with respect to most environmental exposures. Therefore, when applying the results of the animal experiment to human exposures, the effects at the high doses must be extrapolated to approximate effects at lower doses.

In extrapolating effects from high doses in animals to low doses in humans, scientific judgment and conservative assumptions are employed. In selecting animal studies for use in dose-response calculations, the following factors are considered:

- Studies are preferred where the animal closely mimics human pharmacokinetics.

- Studies are preferred where dose intake most closely mimics the intake route and duration for humans.

- Studies are preferred which demonstrate the most sensitive response to the compound in question.

For compounds believed to cause threshold effects (i.e., noncarcinogens), safety factors are employed in the extrapolation of effects from animals to humans and from high doses to low doses. In deriving carcinogenic potency factors, the 95% UCL value is promulgated by the USEPA to prevent underestimation of potential risk.

All potential toxic endpoints for human receptors have been addressed to the extent allowed by the data evaluated from the most recent toxicological/epidemiological studies used to derive the cancer slope factors and reference doses. Therefore, any uncertainties associated with toxic endpoints are directly correlated to the information obtained from, and reliability of those studies. Further conservatism in the baseline HHRA is also introduced through the use of experimentally-derived oral absorption efficiencies to account for a difference in the degree of toxicity between an administered dose and an absorbed dose. Equating the absorption efficiency

of the dermal bi-phasic barrier to the absorption efficiency of the gastrointestinal lining is a very conservative approach that tends to overestimate the potential risk to human health.

6.6.5 Human Risk Characterization

The risk characterization bridges the gap between potential exposure and the possibility of systemic or carcinogenic human health effects, ultimately providing impetus for the remediation of the site or providing a basis for no remedial action.

Uncertainties associated with risk characterization include the assumption of chemical additivity and the inability to predict synergistic or antagonistic interactions between COPCs. These uncertainties are inherent in any inferential risk assessment. USEPA promulgated inputs to the quantitative risk assessment and toxicological indices are calculated to be protective of the human receptor and to err conservatively, so as to not underestimate the potential human health risks.

6.7 Summary of the Baseline HHRA

Current land use scenarios that were evaluated in this baseline HHRA for SWMUs 303/318 include the military Base personnel. Future land use scenarios that were evaluated include the adolescent trespasser, adult and child residents, and construction worker.

There were no unacceptable carcinogenic risks or adverse noncarcinogenic hazard levels calculated that exceeded USEPA's acceptable criteria for the current military Base personnel or future adolescent trespasser.

Total site HIs exceeded the USEPA acceptable hazard level of 1.0 for the future adult and child residents as a result of ingestion and inhalation (adults only) of TCE in the shallow groundwater. Also, the total ILCRs exceeded the USEPA acceptable range of 1×10^{-06} to 1×10^{-04} for the future adult and child residents. This is caused by ingestion of, dermal contact with, and inhalation (adults only) of TCE and vinyl chloride in the shallow groundwater.

The total HIs exceeded the USEPA acceptable hazard level of 1.0 for the future adult and child residents as a result of ingestion and inhalation (adults only) of TCE in the deep groundwater. The total ILCRs exceeded the USEPA acceptable range of 1×10^{-06} to 1×10^{-04} for the future

adult and child residents as a result of ingestion and inhalation (adults only) of TCE and vinyl chloride in the deep groundwater.

There were no carcinogenic risks calculated that exceeded the USEPA acceptable range of 1×10^{-06} to 1×10^{-04} for the future construction worker. However, a total site HI exceeded the USEPA acceptable hazard level of 1.0 for the future construction worker. This was caused by dermal contact with TCE in the shallow groundwater.

Therefore, based on the quantitative results of the baseline HHRA, unacceptable risk was calculated for future residents and the future construction worker upon exposure to shallow groundwater and for future residents upon exposure to deep groundwater investigated at the SWMU. However, it should be noted that it is unlikely that the shallow groundwater at the SWMU would be used as potable water source, and consideration should be given to the conservatism added to the groundwater exposure evaluation.

6.8 References

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TABLES

TABLE 6-1

SUMMARY OF UNCERTAINTIES IN THE RESULTS OF THE HUMAN HEALTH RISK ASSESSMENT SWMU 303/318 RCRA FACILITY INVESTIGATION (CTO-0091) MCB CAMP LEJEUNE, NORTH CAROLINA

	Potential Magnitude for Over-Estimation of Risks	Potential Magnitude for Under-Estimation of Risks	Potential Magnitude for Over or Under-Estimation of Risks
Environmental Sampling and Analysis			
Sufficient samples may not have been taken to characterize the media being evaluated.			Moderate
Systematic or random errors in the chemical analysis may yield erroneous data.			Low
Selection of COPCs			
The use of site-specific background and USEPA Region IV COPC screening concentrations in selecting COPCs in all media of concern.		Low	
Exposure Assessment			
The standard assumptions regarding body weight, exposure period, life expectancy, population characteristics, and lifestyle may not be representative of the actual exposure situations.			Moderate
The use of the 95th percentile upper confidence level data for the normal or lognormal distribution in the estimation of the RME.			Low
The amount of media intake is assumed to be constant and representative of any actual exposure.			Low
Toxicological Assessment			
Toxicological indices derived from high dose animal studies, extrapolated to low dose human exposure.	Moderate		
Risk Characterization			
Assumption of additivity in the quantitation of cancer risks without consideration of synergism, antagonism, promotion and initiation.			Moderate
Assumption of additivity in the estimation of systemic health effects without consideration of synergism, antagonism, etc.			Moderate
Additivity of risks by individual exposure pathways (dermal and ingestion and inhalation).			Low

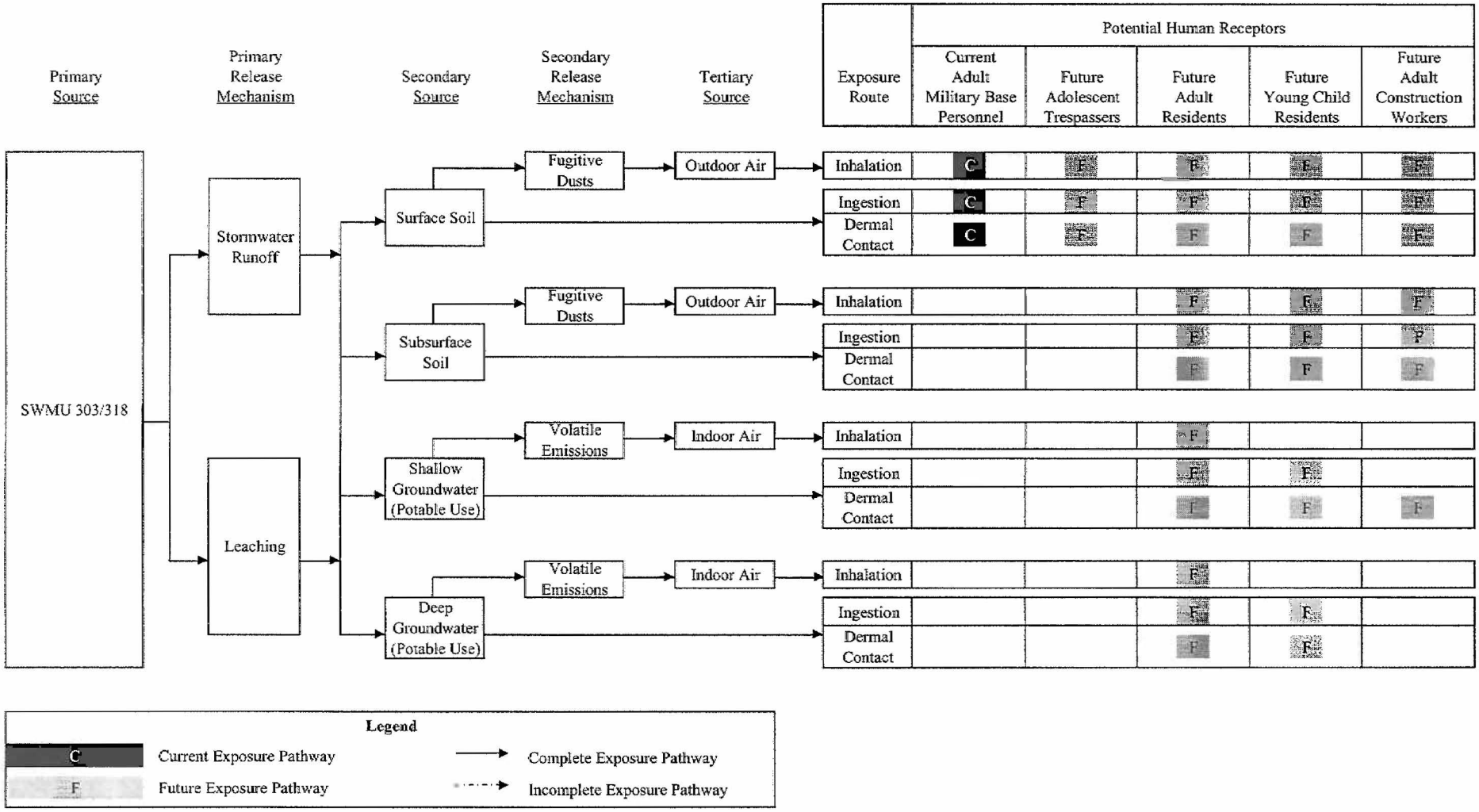
Notes:

Low - Assumptions categorized as "low" may effect risk estimates by less than one order of magnitude.
Moderate - Assumptions categorized as "moderate" may effect estimates of risk by between one and two orders of magnitude.
High - Assumptions categorized as "high" may effect estimates of risk by more than two orders of magnitude.

Source: Risk Assessment Guidance for Superfund, Volume 1, Part A: Human Health Evaluation Manual. USEPA, 1989.

FIGURES

FIGURE 6-1
FLOWCHART OF POTENTIAL EXPOSURE PATHWAYS AND RECEPTORS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA



7.0 ECOLOGICAL RISK ASSESSMENT

The overall purpose of an ecological risk assessment (ERA) is to evaluate the likelihood that adverse ecological effects would occur or are occurring as a result of exposure to one or more physical or chemical stressors. The assessment evaluates the potential effects of chemicals on terrestrial and aquatic receptors (e.g., flora and fauna) and their habitats, including the consideration of protected species and sensitive or critical habitats, and identifies particular chemical stressors that may cause adverse effects (ecological Chemicals of Potential Concern [COPCs]).

Because no risk assessment guidance has been developed specifically for the Resource Conservation and Recovery Act (RCRA) program, guidance designed for Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) sites was followed (United States Environmental Protection Agency [USEPA], 1996). The following guidance documents were consulted during the risk assessment process:

- Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments. USEPA 1997a.

- Supplemental Guidance to RAGS: Region IV Bulletins, Ecological Risk Assessment. USEPA 2001. Originally published November 1995. Website version last updated November 30, 2001 <http://www.epa.gov/region4/waste/ots/ecolbul.htm>

- Amended Guidance on Ecological Risk Assessment at Military Bases: Process Considerations, Timing of Activities, and Inclusion of Stakeholders. USEPA Region IV, Memorandum 4WD-OTS, 2000 (USEPA 2000b).

- Navy Policy for Conducting Ecological Risk Assessments. Chief of Naval Operations (CNO) 1999.

- Guidelines for Performing Screening Level Ecological Risk Assessments Within the North Carolina Division of Waste Management, North Carolina Department

of Environment and Natural Resources (NCDENR) Division of Waste Management. October 2003 (NCDENR 2003a).

This section of the RCRA Facilities Investigation (RFI) presents a screening-level ERA and Step 3a of the baseline ERA. The screening-level ERA is organized into the following components (NCDENR 2003a):

Step 1: Preliminary Problem Formulation and Ecological Effects Evaluation. This step is designed to help answer the question "Is there an ecology here to protect?"

- Ecological Setting
- Fate and Transport Mechanisms
- Potentially Complete Exposure Pathways

Step 2: Preliminary Exposure Estimate and Risk Calculation. This step is designed to help answer the question "Are risks to ecological receptors present at the site?"

- Data Collection and Evaluation
- Abiotic Screen
- Uncertainty and Data Gaps
- Scientific/Management Decision Point
- Screening-Level ERA Summary

The Navy ERA process consists of eight steps organized into three tiers and represents a clarification and interpretation of the eight-step ERA process (CNO 1999). Under Navy policy, if the results of Step 1 and Step 2 (Tier 1 screening level ERA) indicate that, based on a set of conservative exposure assumptions, there are chemicals present in environmental media that may present a risk to receptor species/communities, the ERA process proceeds to the baseline ERA. According to Superfund guidance (USEPA, 1997a), Step 3 represents the problem formulation phase of the baseline ERA. Under Navy policy, the baseline ERA is defined as Tier 2, and the first activity under Tier 2 is Step 3a. Step 3a precedes the baseline risk assessment problem formulation (Step 3b). In Step 3a, the conservative exposure assumptions applied in Tier 1 are refined and risk estimates are recalculated using the same conceptual site model. The evaluation of risks in Step 3a may also include consideration of background data, chemical bioavailability,

and the frequency of detection. If the re-evaluation of the conservative exposure assumptions supports an acceptable risk determination, the site may exit the ERA process.

Step 3a: Refining the List of Chemicals of Potential Concern

- Refinement of Exposure and Effects Level Estimates
- Additional Considerations
- Uncertainty Associated with Step 3a
- Step 3a Summary

It should be noted that Step 3a is only conducted if it is determined that potential ecological effects are possible based on the results of Steps 1 and 2. The conclusion of the screening level ERA and Step 3a (if applicable) will be one of the following (NCDENR 2003a):

- There is adequate information to conclude that the ecological risks are negligible
- The site has inadequate data to complete the risk characterization. Large data gaps need to be filled prior to completion of the screening process.
- The information indicates a potential for adverse ecological effects and a more thorough assessment is warranted.

The following sections describe the general technical approach and results of the risk evaluation at Solid Waste Management Unit (SWMU) 303/318.

7.1 Step 1 – Preliminary Problem Formulation and Ecological Effects Evaluation

Screening-level problem formulation concerns the development of a preliminary conceptual model for the site that includes a description of the ecological setting including discussion of contaminants known or suspected to exist at the site and potential contaminant fate and transport mechanisms, and the identification of potentially complete exposure pathways (USEPA 1997a). Information gathered as part of Step 1 of the screening-level ERA is used to answer the question: "Is there an ecology here to protect?"

7.1.1 Ecological Setting

An understanding of the ecological setting of the site is an important component of the screening level ERA. A discussion of the ecological setting generally includes a description of facility operations, the regional ecological setting, and the site-specific ecological setting. A detailed description of Marine Corps Base (MCB), Camp Lejeune, including the history and mission of the base, a summary of hazardous wastes generated, and detailed information regarding the regional ecological setting, including topography and surface features, surface water hydrology, geology, hydrogeology, land use and demographics, climatology, water supply, ecological characteristics, wetlands, and threatened and endangered species information is provided in Section 2.0 of the Phase II Confirmatory Site Inspection (CSI) Report (Baker 2002b). Information on the site-specific ecological setting follows.

The ecological setting of SWMU 303/318 was evaluated via examination of historical information and two site visits conducted by a certified ecologist. The first visit occurred on 31 March 2004, and the second occurred on 16 February 2005; both lasted approximately one-half hour. During each visit, a Checklist for Ecological Assessment/Sampling (Appendix A, NCDENR 2003a) was completed. The checklist was completed for the second visit due to changes in site conditions that had transpired between March 2004 and February 2005. The checklists, including photographs of the site, are provided in Appendices K and L.

SWMU 303/318 is comprised of two separate areas located within a fenced area of the Marine Corps Air Station (MCAS). An aerial photograph of the SWMU is included as Figure 7-1. SWMU 303 is located between Building AS-515 and a helicopter wash pad. The SWMU consists of two above-ground storage tanks (ASTs) that are contained within a concrete, bermed structure (Photos 1 and 2, Appendix K). The tanks are labeled as "Hydraulic Fluid, Engine and Transmission Oils Only, No Solvents or Other Chemicals." The steel tanks were installed in 1983 and are still in use. SWMU 318 is located approximately 160 feet to the east of SWMU 303, east of the helicopter wash pad (Photo 3, Appendix K). SWMU 318 is a concrete, multi-chambered oil/water separator and grit chamber (Photo 4, Appendix K). The primary function of SWMU 318 is to collect water, soap, oil, grease, and dirt from the helicopter wash pad; separate the solids from the liquids; and then segregate the oil and grease from the remaining liquids. This installation date of the oil/water separator is unknown.

The area surrounding the SWMUs is industrial. A concrete airfield is located immediately south of the SWMUs (Photo 5, Appendix K), and an industrialized area containing a variety of buildings and roadways is located to the north. Habitat is limited to manicured lawn, which surrounds both SWMUs. The lawn surrounding SWMU 303 extends approximately 5 feet to the east, 8 feet south, 25 feet west, and 120 feet north of the ASTs. The lawn area north of the SWMU also includes Building AS513, Building AS514. The lawn surrounding SWMU 318 extends approximately 160 feet east to west and 140 feet north to south. An approximately 30 foot wide strip of lawn located along the northern boundary of the wash pad connects the lawn adjacent to SWMU 303 with that adjacent to SWMU 318 (Figure 7-1). The lawn consists primarily of grass but also contains a variety of herbaceous species. Lawn areas are often used for foraging by small birds and mammals. Foraging by birds at the study area is possible because avian receptors can fly over the fence surrounding the site, however, small mammals are considered unlikely to be found foraging in the lawn area adjacent to the SWMUs because of the isolated nature of the lawn relative to habitat in which it would be suitable for such animals to nest. The nearest substantial terrestrial habitat includes an open field approximately 1500 feet east of the study area and a wooded habitat approximately 3100 feet east of the study area. No birds or other animals were observed at the SWMU during the March 2004 site visit. During the February 2004 site visit, sea gulls were observed in the area of the SWMU. The field crew reported seeing flocks of gulls resting on the tarmac frequently throughout the field investigation.

The topography of the study area is generally flat. A drainage ditch that collects storm water run-off runs north to south just east of SWMU 318 (Photos 6 and 7, Appendix K) This ditch varies from approximately 2 to 5 feet below grade. A second drainage way, which is 1 to 2 feet below grade, runs east to west within the lawn area north of the helicopter wash pad (Photo 8, Appendix K). Direct infiltration of storm water occurs in these ditches, as flow even during rain events is not substantial. Direct infiltration also occurs in adjacent grassy areas. Standing water was present in both of these ditches during both visits to the site. Based upon the vegetation (e.g., water pennywort [*Hydrocotyle* sp.], rush [*Juncus* sp.], and algae) within the drainage ways (Photo 9, Appendix K), it is anticipated that standing water is present in portions of this drainage way throughout the year. Both surface runoff and precipitation are anticipated to collect in this ditch. Based on the elevation of the drainage way (approximately 5 feet below grade) relative to the depth of the water table (estimated at 5.2 to 6.3 feet below ground surface [bgs] in the Phase II CSI [Baker 2002b]), there is the potential for this ditch to also be fed by groundwater at the site. No amphibians or reptiles were observed within the drainage way during either site visit.

Groundwater at the study area flows northeast (Figure 3-6) toward Installation Restoration (IR) Site 86, and contaminant plumes in groundwater from these two areas are connected (Section 4.0). The nearest off-site surface water body is Stick Creek, a fresh water body located approximately 2775 feet northeast of the SWMUs. Stick Creek is a tributary of the New River, a tidally influenced water body located approximately 4200 feet east of the study area (Figure 1-1).

No protected species have been reported or observed at SWMU 303/318. The site is not located within any areas identified as ecologically protected or of significant natural value. No endangered species were noted during the site visit nor were endangered species referenced at the site during the endangered species survey (LeBlond et al., 1994).

7.1.2 Fate and Transport Mechanisms

A transport pathway describes the mechanisms whereby chemicals may be transported from a source of contamination to ecologically relevant media. Transport pathways for SWMU 303/318 are illustrated in the preliminary ecological conceptual model (Figure 7-2). As depicted in the preliminary ecological conceptual model, the primary mechanisms for chemical transport from potential source areas are believed to include the following:

- Overland transport of chemicals with surface soil *via* surface runoff to downgradient surface soil (insignificant due to flat topography of the site).
- Leaching/desorption of chemicals from surface soil or subsurface soil by infiltrating precipitation and transport to surface water and sediment with groundwater.
- Uptake by biota from soil and trophic transfer to upper trophic level receptors.
- Volatile emissions from surface soils and erosion releasing fugitive dusts to the atmosphere.

Although a potentially complete and significant pathway, as per USEPA Region IV Guidance (USEPA, 2000b) the evaluation of chemical transfer to upper trophic level ecological receptors via food chain uptake is beyond the scope of the screening level ERA; therefore, food web exposure modeling is not included in Step 1 or 2 of this document. It should be noted that in many cases, screening values developed by USEPA Region IV and recommended for use by

NCDENR (2003a) do consider risks to upper trophic level receptors in addition to lower trophic level receptors when such information is available from the toxicological data. Food web modeling will be included in Step 3a if deemed appropriate based upon the bioavailability, spatial distribution, and detected concentrations of COPCs.

7.1.3 Potentially Complete Exposure Pathways

An exposure pathway links a source of contamination with one or more receptors through exposure via one or more media. Exposure, and thus potential risk, can only occur if each of the following components exists:

- A source and mechanism of chemical release into the environment
- An environmental transport medium
- A point of potential contact between an ecological receptor and the medium
- A feasible exposure route at the contact point

An exposure route describes the specific mechanism(s) by which a receptor is exposed to a chemical present in an environmental medium. The most common exposure routes are direct uptake, dermal contact, ingestion, and inhalation. The ERA for SWMU 303/318 includes the evaluation of both terrestrial habitat (the maintained lawn in the vicinity of the SWMUs) and aquatic habitat (the drainage way). The potential for site contaminants to impact off-site habitats via migration was also considered. There was no evidence of contaminant migration to any off-site terrestrial habitats. There is evidence that contaminated groundwater is migrating off-site. This groundwater could impact off-site aquatic habitats if it discharged to the surface. Because groundwater at the site flows toward IR Site 86, and the contaminant plumes of these sites are connected, an evaluation of Site 86 groundwater also addresses potential risks posed by contaminants at SWMU 303/318. A screening-level ERA was conducted on groundwater at Site 86 in conjunction with the Final Amended RI for this site (Baker 2003). The conclusions of that assessment were that potential risks posed to downgradient habitats did not warrant additional ecological evaluation.

Terrestrial plants may be exposed to chemicals present in surface soils through their root surfaces during water and nutrient uptake. Unrooted, floating aquatic plants, rooted submerged aquatic plants, and algae may be exposed to chemicals directly from the water or (for rooted plants) from

sediments. Terrestrial and aquatic invertebrates may be exposed to chemicals in soil, sediment, or surface water through dermal adsorption and ingestion. Much of the toxicological data available for terrestrial and aquatic invertebrates are based upon *in situ* studies that represent both dermal and ingestion pathways; therefore, both pathways are considered together in the risk evaluation.

Upper trophic level receptors may be exposed to chemicals through: (1) the inhalation of gaseous chemicals or chemicals adhered to particulate matter; (2) the incidental ingestion of contaminated abiotic media (e.g., soil or sediment) during feeding or cleaning activities; (3) the ingestion of contaminated water; (4) the ingestion of contaminated plant and/or animal tissues for chemicals that have entered food webs; and/or (5) dermal contact with contaminated abiotic media. These exposure routes (with the exception of the inhalation route) are depicted on Figure 7-2. Their relative importance depends in part on the chemical being evaluated. For chemicals having the potential to bioaccumulate (e.g., mercury), the greatest exposure to wildlife is likely to be from the ingestion of prey. For chemicals having a limited potential to bioaccumulate (e.g., aluminum), the exposure of wildlife to chemicals is likely to be greatest through the direct ingestion of abiotic media, such as soil or sediment.

For upper trophic level receptors, certain potential exposure pathways and/or routes (e.g., dermal contact and inhalation), although potentially complete, are considered insignificant relative to other pathways (e.g., ingestion) due to low potential for exposure. The relative insignificance of the dermal exposure pathway is supported by evidence outlined in Suter II et al. (2000) and USEPA (2000c), the low potential exposure frequency and duration, and the protection offered by feathers, fur, and scales to avian, mammalian, and reptilian receptors, respectively. Literature reviews indicate that dermal exposures to wildlife from classes of chemicals known or suspected to be of concern via dermal adsorption (Volatile Organic Compounds [VOCs], organophosphate pesticides, and petroleum compounds) are often overestimated in laboratory studies (where feathers/fur are removed) and do not represent realistic exposure scenarios (USEPA, 2000c). Moreover, in developing soil screening levels for 24 important compounds identified from National Priorities List (NPL) sites and Biological Technical Assistant Group (BTAG) recommendations, USEPA calculated that the contribution of dermal exposures to the total dose received by terrestrial receptors to be 0.5 percent or less and therefore omitted the dermal pathway from in their exposure estimates (USEPA, 2000c).

Inhalation of gaseous chemicals and chemicals adhered to particulate matter (e.g., soil) is also considered insignificant relative to ingestion pathways. As described above for dermal exposures, this approach is consistent with Suter II et al. (2000) and USEPA (1997b and 2000c), which recognize the relatively small contribution the inhalation pathway contributes to exposure estimates. For example, USEPA (2000c) estimates the expected contribution of exposure to dust particles and VOCs via inhalation to be 0.01 percent and 0.5 percent or less, respectively relative to ingestion. When present, vegetative groundcover and litter layers further minimize suspension of dust and the potential for inhalation exposures to chemicals adhered to particulate matter.

A discussion of potential complete exposure pathways for ecological receptors at SWMU 303/318 is presented below. Specific pathways addressed by the screening level ERA are also identified.

Groundwater Exposure Pathway. The potential release sources for the groundwater exposure pathway are surface and subsurface soils that may have been contaminated as a result of prior leaks or spills. Release mechanisms are leaching/desorption of chemicals to subsurface soil and vertical migration with infiltrating precipitation to groundwater (or leaching/desorption directly to groundwater).

Although groundwater is not inhabited by ecological receptors, receptors may potentially be exposed to chemicals in groundwater if the chemicals migrate to surface water and/ or sediment. Based on the depth of the water table (estimated in the Phase II CSI to be 5.2 to 6.3 feet bgs [Baker 2002b]), there is some potential for groundwater on site to discharge into the drainage channel adjacent to SWMU 318. The potential impacts of groundwater discharge to this ditch will be evaluated assuming no dilution or natural attenuation.

As discussed previously, groundwater flow in the surficial aquifer is to the northeast toward IR Site 86. The evaluation of potential exposures resulting from the migration of chemicals with groundwater to off-site aquatic habitats was addressed in conjunction with the Final Amended Remedial Investigation (RI) for Site 86 (Baker 2003). The RI concluded that no further evaluation of either the surficial or upper Castle Hayne aquifers was warranted for the protection of ecological receptors.

Surface Water and Sediment Exposure Pathway. The potential release source for the surface water and sediment exposure pathway is contaminated groundwater at the site. On-site aquatic habitat is limited to a drainage ditch adjacent to the east side of the oil-water separator (SWMU 318). Aquatic life (e.g., invertebrates) may be exposed to chemicals that have potentially migrated to this habitat through incidental ingestion, direct contact, and ingestion of plant and/or animal tissues for chemicals that have entered the food web (i.e., food chain transfer). Aquatic vegetation within these areas may be exposed to chemicals directly from the water (direct contact) or through root uptake from the substrate. Birds using the aquatic habitat as a potential food and/or drinking water source may be exposed to chemicals in surface water and sediment through ingestion, direct contact, and food chain transfer. The surface water and sediment exposure pathway for aquatic receptors that may be present in the ditch was evaluated by comparing groundwater analytical data to USEPA Region IV recommended surface water screening values for freshwater assuming no dilution or natural attenuation.

Other receptors that may forage within aquatic areas include reptiles and amphibians. The potential exposure routes for reptiles and amphibians are ingestion of surface water and sediment, direct contact with surface water and sediment, and food chain transfer. No reptiles or amphibians were observed at or are expected to inhabit the drainage area due to the distance to this habitat from other habitats that may support such receptors (i.e. such receptors are limited in their ability to migrate to the ditch). It is noted that for all potential receptors, exposures from food chain transfer will be limited to those chemicals that bioaccumulate in lower trophic level organisms or biomagnify through successive trophic levels.

The surface water and sediment exposure pathway for aquatic receptors that may be present in this aquatic habitat was evaluated by comparing groundwater analytical data to USEPA Region IV recommended surface water screening values for freshwater assuming no dilution or natural attenuation.

Soil Exposure Pathway. The release source for the subsurface and surface soil exposure pathway is material that may have leaked or spilled from the ASTs or oil/water separator. Chemicals may remain in site soils or migrate via surface runoff and fugitive dust emissions. The potential for contaminant migration via fugitive dust emissions is addressed in the air exposure pathway.

In general, soil invertebrates, such as earthworms, may be exposed to chemicals in surface soil through direct contact and ingestion. Terrestrial plants may be exposed to chemicals in surface soil through root uptake. Terrestrial birds, mammals, amphibians, and reptiles may be exposed to chemicals in surface soil through incidental ingestion and food chain transfer. For all potential terrestrial receptors, exposure from food chain transfer will be limited to those chemicals that bioaccumulate in lower trophic level organisms or biomagnify through successive trophic levels. As discussed previously, based upon the maintained nature of lawn surrounding the SWMUs, distance to suitable terrestrial habitat, and active nature of this industrial are, use of the study area by upper trophic level receptors is likely to be limited with the potential exception of use by avian receptors.

Surface soil is considered a complete exposure pathway for terrestrial receptors. The surface soil exposure pathway was evaluated by comparing contaminant concentrations in the surface soil to the USEPA Region IV recommended Soil Screening Values.

Subsurface soil is not considered a complete exposure pathway for terrestrial receptors for the following reasons (Suter 1995):

- The mass of most root systems, including grasses and herbaceous species, is within the surface soil
- Most soil heterotrophic activity is within the surface organic layer
- Soil invertebrates occur on the surface or within the oxidized root zone

Air Exposure Pathway. Contaminated surface soil may serve as a release source for the air exposure pathway (fugitive dust emissions from wind erosion). In addition to this release mechanism, volatilization of chemicals from surface soil may occur. VOC contamination in surface soils at the SWMU is predominantly located under the concrete helicopter wash pad (Section 4); therefore, volatilization of chemicals to ecological receptors is unlikely. Fugitive dust emissions are minimized by the presence of paved surfaces and by the thick lawn covering over the remainder of the study area. Furthermore, the exposure of ecological receptors to fugitive dusts occurs via the inhalation exposure pathway. Exposures via this pathway are considered insignificant relative to the ingestion pathway. For these reasons, the air exposure pathway is considered insignificant and is not evaluated in this risk assessment. It is noted that this pathway is not indicated in the ecological conceptual model.

7.1.4 Conclusions of Step 1

Step 1 of the screening-level ERA posed the question "Is there an ecology here to protect?" Based on information regarding the ecological setting of the site, fate and transport mechanisms, and potentially complete exposure pathways, which are discussed in the preceding sections, there is habitat at the site to protect. Terrestrial habitat consists of manicured lawn surrounding both SWMUs. This habitat is not of sufficient quality to fully support upper trophic level terrestrial receptors, but can support terrestrial flora and fauna and may be used as a foraging area by avian species. The terrestrial habitat is not considered an ideal habitat based upon the industrialized nature and active use of the study area. A man-made drainage way present within the lawn area acts as an aquatic habitat for some aquatic flora and invertebrates. No upper trophic level aquatic receptors were observed in or are likely to be found in this drainage way. An evaluation of the potential for ecological effects to occur in these terrestrial and aquatic habitats is presented in the following section.

7.2 Step 2 - Screening-Level Preliminary Exposure Estimate and Risk Calculation

Step 2 of the ERA process consists of the preliminary exposure estimate and risk calculation. The following sections describe the data available for the preliminary exposure estimate, and the methods and results of the abiotic screen.

7.2.1 Data Used in the Screening-Level ERA

Data available from SWMUs 303/318 include surface soil, subsurface soil, and groundwater data collected in 1997 for the Phase I CSI (Baker 2001a), in 2002 for the Phase II CSI (Baker 2002b), and in March and June of 2004 and February of 2005 for Phases I, II, and III of the RFI field investigation, respectively (Baker 2004). These investigations were conducted in series with specific goals for each investigation. The Phase I investigation was conducted to determine if activities associated with the SWMU had possibly impacted the environment surrounding the SWMU. Therefore, the samples collected as part of this investigation were located as near the SWMU as physically possible or in areas where evidence of possible environmental impact had been observed. If a specific group of contaminants was not detected in the samples (e.g. volatiles), then that group was eliminated as contaminants of concern for that particular SWMU. As such, subsequent investigations did not include any group of contaminants that had been

eliminated as a potential contaminant of concern. Likewise, if a particular group of contaminants had been delineated during any investigation or combination of investigations, the extent of the contamination was assumed to be delineated and further investigation of these compounds was not considered necessary in subsequent phases of the investigation.

As part of the Phase I CSI (conducted in September 1997), surface (0-2 feet bgs) and subsurface (6-8 feet bgs) soil samples were collected from each of four soil borings advanced around the perimeter of SWMU 303. Surface soil samples were also collected at three soil borings advanced around the perimeter of SWMU 318. Subsurface soil samples were not collected at SWMU 318 due to the shallow depth to groundwater. In addition, one surface soil sample was collected from the drainage ditch adjacent to the oil/water separator. Phase I soil samples from both SWMUs were analyzed for VOCs (benzene, toluene, ethylbenzene, and xylenes [BTEX] only for SWMU 318 samples), semi-volatile organic compounds (SVOCs), and RCRA metals.

As part of the Phase II CSI at SWMU 303 (conducted in March and April 2002), surface (0-1 foot bgs) and subsurface (5-7 or 7-9 foot bgs) soil samples were collected from three temporary well borings and two soil borings, groundwater was sampled from three temporary wells, and surface soil was re-sampled from location SWMU303-IS04-00. Soil and groundwater samples were analyzed for SVOCs and RCRA metals. Sample SWMU303-IS04-00 was additionally analyzed for VOCs. For the Phase II CSI at SWMU 318, surface (0-1 foot bgs) and subsurface (7-9 foot bgs) soil samples were collected from three temporary well borings, surface soil was sampled at two locations within the drainage ditch, and groundwater was sampled from three temporary wells. Soil and groundwater samples from SWM 318 were analyzed for VOCs, SVOCs, and RCRA metals.

Phase I of the RFI field investigation (March 2004) included the collection of three soil samples from each of 13 soil borings (SB01 through SB13; four samples from boring SB04). Soil samples were collected from the surface (or immediately beneath the concrete apron of the helicopter pad), from immediately above the water table, and from a depth intermediate to those two samples. The shallowest sample collected from boring SB04 was from 1-3 feet bgs, and was considered a subsurface soil sample. All other surface borings were collected from 0-1 foot bgs. Each of the soil samples was analyzed for VOCs by a mobile laboratory. Mobile laboratory data were not validated. Four of the RFI soil samples were split and sent to a fixed based laboratory for VOC analysis. Two of the three soil samples in all but one of the borings were sent to a fixed

base laboratory for analysis of SVOCs and RCRA metals. Due to equipment problems in the mobile laboratory, some of the "mobile" laboratory data were also sent to a fixed base laboratory for analysis. The Phase I RFI investigation also included the collection of three groundwater grab samples from each of 15 soil borings. Groundwater was sampled from the following depths: 10-14 feet bgs, 25-29 feet bgs, and 40-44 feet bgs. All groundwater grab samples were analyzed for VOCs by a mobile laboratory (Method SW846 8260B). Five of the groundwater grab samples were split and additionally analyzed for VOCs by a fixed base laboratory. One groundwater sample from each boring was analyzed for SVOCs by a fixed base laboratory. Three permanent groundwater monitoring wells were installed during the RFI (SWMU318-MW01, SWMU318-MW02, and SWMU318-MW03). These wells and two existing wells from IR86 (IR86-MW25IW and IR86-MW27) were sampled for VOCs, SVOCs, and RCRA metals analysis by a fixed base laboratory. These five groundwater monitoring wells were screened from 20-30 feet bgs, in the lower portion of the surficial aquifer. Groundwater monitoring well samples were additionally analyzed in the field for pH, specific conductance, dissolved oxygen, temperature, and turbidity.

In June 2004, additional (RFI Phase II) groundwater sampling was performed. Up to three groundwater grab samples were collected from each of 15 borings (GW16 through GW30). Three samples were collected from all but three of these borings, with sampling intervals matching those from the Phase I RFI sampling effort (10-14 feet bgs, 25-29 feet bgs, and 40-44 feet bgs). Two samples were collected from SWMU318-GW26 (no shallow sample), SWMU318-GW27 (no intermediate sample), and SWMU318-GW30 (no shallow sample). Each of these groundwater grab samples was analyzed for VOCs by a mobile laboratory. Four of the samples were split in the field and additionally send to a fixed base laboratory for VOC analysis.

Phase III RFI sampling was performed in February 2005 around the perimeter of SWMU 303/318. Up to three soil samples were collected from 16 borings (SWMU318-SB14 through SWMU318-SB28 and SWMU318-SB35). Up to three groundwater grab samples were collected from 21 borings (SWMU318-GW31 through SWMU318-GW51). The sample depths collected from these borings matched those from the RFI sampling effort both in March and June 2004 (10-14 feet bgs, 25-29 feet bgs, and 40-44 feet bgs). Ten samples were collected from ten monitoring wells located both within SWMU 318 and IR86. Additionally, seven deep monitoring wells were sampled with up to two samples in the February 2005 sampling effort. All of the soil samples and groundwater grab samples were evaluated by a mobile laboratory for VOCs. Five of the soil

samples and five of the groundwater grab samples were split in the field and sent to a fixed base laboratory for analysis. All of the monitoring well samples were analyzed by a fixed base laboratory for VOCs, SVOCs, and RCRA metals.

A subset of the available data was used for the SWMU 303/318 screening-level ERA. During the Phase I CSI, four samples from SWMU 303 were collected from 0-2 feet bgs. These samples were not included in the screening-level ERA because (1) soils from depths greater than 1-foot bgs are not representative of the most biologically active soil zone, and (2) during subsequent investigations at SWMU 303 there were samples collected from 0-1 foot bgs in the vicinity of the four deeper samples such that the entire SWMU is represented by the reduced data set. As for SWMU 303, at SWMU 318 Phase I CSI sampling included the collection of four samples from 0-2 feet bgs. Although these samples are not representative of the most biologically active soil zone, they were included in the screening-level ERA data set because they were collected from the area immediately surrounding the former oil/water separator and from the drainage ditch (a potential migration pathway) in areas not represented by the 0-1 foot surface soil data. It is noted that the use of the 0-2 foot bgs surface soil samples adds uncertainty to the risk evaluation. In addition to not being representative of the most biologically active soil zone, the inclusion of soils from 1-2 feet bgs in these samples may dilute the concentration of any contaminants that may be present in the top foot of soil. This uncertainty is addressed in Section 7.2.3. All of the 0-1 foot bgs surface soil data collected during the Phase II investigation were collected from the lawn areas of the SWMUs and were included in the screening-level ERA data set. The RFI included the collection of additional 0-1 foot bgs surface soil data for SWMU318. Of those data, the following samples were collected from lawn areas at or near the site and were included in the screening-level ERA data set: SWMU318-SB05, SWMU318-SB06, SWMU318-SB09, SWMU318-SB10, SWMU318-SB11, SWMU318-SB12, SWMU318-SB16, SWMU318-SB19, SWMU318-SB20, SWMU318-SB21, SWMU318-SB22, SWMU318-SB23, SWMU318-SB24, SWMU318-SB26, SWMU318-SB27, and SWMU318-SB28. Sample locations are indicated on Figure 7-3. No subsurface soil was evaluated in the ERA.

Available groundwater data that were collected from the surficial aquifer (less than 30 feet bgs) were considered for inclusion in the ecological risk evaluation. Based on the preliminary conceptual model (Figure 7-2), potential discharge of site groundwater to the drainage ditch was evaluated. Shallow groundwater data from all sampling locations upstream (southwest) of the ditch and from sampling locations within 100 feet of the ditch itself were included in the

ecological data set. Although monitoring wells 318-MW01 and 318-MW03 met the location criteria, groundwater from these wells was from the upper Castle Hayne aquifer. Overall, seven groundwater samples were evaluated; sample locations are indicated on Figure 7-4.

Surface soil and groundwater data used for the ecological risk assessment are summarized on Table 7-1 and are presented in full in Appendix M.

When both fixed based laboratory data and mobile laboratory data were available for a given sample/chemical, fixed based data were chosen for inclusion in the risk assessment data set. Mobile laboratory data were used when no fixed base data were available. Duplicate samples were included in the data set by the following means: In instances where the original and duplicate sample were both detected or both non-detected the values were averaged for the risk assessment. In instances when the original and duplicate samples contained one detection and one non-detection, the detected value was averaged with one-half of the detection limit of the non-detected value and the sample was considered a detection.

7.2.2 Abiotic Screen

The screening-level exposure estimate and risk calculation provides a highly conservative evaluation of potential ecological risks at a site. Although upper trophic level receptors (e.g., birds) may be identified as potential receptors at the site, the screening level ERA is limited to a comparison of analytical data to media-specific screening values. Screening values used in the screening level ERA are those provided in the NCDENR screening level ERA Guidance (2003a) and are consistent with ecological screening values established by USEPA Region IV (USEPA 2001). The sections that follow describe the various criteria and toxicological benchmarks used as screening values (toxicological thresholds) for chemicals analyzed in groundwater and surface soil. USEPA Region IV chemical-specific surface water and soil screening values are summarized on Table 7-2. The screening values represent conservative exposure thresholds above which adverse ecological effects may occur.

7.2.2.1 Media-Specific Screening Values

Surface Water Screening Values

Surface water screening values (SWSVs) used in this evaluation are USEPA Region IV freshwater screening values obtained from the NCDENR Guidelines for Performing Screening-level ERAs (NCDENR 2003a). Surface water was not sampled at this site; however, fresh surface water screening values were used to screen groundwater contaminant concentrations.

The SWSV selected for pentachlorophenol is expressed as a function of pH. A default pH value of 7.8 standard units (S.U.) was used to adjust the chronic criterion for this organic chemical (USEPA 2002a).

Surface Water Screening Values – North Carolina Water Quality Standards

North Carolina Surface Water Quality Standards for Aquatic Life were obtained from the North Carolina guidelines for performing screening-level ERAs (NCDENR 2003a). These standards were originally published as North Carolina Administrative Code (NCAC) Section 15A NCAC 2B (NCDENR 2003b).

Soil Screening Values

Soil screening values used in this evaluation were obtained from the NCDENR Guidelines for Performing screening-level ERAs (NCDENR 2003a). The recommended soil screening values presented by NCDENR are consistent with values recommended by USEPA Region IV in the Ecological Risk Assessment Bulletins. The original sources for these values include the following: Beyer (1990), Efroymson et al. (1997a), Efroymson et al. (1997b), Canadian Council of Ministers of the Environment (1997), the Dutch Ministry of Housing, Spatial Planning and Environment (MHSPE) (1994), and Crommentuijn et al. (1997).

7.2.2.2 Hazard Quotient Calculation

A hazard quotient (HQ) was calculated for each chemical by dividing the maximum exposure concentration of the chemical by USEPA Region IV ecological screening value for that chemical:

$$Hazard\ Quotient = \frac{Maximum\ Exposure\ Concentration}{Screening\ Value}$$

The maximum exposure concentration is estimated as the maximum detected concentration of the chemical or, in cases where the chemical was not detected in a given media, the maximum sample detection limit (MDL)(NCDENR 2003a). HQs exceeding 1.0 indicate the potential for risk since the estimated exposure exceeds the estimated effects concentration. However, screening values and exposure estimates are derived using intentionally conservative assumptions such that HQs greater than one do not necessarily indicate that risks are present or impacts are occurring. Rather, they identify chemical-pathway-receptor combinations requiring further evaluation. Following the same reasoning, HQs that are equal to or less than one indicate that risks are very unlikely, enabling a conclusion of no unacceptable risk to be reached with high confidence.

Chemicals were identified as COPCs if they fell in to one or more of the following categories (NCDENR 2003a):

- Category 1 – Chemicals whose maximum detection exceeds the USEPA Region IV media specific ecological screening value (HQ> 1.0; chemical detected).

- Category 2 – Chemicals that were not detected in any samples for a given media, but for which the MDL exceeded the USEPA Region IV media specific ecological screening value (HQ>1.0; chemical not detected).

- Category 3 – Chemicals that have no USEPA Region IV ecological screening value but were detected above the laboratory sample quantitation level (SQL) (No screening value; chemical detected).

- Category 4 – Chemicals that were not detected above the laboratory SQL and have no USEPA Region IV ecological screening value (No screening value; chemical not detected).

- Category 5 – Chemicals for which the maximum detection or MDL exceeds the North Carolina Surface Water Quality Standards (for aqueous samples only).

Any tentatively identified compounds or unknown chemicals present at the site would have been identified as preliminary COPCs and included as Category 3 contaminants; however, no such chemicals were present at SWMU 303/318. Chemicals that did not fall in to one of the contaminant categories were not identified as COPCs and were not evaluated further.

7.2.2.3 Results of the Abiotic Screen

The results of the abiotic screen for surface soil are presented in the following paragraphs. Chemicals identified as ecological COPCs based on the abiotic screen proceed to Step 3a of the ERA (Section 7.3).

Four surface soil samples collected from 0-2 feet bgs and 27 surface soil samples collected from 0-1 feet bgs were evaluated in the screening-level ERA. As discussed in Section 7.2.1 and summarized on Table 7-1, 22 of these samples were analyzed for TCL VOCs, 4 were analyzed for BTEX VOCs, 21 were analyzed for TCL SVOCs, and 20 were analyzed for RCRA metals. Table 7-3 presents HQ calculations for surface soil. One hundred chemicals were identified as ecological COPCs in surface soils. The VOCs 1,2-dichlorobenzene and 1,4-dichlorobenzene, and all eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) were identified as Category 1 COPCs because maximum detected concentrations exceeded surface soil screening values. The HQ values for 1,2-dichlorobenzene and 1,4-dichlorobenzene were 920 and 430, respectively. HQs for Category 1 metals ranged from 1.4 (mercury) to 227.75 (chromium), indicating that unacceptable risks may be occurring. Figure 7-3 presents detections of Category 1 COPCs that exceeded USEPA Region IV soil screening values.

Eight VOCs and 21 SVOCs were identified as Category 2 COPCs because they were not detected, but their MDL exceeded surface soil screening values. HQs for Category 2 COPCs ranged from 1.20 (for two VOCs) to 43,000 (for pentachlorophenol).

Ten VOCs (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 2-butanone, 2-hexanone, 4-methyl-2-pentanone, acetone, bromoform, carbon disulfide, naphthalene, and n-butylbenzene) and 19 SVOCs (2-methylnaphthalene, acenaphthene, acetophenone, benzo[a]anthracene,

benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, bis[2-ethylhexyl]phthalate, butylbenzylphthalate, caprolactam, carbazole, chrysene, dibenz[a,h]anthracene, di-n-octylphthalate, fluoranthene, indeno[1,2,3-cd]pyrene, phenathrene, and pyrene) were identified as ecological COPCs in Category 3 because they were detected in surface soils but lacked USEPA Region IV soil screening criteria.

Finally, 16 VOCs and 16 SVOCs were identified as Category 4 COPCs because they were not detected and are lacking soil screening values.

7.2.2.3.2 Groundwater

Groundwater data used in the SLERA included seven shallow groundwater samples collected near the drainage ditch within the boundaries of SWMU 303/318. All groundwater samples included in the data set for the risk evaluation were collected from the surficial aquifer. Five groundwater grab samples were collected from 12 – 16 feet bgs and 2 samples were collected from 10 – 14 feet bgs. Each sample was analyzed for TCL VOCs, and 3 samples were analyzed for TCL SVOCs. Based on the suspected chemicals of concern at SWMU 318, no metals data was collected from these groundwater samples. Groundwater data were compared to fresh surface water screening values; Table 7-4 presents HQ calculations for groundwater. Ninety-three chemicals were identified as ecological COPCs in groundwater. One VOC (naphthalene) was identified as a Category 1 COPC because maximum detected concentrations exceeded fresh surface water screening values (HQ = 5.29). Figure 7-4 presents detections of Category 1 COPCs in groundwater that exceed USEPA Region IV screening values for freshwater aquatic life.

One VOC and 10 SVOCs were classified as Category 2 COPCs because they were not detected in groundwater but their maximum detection limits exceeded screening values. HQs for Category 2 COPCs ranged from 1.02 (for hexachloroethane) to 142.86 for hexachlorocyclopentadiene).

Thirteen VOCs (1,1-dichloroethane, 1,2,4-trimethylbenzene, cis-1,2-dichloroethene, 4-isopropyltoluene, sec-butylbenzene, isopropylbenzene, methyl cyclohexane, n-butylbenzene, n-propylbenzene, trichloroethene, and xylenes [m/p- and o- isomers, and total xylenes]), and one SVOC (2-methylnaphthalene) were identified as Category 3 COPCs because they were detected in groundwater but lacked freshwater screening values with which to evaluate potential risks.

Thirty VOCs and 35 SVOCs were identified as Category 4 COPCs because they were not detected and are lacking soil screening values.

Finally, two VOCs were identified as Category 5 COPCs. Both carbon tetrachloride (not detected) and toluene (detected in 4 of 7 samples) were identified as Category 5 COPCs because maximum detected concentrations or the MDL exceeded NCWQS for freshwater.

7.2.3 Uncertainties Associated with the Screening Level ERA

The procedures used in this evaluation to assess risks to ecological receptors, as in all such assessments, are subject to uncertainties because of the limitations of the available data and the need to make certain assumptions and extrapolations based on incomplete information. Uncertainties associated with the screening level ERA for SWMU 303/318 and their effects on risk conclusions are presented and discussed below.

Limitations of Available Data Set

- Groundwater data was used to evaluate potential risks to receptors within the drainage way on site. There is no direct evidence that groundwater discharges to the drainage way; however, the evaluation of the groundwater migration pathway is included as a conservative approach aimed at preventing the elimination of chemicals from the list of COPCs that may in fact be contributing unacceptable risks to the environment. Evaluation of surface water would provide a more realistic evaluation of potential risks to this area; however, no such data were available. Furthermore, groundwater data considered in the ERA were not evaluated for metals. Section 4 provides additional information regarding the extent of metal contamination in the surficial aquifer. It should be noted that surface soil samples were collected from within the drainage area. Due to the physical nature of these samples (as evaluated by the site geologist), these samples were considered soils and not sediments, and were evaluated as such.

- Mobile laboratory data (2004 and 205 surface soil and groundwater data analyzed for VOCs with method SW846 8260B) were not validated. This adds uncertainty to the risk assessment; however, as a conservative measure aimed at being protective of the environment and providing a more complete picture of VOC contamination in surface

soils and the surficial aquifer, these data were included in the risk assessment data set. Phase I CSI soil data were also not validated. Phase I CSI data from SWMU 318 were included in the risk assessment data set because these data provide information for soils adjacent to the oil/water separator and within the drainage way that are not available from subsequent sampling events. Fixed-base laboratory data were validated using procedures established by the National Functional Guidelines for Organic and Inorganic Analyses (USEPA, 2002b).

Identification of Ecological COPCs

- There is uncertainty regarding potential risk that may be contributed by chemicals that were identified as COPCs but were not detected in site media (Cateory 2 and Category 4 COPCs). It is as likely that the concentrations of these chemicals at the SWMU are at or near zero and that they are not present in ecologically harmful concentrations. The identification of such chemicals as COPCs is a conservative measure designed to be highly protective, but is likely to overestimate the potential for adverse effects.

- There is also uncertainty regarding the potential risk that may be contributed by chemicals that lack soil or surface water screening values (Category 3 and Category 4 COPCs). Because toxicological data regarding the potential effects of such chemicals on ecological receptors is lacking, it is not possible to quantitatively evaluate risks to ecological receptors. The identification of such chemicals as COPCs is a highly conservative approach aimed at preventing the elimination of compounds that could have harmful impacts on the environment from the list of COPCs. Although this approach is conservative, the absence of toxicological data on these chemicals adds uncertainty to the conclusions of the risk assessment and may lead to an underestimation or overestimation of potential ecological impacts contributed by the SWMU. This uncertainty is reduced in Step 3a of the baseline ERA though the introduction of additional available toxicological data from the literature for those chemicals lacking Region IV ecological screening values.

Exposure Point Concentrations

- As is typical in a screening level ERA, a finite number of samples of abiotic media are used to develop the exposure estimates. The maximum measured concentration provides a conservative estimate for immobile biota or those with a limited home range. The most realistic exposure estimates for mobile species with relatively large home ranges and for species populations (even those that are immobile or have limited home ranges) are those based on the mean chemical concentrations in each medium to which these receptors are exposed. This is reflected in the wildlife dietary exposure models contained in the Wildlife Exposure Factors Handbook (USEPA 1993), which specify the use of average media concentrations. The use of mean concentrations to estimate exposure in a refinement (Step 3a of the baseline ERA) is more likely to provide a more accurate picture of potential risks at the site.

Media-specific Screening Values

- Potential adverse impacts to terrestrial flora and fauna were evaluated by comparing the detected compound concentrations to surface soil screening values. Screening values may not take into account soil type, which may have a great influence on the toxicity of the chemicals. For example, soil with high organic carbon content will tend to absorb many of the organic compounds, thus making them less bioavailable to terrestrial receptors. Some screening values can be developed based on both field and growth chamber studies; therefore, the reported toxic concentrations are not always equivalent to actual field conditions. In addition, some screening values may be calculated based on a low number of studies or may have only examined toxicities to a limited diversity of invertebrate species.

- Screening values for some chemicals are based on background soil concentrations and not on toxicological studies. The use of these values may overestimate risks at the site.

- In the case of chromium, to be conservative, screening levels were estimated from the chromium VI form of the element. Chromium III, which is orders of magnitude less toxic than chromium VI, is most likely to be the predominant form in the environment.

- Surface water screening levels are established to be protective of *most* of the potential ecological receptors. However, some species will not be protected by the values because of their increased sensitivity to the chemicals. For example, the Ambient Water Quality Criteria developed by the USEPA, in theory, only protect 95 percent of the exposed species. Therefore, there may be some sensitive species present that may not be protected with these criteria. In addition, most of the values are established using laboratory tests, where the concentrations of certain water quality parameters (pH, total organic carbon) that may influence toxicity are most likely at different concentrations than in surface waters that may be influenced by the study area.

- Surface water screening values for many chemicals were derived from literature-based toxicological data for a limited number of species. Uncertainty is added to the risk assessment when criteria, toxicological benchmarks, and literature-based toxicity data are used as screening values for a particular community of species that did not contribute to their development. For example, many of the surface water screening values are based on laboratory toxicity studies that used invertebrates and/or fish as test species. As such, they may understate or overstate potential risks to amphibians.

- The species used to develop the screening values may not be present at the site or in nearby areas, or have the potential to exist in these areas. Depending on the sensitivity of the tested species relative to that of the species at or near the site, use of the toxicity values may overestimate or underestimate risk.

Chemical Mixtures

- Information on the ecotoxicological effects of chemical interactions is generally lacking, which required (as is standard for ecological risk assessments) that the chemicals be evaluated on a compound-by-compound basis during the comparison to screening values. This could result in an underestimation of risk (if there are additive or synergistic effects among chemicals) or an overestimation of risks (if there are antagonistic effects among chemicals).

Bioaccumulative Chemicals

- Many of the chemicals identified as ecological COPCS at SWMU 303/318 have been identified as important bioaccumulative chemicals by the USEPA (2000a). There is some potential that bioaccumulative chemicals may pose unacceptable risks to upper trophic level receptors even if no unacceptable risk is posed to primary receptors. Although USEPA Region IV screening values are derived considering a variety of toxicological data, including risks to upper trophic level receptors, such upper trophic level data are not available for all chemicals. Therefore, some screening values are based purely on data regarding risks to primary receptors (e.g., flora and invertebrates). For this reason, the abiotic screen alone may underestimate the number of COPCs at the SWMU. An evaluation of risks to upper trophic level receptors is beyond the scope of the screening level ERA; however, the bioaccumulative potential of individual chemicals is considered in Step 3a of the baseline ERA when determining the need for further evaluation.

7.3 Step 3a – Refinement of the List of Chemicals of Potential Concern

The screening level ERA for SWMU 303/318 indicated that, based on a set of conservative exposure assumptions, there are multiple chemicals that may present a risk to ecological receptors in the maintained lawn adjacent to the site or to potential receptors in off-site aquatic habitats. Therefore, SWMU 303/318 was carried in to Step 3a of the ERA process. In Step 3a, the ecological COPCs identified in Step 2 are further evaluated to determine which chemicals, if any, can be removed from further ecological consideration. The Step 3a evaluation examines multiple factors that improve the realism of the risk evaluation while remaining protective of the environment. These factors include consideration of population-level effects, use of alternative screening values, an evaluation of background data, consideration of the frequency and distribution of detections, consideration of bioavailability, dilution, and natural attenuation, and any chemical or site-specific considerations that may be relevant. These factors were used to weigh the evidence of potential risk for each COPC identified for each media to assess whether the COPC should be carried in to Step 3b of the baseline ERA. The specific assumptions and methods that were modified for Step 3a are identified below, along with justification for each modification. If re-evaluation of the conservative exposure assumptions supports an acceptable

risk determination then the site may exit the ecological risk assessment process (USEPA 1997a, CNO 1999).

7.3.1 Refinement of Exposure and Effects Level Estimates

During Steps 1 and 2, maximum chemical concentrations of detected chemicals were used as conservative estimates of receptor exposure to calculate HQs. Because many of the receptors evaluated are relatively immobile or have a limited home range, individuals are more likely to be impacted by locations of maximum concentration; however, average contaminant concentrations are more appropriate for evaluating impacts to *populations* of soil invertebrates. Arithmetic means were calculated for all compounds identified as COPCs in the screening level ERA. For COPCs detected in less than 100 percent of the samples collected, arithmetic means were calculated using one half the detection limit of non-detected samples. These means were used to estimate the exposure of ecological receptors to site contaminants. If the arithmetic mean for a given chemical was greater than the maximum detected concentration, the maximum detected concentration was used as the exposure estimate.

Effects levels used in Steps 1 and 2 were NCDENR media screening values. In Step 3a, screening values were introduced, when available, for chemicals that did not have screening values established by NCDENR. All screening values used in Step 3a are provided on Table 7-5; values introduced in Step 3a are shaded on the table. Introduced screening values for soils and fresh surface water are the minimum of available screening values from the following: NCDENR ecological screening values for chemical classes (e.g., the screening value for total phthalates may be applied to individual phthalates), USEPA Region III BTAG soil screening values (USEPA 1995) or fresh surface water screening values (USEPA 2004), USEPA Region V soil or freshwater ecological screening values for RCRA hazardous constituents (USEPA 2003a), and Federal USEPA Ecological Soil Screening Levels (USEPA 2003b). Additional screening values and/or primary toxicological data from the scientific literature may also be discussed in Step 3a as appropriate.

A mean HQ was calculated for each COPC using the refined estimates of exposure and effects. Chemicals with mean HQs less than or equal to one are unlikely to pose unacceptable risks to populations of ecological receptors. In most cases, such chemicals were not considered to be risk-driving COPCs and were not recommended for further ecological evaluation. However,

prior to removing a chemical from further consideration, the maximum HQ and spatial distribution of exceedences were evaluated to identify any potential hot spots of contamination that may be driving unacceptable risk. Only if no hot spots were identified was a mean HQ less than one used as a sole criterion for eliminating a COPC from further consideration.

Results of the refinement of exposure assumptions for surface soil and groundwater are summarized on Tables 7-6 and 7-7, respectively. The comment column of these tables indicates those chemicals with a mean HQ less than or equal to 1.0.

7.3.2 Comparison to Background Data

Inorganic constituents in surface soil that were selected as COPCs based on the screening level ERA were compared to background data. Surface soil background data were obtained from the Final Area of Concern Background Study (Baker 2001b). SWMU-specific background concentrations were established using protocol outlined in Ohio Environmental Protection Agency's (OEPA's) Closure Plan Review Guidance for RCRA Facilities (OEPA, 1999). NCDENR agreed that SWMUs could be grouped together into areas of concern (AOCs) based on geographical location, geology and type of SWMU, and that background concentrations for metals could be established for each of these AOCs. These background data are to be evaluated in comparison to the levels of inorganic constituents detected at individual SWMUs to assess whether the presence of such constituents is naturally occurring or may be attributed to activities (past and/or present) within the AOCs. Surface and subsurface soil samples were collected from eleven AOCs. Surface soil samples were collected from 0 to 1 foot bgs, and subsurface soil samples were collected from just above the water table. All soil samples were analyzed for TAL metals, TOC, and pH. SWMU 303/318 is included within AOC 2, therefore, surface soil data from SWMU 303/318 are compared to the AOC 2 background data set. The complete set of background data collected for each AOC is presented in the AOC Background Study.

Groundwater background data were obtained from the Draft Base Background Groundwater Investigation (Baker 2002a). Background groundwater data were collected from locations throughout the Base away from identified sites in relatively undisturbed areas not near any known sources of contamination. In the Base Background Groundwater Investigation, groundwater data were divided into two categories, including upper (shallow) and lower (deep) portions of the surficial aquifer. Groundwater samples included in the risk evaluation at SWMU 303/318 were

collected from the shallow portions of the surficial aquifer; therefore, they were compared to the background data set for the upper surficial aquifer.

In accordance with USEPA Region 4 Human Health Risk Assessment Bulletins, Supplement to RAGS, maximum site concentrations were compared to two times the base background mean (USEPA, 2000d). The comparison is useful for determining whether or not the presence of chemicals at the site should be considered site related or may be considered naturally occurring. Inorganic constituents with background concentrations (two times the mean) that exceed maximum site concentrations are not considered risk-driving COPCs and are not recommended for further evaluation. Organic compounds were not analyzed as part of the AOC Background Study or Groundwater Base Background Groundwater Investigation.

Tables 7-6 and 7-7 present background data and results of comparisons to maximum soil and groundwater concentrations, respectively, at SWMU 303/318. The comment column of these tables indicate those chemicals for which maximum site concentrations were less than twice the mean background concentration with the comment "< Background."

7.3.3 Frequency and Distribution of Detections

Chemicals not detected in any environmental samples are unlikely to be present in sufficient volume to contribute significant risks to receptors at a site, especially at the population level. Those COPCs that were not detected were removed from further consideration and are indicated on Tables 7-6 and 7-7 by the comment "Not Detected." The magnitude and frequency with which sample quantitation limits exceeded screening values and the likelihood for a chemical to be site-related, even if not detected, were considered prior to removing a chemical from further consideration based on detection frequency.

It should be noted that chemicals detected infrequently may also be removed from further consideration after evaluation of a variety of factors including the distribution of detections, the magnitude of potential risks, and the site history and presence or absence of chemical precursors in any site media. When appropriate, a discussion of such chemicals is included in the text.

7.3.4 Considerations of Bioaccumulative Potential

The USPEA has identified certain chemicals as "important bioaccumulative chemicals" (USEPA 2000a). Bioaccumulative chemicals may pose unacceptable risks to upper trophic level receptors even if no unacceptable risk is posed to primary receptors. Although an evaluation of risks to upper trophic level receptors is not included in the screening level ERA, consideration of the bioaccumulative potential of each COPC will be made before determining the need for additional evaluation of a particular chemical. Those chemicals identified as important bioaccumulative chemicals by the USEPA are indicated in the third column from the right on Tables 7-6 and 7-7.

7.3.5 Groundwater Considerations

The risk evaluation for groundwater assumes discharge to a surface water body with no natural attenuation or dilution. Buchman (1999) recommends the use of a dilution factor of 10 to account for the dilution expected during migration and upon discharge of groundwater to surface water in the absence of site-specific dilution factors. However, because under the exposure pathway for the drainage ditch, groundwater is not migrating off-site, and dilution would be anticipated to be minimal due to the shallow and possibly intermittent nature of the ditch, dilution at this SWMU is assumed to be negligible.

7.3.6 Additional Considerations

Additional factors that were considered when determining the need for further evaluation of an ecological COPC include but are not limited to the following:

- For chemicals lacking screening values, comparison to range of available screening values for chemicals in the same chemical class.

- For chemicals with screening values not based on toxicological studies, consideration of toxicological-based screening values from the scientific literature.

Chemical specific considerations for surface soil and groundwater COPCs are addressed in the following sections.

7.3.6.1 Surface Soil COPCs

The VOCs 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and n-butylbenzene, and the SVOCs caprolactam and carbazole were identified as a Category 3 COPCs in Step 2 of the screening-level ERA because they were detected in surface soils and lacked soil screening values. A search of the Risk Assessment Information System Ecological Benchmark Tool (http://risk.lsd.ornl.gov/cgi-bin/eco/ECO_select) and USEPA's ECOTOX Database (http://www.epa.gov/cgi-bin/ecotox_quick_search) did not provide any toxicological data on any of these five chemicals. 1,2,4-Trimethylbenzene, 1,3,5-trimethylbenzene, and n-butylbenzene were detected in 2/16, 1/16, and 1/16 soil samples, respectively. Maximum detected concentrations of each of these VOCs were less than 1.0 µg/kg, which is the minimum of available screening values for VOCs (screening value for trichloroethene). Maximum detected concentrations of the SVOCs caprolactam (100 J µg/kg) and carbazole (44 J µg/kg), each of which were detected in only one sample, were at the low end of the range of available screening values for SVOCs (2.5 µg/kg [total monochlorophenols] to 300,000 µg/kg [acetophenone], Table 7-5). Based on the limited frequency of detection of each of the Category 3 soil COPCs and maximum detected concentrations at the low end or below the range of available screening values for similar compounds, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, n-butylbenzene, caprolactam, and carbazole are not likely to pose adverse ecological effects to populations of ecological receptors at SWMU 303/318, and no further evaluation is recommended.

The PAHs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene were identified as Category 3 COPCs because they were detected but were without USEPA Region IV screening values with which to evaluate potential risks. The screening values introduced for these chemicals in Step 3a (each 100 µg/kg) are USEPA Region III BTAG values based on background concentrations (USEPA, 1995), which are more conservative than the screening value for total PAHs recommended by NCDENR (1000 µg/kg, 2003). Because the Region III screening values are not based on toxicological data, there is uncertainty in the identification of these PAHs as risk driving chemicals (background-based screening values do not represent threshold effect concentrations). USEPA Region V has established toxicity-based ecological soil screening benchmarks for each of these PAHs (USEPA 2003b). Both mean and maximum detected concentrations of the following PAHs were less than their Region V screening values: benzo(a)anthracene (Region V screening value = 5,210 µg/kg),

benzo(a)pyrene (1,520 µg/kg), benzo(b)fluoranthene (59,800 µg/kg), benzo(g,h,i)perylene (119,000 µg/kg), benzo(k)fluoranthene (148,000 µg/kg), chrysene (4,730 µg/kg), dibenz(a,h)anthracene (18,400 µg/kg), fluoranthene (122,000 µg/kg), indeno(1,2,3-cd)pyrene (109,000 µg/kg), phenanthrene (45,700 µg/kg), and pyrene (78,500 µg/kg). Maximum detected concentrations of benzo(a)pyrene and chrysene, both of which occurred in SWMU318-SS01-00 exceeded Region V values (1,520 µg/kg and 4,730 µg/kg, respectively), but all other detected concentrations and the mean concentrations of each of these chemicals were less than the Region V values. Location-specific HQs for benzo(a)pyrene and chrysene at SWMU318-SS01-00 calculated with Region V screening values were 3.29 and 1.42, respectively.

A literature search was conducted to further investigate potential effects of PAHs on soil flora and fauna. The following studies regarding effects on terrestrial invertebrates were located. Van Staalen and Verweij (1991) examined the effects of the benzo(a)pyrene on the wood louse (*Porcellio scaber*); they calculated a chronic (28-day) NOAEL for growth of 25 mg/kg (25,000 µg/kg). Achazi et al. (1995) conducted a 30-day study on the effects of benzo(a)pyrene on *Enchytraeus crypticus* (earthworm); they reported an LOEC of 400 mg/kg on earthworm reproduction. The maximum detected concentration of benzo(a)pyrene (5,000 µg/kg) was less than these reported toxicity values. Sverdrup et al. (2002a) reported the toxic effect of fluoranthene and pyrene on *E. crypticus* reproduction following 21-days of exposure; they reported chronic NOEC values of 38 mg/kg and 18 mg/kg for fluoranthene and pyrene, respectively. Sverdrup et al. (2002b) also reported toxic effects of fluoranthene and pyrene on *Eisenia veneta* (earthworm) following 28-day exposure; 28-day NOEL values were 98 mg/kg for fluoranthene and 29 mg/kg for pyrene. Kordel et al. (1984) studied the effects of fluoranthene on *E. fetida* and established a NOEC (mortality) of 100 mg/kg. Sverdrup et al. (2001) reported 21-day NOEC values of 47 mg/kg (fluoranthene) and 13 mg/kg (pyrene) for *Folsomia fimetaria* (springtail) reproduction. The maximum detected concentrations of fluoranthene (7,700 µg/kg) and pyrene (7,800J µg/kg) were less than the NOECs reported for these PAHs. Finally, Crouau et al. (1999) conducted a 34-day study of the effects of phenanthrene on *Folsomia candida* (springtail); they reported a NOEC (progeny counts) of 140 mg/kg. The maximum detected concentration of phenanthrene (110J µg/kg) was less than this toxicity-based value.

In addition to the invertebrate toxicity values discussed above, plant and microorganisms toxicity values were identified from the literature. Sims and Overcash (1983) investigated the chronic toxicity of benzo(b)fluoranthene and benzo(a)pyrene to wheat; a chronic NOAEL of 1.2 mg/kg

was reported for both PAHs. Benzo(a)pyrene and benzo(b)fluroanthene concentrations on site exceeded this NOAEL at only one location (concentrations of 5000J µg/kg and 5900J µg/kg, respectively at SWMU318-SS01-00). Kordel et al. (1984) studied the effects of fluoranthene on the growth of two of plant species; they established an EC_{50} of greater then 1000 mg/kg for both *Avena sativa* (common oat) and *Brassica rapa* (Bird rape). Sverdrup et al. (2003) investigated the effect of fluoranthene and pyrene on red clover, ryegrass, and mustard seedling growth. After 21-days of exposure, fluoranthene EC_{20} values ranged from 140 mg/kg to 650 mg/kg on a fresh weight basis and 150 mg/kg to >1,000 mg/kg on a dry weight basis, while pyrene EC_{20} values ranged from 49 mg/kg to >1,000 mg/kg on a fresh weight basis and 56 mg/kg to >1,000 mg/kg on a dry weight basis. In addition to effects on seeding growth, Sverdrup et al. (2003) reported effects on red clover, ryegrass, and mustard seed emergence; 21-day fluoranthene and pyrene LC_{50} values were greater than 1,000 mg/kg for each species. The toxic effects of fluoranthene and pyrene on soil nitrification processes, total number of protozoa, and total number of heterotrophic flagellates were reported by Sverdrup et al. (2002c). NOEC values for soil nitrification ranged from 24 mg/kg for fluoranthene to 79 mg/kg for pyrene. Fluoranthene EC_{50} values of 2,000 mg/kg were reported for total number of heterotrophic flagellates. The maximum detected concentrations of fluoranthene (7,700J µg/kg) and pyrene (7,800J µg/kg) did not exceed these toxicity values.

In summary, based on comparisons to toxicity-based screening criteria, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene are not indicated to pose unacceptable risk to populations of terrestrial flora and fauna at SWMU 303/318, and no further evaluation is recommended.

The SVOC di-n-octylphthalate was identified as a Category 3 COPCs in Step 3 of the SLERA because it was detected in surface soils and lacked a USEPA Region IV soil screening value. The screening value listed on Table 7-5 for di-n-octylphthalate (100 µg/kg) was provided by NCDENR to screen total phthalates; maximum detected concentrations of di-n-octylphthalate exceeded this value. The original source of the 100 µg/kg screening value is a Dutch soil screening benchmark (MHSPE, 1994). This screening value represents background concentrations, and is not based on toxicological data; therefore, it may not be representative of effects-based concentrations. For this reason, an additional search for toxicity-based benchmarks was conducted. USEPA Region V developed a screening value of 709,000 µg/kg for di-n-

octylphthalate (based on toxicity to the masked shrew; USEPA 2003a). Di-n-octylphthalate was detected in four of 21 soil samples with a maximum detected concentration of 170J µg/kg, which is three orders of magnitude less than the Region V screening value. No additional toxicological data on di-n-octylphthalate was found in a search of the primary literature. Because all detections of di-n-octylphthalate at SWMU 303/318 were less than the toxicity-based Region V screening value, this phthalate is not considered likely to pose adverse ecological effects, and no further evaluation is recommended.

7.3.6.2 Groundwater COPCs

Cis-1,2-Dichloroethene (DCE) was identified as a Category 3 COPC in the screening-level ERA because it was detected in groundwater but no screening value had been established by USEPA Region IV with which to evaluate potential risks. Cis-1,2-DCE was detected in five of seven groundwater samples and had a maximum detected concentration of 86 µg/L. This concentration is an order of magnitude less than the minimum available screening value established for trans-1,2-DCE by USEPA Region IV (1350 µg/L), which is closely related chemically. Based on the comparison of detected concentrations to the Region IV screening value established for a similar chemical, it is unlikely that cis-1,2-DCE is present in groundwater at concentrations that would pose unacceptable ecological risks, and no further evaluation is recommended.

The VOC 4-isopropyltoluene was identified as a Category 3 COPC in the screening-level ERA because it was detected in groundwater but no screening value had been established by USEPA Region IV with which to evaluate potential risks. 4-Isopropyltoluene was detected in two of seven groundwater samples with a maximum detected concentration of 6.4J µg/L. This concentration is less than the minimum available screening value established for VOCs (11.2 µg/L for 1,4-dichlorobenzene). No chemical-specific screening values for 4-isopropyltoluene were available; however, a search of the primary literature did result in one study on the toxic effects of 4-isopropyltoluene in freshwater. LeBlanc (1980) established a 48-hour LC_{50} of 6500 µg/L for effects to water flea (*Daphnia magna*) in a laboratory study. With a safety factor of 100, an estimated chronic toxicity value of 65.0 µg/L can be predicted. The maximum detected site concentration was an order of magnitude less than this predicted chronic toxicity value; therefore, it is unlikely that 4-isopropyltoluene is present in groundwater at concentrations that would pose unacceptable ecological risks, and no further evaluation is recommended.

The VOCs sec-butylbenzene and n-butylbenzene were identified as Category 3 COPCs in the screening-level ERA because they were detected in groundwater but no screening values had been established by USEPA Region IV with which to evaluate potential risks. Sec-butylbenzene was detected in two of seven groundwater samples (maximum detected concentration 5 µg/L), and n-butylbenzene was detected in three of seven groundwater samples (maximum detected concentration 49 µg/L). These concentrations are at the low end or less than the range of available screening values established for VOCs (11.2 µg/L for 1,4-dichlorobenzene to 5500 µg/L for chloromethane; Table 7-5). USEPA Region IV recommends the use of freshwater surface water benchmarks developed by the Texas Natural Resource Conservation Commission (TNRCC, 2001), which provides a value of 71 µg/L for n-butylbenzene and 82 µg/L for sec-butylbenzene. Maximum site concentrations of each chemical were less than these values. A search of the primary literature did not provide additional information for either chemical. Because maximum detected concentrations of sec-butylbenzene and n-butylbenzene were less than available screening values, they are considered unlikely to be present in site groundwater at concentrations that would cause adverse ecological effects; therefore, no further evaluation of these chemicals is recommended.

The VOC methylcyclohexane was identified as a Category 3 COPC in the screening-level ERA because it was detected in groundwater but no screening value had been established by USEPA Region IV with which to evaluate potential risks. Methylcyclohexane was detected in one of two groundwater samples at a concentration of 1J µg/L. This concentration is below the range of available screening values established for VOCs (11.2 µg/L for 1,4-dichlorobenzene to 5500 µg/L for chloromethane; Table 7-5). No screening values have been established for closely related chemicals. A search of the primary literature revealed multiple studies regarding ecological effects of methylcyclohexane. Of the freshwater studies, the lowest toxicity value reported was a 23 day LC_{50} of 1,300 µg/L (effects on the rainbow trout, *Oncorhynchus mykiss*). When a safety factor of 100 is applied to this value, a chronic toxicity value of 13.00 µg/L is predicted. The detected concentration of methylcyclohexane at the SWMU were well below this predicted toxicity value. Because the detected concentration of methylcyclohexane was less than available screening values for VOCs and predicted chronic toxicity values based on literature data, this chemical is not likely to pose adverse effects to ecological receptors within the drainage way, and no further evaluation is recommended.

7.4 Risk Characterization

The risk characterization integrates the results of the screening level ERA and Step 3a. The likelihood of adverse effects occurring as a result of exposure to a stressor is evaluated. The ecological significance of the risks characterized at the site is discussed considering the types and magnitudes of the effects and their spatial and temporal patterns. Ecologically significant risks are defined as those potential adverse risks or impacts to ecological integrity that affect populations, communities, and ecosystems, rather than individuals (i.e. measured impacts to individuals does not necessarily indicate impacts to the ecosystem).

7.4.1 Surface Soil

Of the 100 chemicals identified as ecological COPCs in surface soil based on Steps 1 and 2 of the screening-level ERA, two VOCs (1,2-dichlorobenzene and 1,4-dichlorobenzene), two SVOCs (bis[2-ethylhexyl]phthalate and butylbenzylphalate), and two inorganic constituents (cadmium and chromium) are considered ecological risk drivers at SWMU 303/318 based on the results of Step 3a. A characterization of the risk posed by these chemicals and recommendations for further action are provided in the following paragraphs.

The VOCs 1,2-dichlorobenzene and 1,4-dichlorobenzene were identified as Category 1 COPCs because maximum detected concentrations exceeded the USEPA Region IV screening value of 10 µg/kg. Both of these chemicals are often found in petroleum hydrocarbons, such as fuels, and as such are considered site-related. The screening value listed on Table 7-5 for both of these VOCs (10 microgram per kilogram [µg/kg]) is a Dutch "target" soil screening value (MHSPE, 1994), which represents soil quality required for "the full restoration of the soil's functionality for human, animal, and plant life" (Friday 1998); these values are highly conservative. Only the maximum detected concentrations of 1,2-dichlorobenzene (9,200 µg/kg) and 1,4-dichlorobenzene (4,300 µg/kg) exceed this screening value. Both of these exceedences were in sample SWMU318-SS01-00. It should be noted that sample SWMU318-SS01 was collected from 0-2 feet bgs; therefore, concentrations detected in this sample may not be representative of the concentrations to which terrestrial flora (grasses, herbs) or invertebrates may be exposed. Based on the location of sample SWMU318-SS01 and lack of screening value exceedences in neighboring soil samples, contamination appears to be limited to the drainage way in the vicinity of the oil/water separator discharge pipe. Although only one location at the site contained 1,2-

dichlorobenzene and 1,4-dichlorobenzene in excess of soil screening values, location-specific HQs (920 for 1,2-dichlorobenzene and 430 for 1,4-dichlorobenzene) indicated a high potential for adverse ecological impacts. Based upon these considerations, 1,2-dichlorobenzene and 1,4-dichlorobenzene are identified as potential risk driving ecological COPCs in surface soils. The removal of contaminated soils in the vicinity of SWMU318-SS01 is recommended for the protection of the environment.

The SVOCs bis(2-ethylhexyl)phthalate and butylbenzylphthalate were identified as a Category 3 COPCs in Step 3 of the SLERA because they were detected in surface soils and lacked USEPA Region IV soil screening values. The screening value listed on Table 7-5 for each of these chemicals (100 µg/kg) was provided by NCDENR to screen total phthalates; maximum detected concentrations of bis(2-ethylhexyl)phthalate and butylbenzylphthalate exceeded this value. The original source of the 100 µg/kg screening value is a Dutch soil screening benchmark (MHSPE, 1994). This screening value represents background concentrations, and is not based on toxicological data; therefore, it may not be representative of effects-based concentrations. For this reason, an additional search for toxicity-based benchmarks was conducted for both of these phthalates.

USEPA Region V (USEPA, 2003a) has developed screening values for RCRA hazardous materials, including a value of 925 µg/kg for bis(2-ethylhexyl)phthalate. This screening value is based on toxicity to the masked shrew (*Sorex cinerus*) (USEPA 2003a). Bis(2-ethylhexyl)phthalate was detected in 14 of 21 surface soil samples at concentrations ranging from 46J µg/kg to 22,000 µg/kg. Of the 14 detected concentrations, five exceeded the 925 µg/kg Region V benchmark (1400J µg/kg in SWMU318-SS02 [location-specific HQ = 1.5], 22,000J µg/kg in SWMU318-SS01 [HQ = 23.8], 1100J µg/kg in SWMU 318-SS03 [HQ = 1.2], 1100 µg/kg in SWMU318-TW03 [HQ = 1.2], and 2100 µg/kg in SWMU318-SB24 [HQ = 2.3]). It should be noted that the USEPA (1989) identifies the phthalate esters (including bis[2-ethylhexyl]phthalate, butylbenzylphthalate, and di-n-octylphthalate) as common laboratory contaminants; therefore, the presence of these chemicals may be attributable to analytical procedures and not to site-related factors. Data validation removes the uncertainty regarding potential laboratory contamination; however, with the exception of SWMU318-SB24, the samples with bis(2-ethylhexyl)phthalate concentrations in excess of the Region V screening benchmark were collected during the CSI and were not validated. Evenso, the site use and pattern of detections suggest that the site-relatedness of this SVOC cannot be ruled out. A search

of the primary literature for studies on the toxicological effects of bis(2-ethylhexyl)phthalate to soil flora and fauna yielded one study. Neuhauser et al. (1985) investigated the toxic effect of bis(2-ethylhexyl)phthalate on *Lactuca sativa* (lettuce) growth in a natural soil (1.4 percent TOC). After 14-days of exposure, lettuce growth (biomass) was not affected by the single concentration tested (1,000,000 µg/kg). Application of a conservative safety factor of 100 yields an estimated chronic NOAEL equal to 10,000 µg/kg. Only the maximum detected site concentration of bis(2-ethylhexyl)phthalate (22,000J µg/kg in SWMU318-SS01) exceeded this value. Based upon the preceding information, bis(2-ethylhexyl)phthalate within surface soil at SWMU 303/318 may pose unacceptable risk to terrestrial receptors. With one exception, location-specific HQs indicate a low potential for adverse effects, and do not warrant additional evaluation. A hot spot of bis(2-ethylhexyl)phthalate at location SWMU318-SS01 has a moderate to high potential to pose unacceptable ecological risks. The removal of contaminated soils in the vicinity of this location is recommended for the protection of the environment. With the removal of this sample, mean concentrations of bis(2-ethylhexyl)phthalate at the site would be less than the Region V ecological screening value for this chemical, and site-wide risk would be within acceptable limits.

USEPA Region V developed a screening value of 239 µg/kg for butylbenzylphthalate (based on toxicity to the masked shrew; USEPA 2003a). Butylbenzylphthalate was detected in 3 of 21 samples at concentrations ranging from 65J µg/kg to 2000J µg/kg. Only the maximum detected concentration (2000J µg/kg in SWMU318-SS01) exceeded the Region V screening value. No additional toxicological data on butylbenzylphthalate was found in a search of the primary literature. The location-specific HQ for butylbenzylphthalate at SWMU318-SS01 (calculated with the Region V value) is 8.37, indicating a low to moderate potential for adverse effects to receptors at this location. It should again be noted that sample SWMU318-SS01 was collected from 0 to 2 feet bgs, and therefore extends below the most biologically active soil zone. Based upon the preceding considerations, butylbenzylphthalate in the vicinity of SWMU318-SS01 may pose adverse effects to ecological receptors. Soils in the vicinity of this sample are recommended for removal for the protection of the environment.

Cadmium was identified as a Category 1 COPC. Cadmium was detected in 13 of 20 samples at concentrations ranging from 0.081J to 57.2 mg/kg; four of these detections were in excess of the soil screening value of 1.6 mg/kg. The maximum detected concentration (57.2 mg/kg in sample SWMU318-SS01-00) represents a hot spot of cadmium contamination located at the middle of the drainage ditch adjacent to the oil/water separator. The location-specific HQ for SWMU318-

SS01-00 is 35.75. As discussed previously, because sample SWMU318-SS01-00 was collected from 0 – 2 feet bgs, there is some uncertainty regarding the concentration of cadmium in the most ecologically relevant soil depth (0 – 1 foot bgs). The three additional detections that were in excess of the soil screening value were from sample SWMU318-IS02-00 (3 mg/kg; collected from 0 – 2 feet bgs), sample SWMU318-SS02-00 (3.5 mg/kg; collected from 0 – 1 foot bgs), and sample SWMU318-SB16-00 (3.1 mg/kg; collected from 0 – 1 foot bgs). Cadmium concentrations in each of these three samples are approximately twice the soil screening value, indicating a low potential for adverse effects. Like sample SWMU318-SS01, samples SWMU318-IS02 and SWMU318-SS02 are located in the drainage way adjacent to the oil/water separator. Sample SWMU318-SS16-00 is located in the grassy area north-northwest of SWMU 303. It should be noted that the USEPA has established ecological soil screening levels (Eco-SSLs) for cadmium as follows (USEPA 2005a): plants 32 mg/kg, soil invertebrates 140 mg/kg, avian receptors 0.77 mg/kg, and mammalian receptors 0.36 mg/kg. The USEPA Region IV screening value used in this risk evaluation is on the low end of the range of these values. Based on the elevated location specific risk posed by cadmium at SWMU318-SS01, the removal of soils in the vicinity of this sample is recommended. If the hot spot of cadmium contamination at SWMU318-SS01-00 were removed, the mean concentration of cadmium at the site would be less than the soil screening value, and risk to ecological receptors would be within acceptable levels.

Chromium was identified as a Category 1 COPC with a maximum HQ of 227.75 and a mean HQ of 46.15. Chromium was detected in each of the 20 surface soil samples (concentrations ranged from 3.7 to 91.1 mg/kg); each of these detections was in excess of the soil screening value (0.4 mg/kg). The USEPA Region IV ecological screening value for chromium was derived from earthworm toxicity studies on the chromium VI form of the element (Efroymson et al. 1997b). In addition to the USEPA Region IV screening value for chromium, the Federal USEPA has established Eco-SSLs for this metal (USEPA 2005b). An Eco-SSL of 26 mg/kg (Cr III) was established for avian receptors, while Eco-SSLs of 34 mg/kg (Cr III) and 81 mg/kg (Cr VI) were established for mammalian receptors. With two exceptions (91.1 mg/kg in sample SWMU318-SS01 and 48.2 mg/kg in SWMU318-IS02), chromium concentrations at SWMUs 303/318 were less than each of these values. Insufficient data were available for the USEPA to establish Eco-SSLs for terrestrial plants or invertebrates; however, USEPA 2005b does provide data from two invertebrate toxicity studies that they consider eligible for Eco-SSL derivation (a minimum of three studies are required to establish an Eco-SSL). In the first study, Van Gestel et al, (1992) identified a MATC of 57 mg/kg for effects on reproduction of the earthworm *Eisenia andrei* in

soils with a pH of 6.7. In 1993, the same researchers studied reproductive effects of chromium on *E. andrei* in a soil with a pH of 6.0 and again identified a MATC of 57 mg/kg (Van Gestel et al., 1993). With the exception of the maximum detected concentration, site concentrations of chromium were less than these toxicity-based values. Based on comparisons to federal Eco-SSLs, chromium in the vicinity of SWMU318-SS01 and SWMU318-IS02 may pose adverse ecological impacts. The removal of these soils is recommended for the protection of the environment.

7.4.2 Groundwater

The potential for shallow and intermediate groundwater to impact off-site aquatic habitat via migration and discharge was evaluated in conjunction with the RI conducted at Site 86 (Baker, 2003). This evaluation concluded that no additional evaluation of groundwater was warranted for the protection of off-site ecological receptors. Groundwater in the surficial aquifer was also evaluated for the potential to cause adverse effects to ecological receptors assuming that the groundwater may discharge to the on-site drainage area east of SWMU 318. Although there is no direct evidence that groundwater does discharge to this area, the assessment was conducted as a conservative measure. Of the 93 chemicals identified as groundwater ecological COPCs in the screening-level ERA, based on additional considerations addressed in Step 3a of the BERA, none are estimated to pose unacceptable risks to ecological receptors that may inhabit the drainage area, and no further evaluation is recommended.

7.5 Uncertainties Associated with Step 3a of the Baseline ERA

Many of the uncertainties identified in Section 7.2.3 also apply to the refined screening level risk calculation. Additionally, many uncertainties present in the screening level risk calculation are reduced or eliminated with the Step 3a evaluation. No additional uncertainties have been identified for Step 3a of the baseline ERA at SWMU 303/318.

7.6 Summary

Limited terrestrial habitat is present at SWMU 303/318. This habitat is a maintained lawn area, which is a highly modified low-quality habitat. The lawn may be used by terrestrial flora, fauna, and avian upper trophic level receptors. Of the 101 chemicals identified as ecological COPCs in

surface soil based on Steps 1 and 2 of the screening level ERA, two VOCs (1,2-dichlorobenzene and 1,4-dichlorobenzene), two SVOCs (bis[2-ethylhexyl]phthalate and butylbenzylphalate), and two inorganic constituents (cadmium and chromium) are considered ecological risk drivers at SWMU 303/318 based on the results of Step 3a. Maximum detected concentrations of each of these six chemicals were detected in sample SWMU318-SS01, located within the drainage area near the oil/water separator discharge pipe. The only detections of 1,2-dichlorobenzene and 1,4-dichlorobenzene in excess of soil screening values (10 µg/kg, MHSPE 1994) were in sample SWMU318-SS01. Bis(2-ethylhexyl)phthalate concentrations exceeded the toxicity based chemical specific screening value provided by USEPA Region V (925 µg/kg) at five locations; however, location-specific HQs indicated a low potential for adverse effects (HQs less than 2.5) for all locations with the exception of SWMU318-SS01. SWMU318-SS01 was also the only location at which butylbenzylphthalate concentrations exceeded the toxicity based USEPA Region V screening value (239 µg/kg). Cadmium concentrations exceeded the Region IV screening value at four locations; however, as with bis(2-ethylhexyl)phthalate, with the exception of location SWMU318-SS01, the potential for adverse effects from cadmium at the site was low (location-specific HQs less than 2.5). Finally, based on comparisons to federal Eco-SSLs, chromium concentrations in the vicinity of SWMU318-SS01 and SWMU318-IS02 (located just west of SWMU318-SS01) were indicated to pose adverse risk to ecological receptors. The removal of contaminated soils from the vicinity of SWMU318-SS01 and SWMU318-IS02 would eliminate unacceptable risk to terrestrial receptors at SWMUs 303/318. In the case of bis(2-ethylhexyl)phthalate and cadmium, the removal of these soils would result in mean site concentrations below toxicity based screening values, indicative of acceptable population level risk.

Aquatic habitat at the site was limited to the drainage way east of the oil/water separator. The potential for groundwater to pose a risk to this habitat was evaluated assuming discharge of the water to the drainage way with no dilution or natural attenuation. Of the 93 chemicals identified as groundwater ecological COPCs in the screening-level ERA, based on additional considerations addressed in Step 3a of the BERA, none are estimated to pose unacceptable risks to ecological receptors that may inhabit the drainage area, and no further evaluation is recommended. The potential for shallow and intermediate groundwater to impact off-site aquatic habitat via migration and discharge was evaluated in conjunction with the RI conducted at Site 86 (Baker, 2003); this evaluation concluded that no additional evaluation of groundwater was warranted for the protection of off-site ecological receptors.

7.7 References

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TABLES

TABLE 7-1
SUMMARY OF ANALYTICAL DATA USED IN THE SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Media	Sample ID	Date Sampled	Sample Interval (Feet below ground surface)	Analysis					Comments
				TCL VOCs (SW 846 Method 8260B - mobile laboratory)	TCL VOCs (OLMO 4.2)	TCL VOCs (OLMO 4.2) - BTEX only	TCL SVOCs (OLMO 4.2)	RCRA Metals (ILMO 4.1)	
Surface Soil	SWMU303-IS04-00	3/19/2002	0 - 1		X				Relabled "SWMU303-IS04-00B"
	SWMU303-SB01-00	3/19/2002	0 - 1				X	X	
	SWMU303-SB02-00	3/19/2002	0 - 1				X	X	
	SWMU303-TW01-00	3/19/2002	0 - 1				X	X	
	SWMU303-TW02-00	3/20/2002	0 - 1				X	X	
	SWMU303-TW03-00	3/20/2002	0 - 1				X	X	
	SWMU318-IS01-00	9/14/1997	0 - 2			X	X	X	deep but no nearby samples in source area
	SWMU318-IS02-00	9/14/1997	0 - 2			X	X	X	deep but no nearby samples in source area
	SWMU318-IS03-00	9/14/1997	0 - 2			X	X	X	deep but no nearby samples in source area
	SWMU318-SS01-00	9/14/1997	0 - 2			X	X	X	deep but no nearby samples in source area
	SWMU318-SS02-00	3/19/2002	0 - 1		X		X	X	
	SWMU318-SS03-00	3/19/2002	0 - 1		X		X	X	
	SWMU318-TW01-00	3/20/2002	0 - 1		X		X	X	
	SWMU318-TW02-00	3/20/2002	0 - 1		X		X	X	
	SWMU318-TW03-00	3/20/2002	0 - 1		X		X	X	
	SWMU318-SB05-00	3/16/2004	0 - 1	X					
	SWMU318-SB06-00	3/16/2004	0 - 1	X	X				
	SWMU318-SB09-00	3/22/2004	0 - 1	X	X		X	X	
	SWMU318-SB10-00	3/23/2004	0 - 1	X			X	X	
	SWMU318-SB11-00	3/22/2004	0 - 1	X					
	SWMU318-SB12-00	3/22/2004	0 - 1	X					
	SWMU318-SB16-00	2/4/2005	0 - 1	X	X		X	X	
	SWMU318-SB19-00	2/4/2005	0 - 1	X	X		X	X	
	SWMU318-SB20-00	2/3/2005	0 - 1	X	X				
	SWMU318-SB21-00	2/3/2005	0 - 1	X	X		X	X	
	SWMU318-SB22-00	2/7/2005	0 - 1	X					
	SWMU318-SB23-00	2/3/2005	0 - 1	X	X		X		
	SWMU318-SB24-00	2/7/2005	0 - 1	X	X		X	X	
	SWMU318-SB26-00	2/4/2005	0 - 1	X					
	SWMU318-SB27-00	2/7/2005	0 - 1	X					
	SWMU318-SB28-00	2/8/2005	0 - 1	X					

TABLE 7-1
SUMMARY OF ANALYTICAL DATA USED IN THE SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Media	Sample ID	Date Sampled	Sample Interval (Feet below ground surface)	Analysis					Comments
				TCL VOCs (SW 846 Method 8260B - mobile laboratory)	TCL VOCs (OLMO 4.2)	TCL VOCs (OLMO 4.2) - BTEX only	TCL SVOCs (OLMO 4.2)	RCRA Metals (ILMO 4.1)	
Shallow Groundwater	SWMU318-GW01	3/19/2004	12-16	X	X		X		
	SWMU318-GW03	3/18/2004	12-16	X	X		X		
	SWMU318-GW04	3/18/2004	12-16	X	X		X		
	SWMU318-GW07	3/18/2004	10-14	X	X				
	SWMU318-GW08	3/17/2004	12-16	X					
	SWMU318-GW14	3/22/2004	12-16	X					
	SWMU318-GW28	6/24/2004	10-14	X					

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	USEPA Region IV Recommended Surface Soil Screening Values	
Analyte	**(ug/kg) or (mg/kg) [1,2]**	**Comment**
Volatile Organics:		
1,1,1-Trichloroethane	100	value for aliphatic chlorinated hydrocarbons
1,1,1,2-Tetrachloroethane	100	value for aliphatic chlorinated hydrocarbons
1,1,2,2-Tetrachloroethane	100	value for aliphatic chlorinated hydrocarbons
1,1,2-Trichloro-1,2,2-trifluoroethane	100	value for aliphatic chlorinated hydrocarbons
1,1,2-Trichloroethane	100	value for aliphatic chlorinated hydrocarbons
1,1-Dichloroethane	100	value for aliphatic chlorinated hydrocarbons
1,1-Dichloroethene	100	value for aliphatic chlorinated hydrocarbons
1,1-Dichloropropene	NA	
1,2-Dibromoethane	NA	
1,2-Dibromo-3-chloropropane (DBCP)	100	value for aliphatic chlorinated hydrocarbons
1,2-Dichloroethane	400	
1,2-Dichloroethene (Total)	100	value for aliphatic chlorinated hydrocarbons
1,2-Dichloroethene (cis)	100	value for aliphatic chlorinated hydrocarbons
1,2-Dichloroethene (trans)	100	value for aliphatic chlorinated hydrocarbons
1,2-Dichloropropane	700,000	
1,2,3-Trichlorobenzene	10	value for trichlorobenzene
1,2,3-Trichloropropane	NA	
1,2,4-Trimethylbenzene	NA	
1,3,5-Trimethylbenzene	NA	
1,3-Dichloropropane	NA	
2,2-Dichloropropane	NA	
2-Butanone	NA	
2-Chlorotoluene	NA	
2-Hexanone	NA	
4-Chlorotoluene	NA	
4-Isopropyltoluene	NA	
4-Methyl-2-Pentanone	NA	
Acetone	NA	
Benzene	50	
Bromobenzene	NA	
Bromochloromethane	100	value for aliphatic chlorinated hydrocarbons
Bromodichloromethane	100	value for aliphatic chlorinated hydrocarbons
Bromoform	NA	
Bromomethane	NA	
Butylbenzene, n-	NA	
Butylbenzene, sec-	NA	
Butylbenzene, tert-	NA	
Carbon Disulfide	NA	
Carbon Tetrachloride	1,000,000	
Chlorobenzene	50	
Chloroethane	100	value for aliphatic chlorinated hydrocarbons
Chloroform	1	
Chloromethane	100	value for aliphatic chlorinated hydrocarbons
cis-1,3-Dichloropropene	100	value for aliphatic chlorinated hydrocarbons
Cyclohexane	100	
Dibromomethane	NA	
Dibromochloromethane	100	value for aliphatic chlorinated hydrocarbons
Dichlorodifluoromethane	100	value for aliphatic chlorinated hydrocarbons
Ethylbenzene	50	
Isopropylbenzene (Cumene)	100	value for monocyclic aromatic hydrocarbons
Methyl Acetate	NA	
Methyl Cyclohexane	100	value for monocyclic aromatic hydrocarbons
Methyl tert-butyl ether	NA	
Methylene Chloride	2000	
Propylbenzene, n-	NA	
Styrene	100	

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	USEPA Region IV Recommended Surface Soil Screening Values	
Analyte	**(ug/kg) or (mg/kg) [1,2]**	**Comment**
Volatile Organics (Cont.):		
Tetrachloroethene	10	
Toluene	50	
trans-1,3-Dichloropropene	100	value for aliphatic chlorinated hydrocarbons
Trichloroethene (TCE)	1	
Trichlorofluoromethane	100	value for aliphatic chlorinated hydrocarbons
Vinyl Chloride	10	
Xylene, m-	50	value for total xylenes
Xylene, o-	50	value for total xylenes
Xylene (Total)	50	
Semivolatile Organics:		
1,1'-Biphenyl	60,000	
1,2,4-Trichlorobenzene	10	value for trichlorobenzene
1,2-Dichlorobenzene	10	value for dichlorobenzene
1,3-Dichlorobenzene	10	value for dichlorobenzene
1,4-Dichlorobenzene	10	value for dichlorobenzene
2,2'-Oxybis (1-Chloropropane)	100	value for aliphatic chlorinated hydrocarbons
2,4,5-Trichlorophenol	4,000	
2,4,6-Trichlorophenol	10,000	
2,4-Dichlorophenol	3	value for total dichlorophenols
2,4-Dimethylphenol	500	value for cresols
2,4-Dinitrophenol	20,000	
2,4-Dinitrotoluene	NA	
2,6-Dinitrotoluene	NA	
2-Chloronaphthalene	1000	value for chloronapthalene
2-Chlorophenol	NA	
2-Methylnaphthalene	NA	
2-Methylphenol	500	value for cresols
2-Nitroaniline	NA	
2-Nitrophenol	7,000	value for 4-nitrophenol
3,3'-Dichlorobenzidine	100	value for total polycyclic chlorinated hydrocarbons
3-Nitroaniline	NA	
4,6-Dinitro-2-Methylphenol	NA	
4-Bromophenyl-Phenylether	NA	
4-Chloro-3-Methylphenol	NA	
4-Chloroaniline	NA	
4-Chlorophenyl-Phenylether	10	value for chlorophenols
4-Methylphenol	500	value for cresols
4-Nitroaniline	NA	
4-Nitrophenol	7,000	
Acenaphthene	NA	
Acenaphthylene	NA	
Acetophenone	NA	
Anthracene	NA	
Atrazine	0.05	
Benzaldehyde	100	value for monocyclic aromatic hydrocarbons
Benzo(a)anthracene	NA	
Benzo(a)pyrene	NA	
Benzo(b)fluoranthene	NA	
Benzo(g,h,i)perylene	NA	
Benzo(k)fluoranthene	NA	
bis(2-Chloroethyl)ether	100	value for aliphatic chlorinated hydrocarbons
bis(2-Chloroethoxy)methane	100	value for aliphatic chlorinated hydrocarbons
bis(2-Ethylhexyl)phthalate	NA	see value for total phthalates
Butylbenzylphthalate	NA	see value for total phthalates
Caprolactam	NA	
Carbazole	NA	

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	USEPA Region IV Recommended Surface Soil Screening Values	
Analyte	**(ug/kg) or (mg/kg) [1,2]**	**Comment**
Semivolatile Organics (Cont):		
Chrysene	NA	
Dibenzo(a,h)anthracene	NA	
Dibenzofuran	NA	
Diethylphthalate	100,000	
Dimethylphthalate	200,000	
Di-n-butylphthalate	200,000	
Di-n-octylphthalate	NA	
Fluoranthene	NA	
Fluorene	NA	
Hexachlorobenzene	2.5	
Hexachlorobutadiene	100	value for aliphatic chlorinated hydrocarbons
Hexachlorocyclopentadiene	10,000	
Hexachloroethane	100	value for aliphatic chlorinated hydrocarbons
Indeno(1,2,3-cd)pyrene	NA	
Isophorone	NA	
Naphthalene	NA	
Nitrobenzene	40,000	
n-Nitroso-di-n-propylamine	NA	
n-Nitrosodiphenylamine	20,000	
Pentachlorophenol	2	
Phenanthrene	NA	
Phenol	50	
Pyrene	NA	
PAHs (total)	1000	
Phthalates (total)	100	
Total Inorganics:		
Arsenic	10	
Barium	165	
Cadmium	1.6	
Chromium (Total)	0.4	
Chromium III	0.4	Value for Chromium (total)
Chromium VI	0.4	Value for Chromium (total)
Lead	50	
Mercury	0.1	
Selenium	0.81	
Silver	2	

Notes:

NA = Not Applicable/ Not Established

[1] Soil screening values are in microgram per kilogram (ug/kg) for organic compounds and in milligram per kilogram (mg/kg) for inorganic constituents.

[2] Values obtained from *Guidelines for Performing Screening Level Ecological Risk Assessments Within the North Carolina Division of Waste Management* (NCDENR 2003)

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	USEPA Region IV Recommended Freshwater Screening Values [1]	
Analyte	**(ug/L)**	**Comment**
Volatile Organics:		
1,1,1-Trichloroethane	528	
1,1,1,2-Tetrachloroethane	NA	
1,1,2,2-Tetrachloroethane	240	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	
1,1,2-Trichloroethane	940	
1,1-Dichloroethane	NA	
1,1-Dichloroethene	303	
1,1-Dichloropropene	NA	
1,2-Dibromoethane	NA	
1,2-Dibromo-3-chloropropane (DBCP)	NA	
1,2-Dichloroethane	2000	
1,2-Dichloroethene (Total)	1350	value for 1,2-dichloroethene(trans)
1,2-Dichloroethene (cis)	NA	
1,2-Dichloroethene (trans)	1350	
1,2-Dichloropropane	525	
1,2,3-Trichlorobenzene	NA	
1,2,3-Trichloropropane	NA	
1,2,4-Trimethylbenzene	NA	
1,3,5-Trimethylbenzene	NA	
1,3-Dichloropropane	NA	
2,2-Dichloropropane	NA	
2-Butanone	NA	
2-Chlorotoluene	NA	
2-Hexanone	NA	
4-Chlorotoluene	NA	
4-Isopropyltoluene	NA	
4-Methyl-2-Pentanone	NA	
Acetone	NA	
Benzene	53	
Bromobenzene	NA	
Bromochloromethane	NA	
Bromodichloromethane	NA	
Bromoform	293	
Bromomethane	110	
Butylbenzene, n-	NA	
Butylbenzene, sec-	NA	
Butylbenzene, tert-	NA	
Carbon Disulfide	NA	
Carbon Tetrachloride	352	
Chlorobenzene	195	
Chloroethane	NA	
Chloroform	289	
Chloromethane	5500	
cis-1,3-Dichloropropene	24.4	
Cyclohexane	NA	
Dibromomethane	NA	
Dibromochloromethane	NA	
Dichlorodifluoromethane	NA	
Ethylbenzene	453	
Isopropylbenzene (Cumene)	NA	
Methyl Acetate	NA	
Methyl Cyclohexane	NA	
Methyl tert-butyl ether	NA	
Methylene Chloride	1930	
Propylbenzene, n-	NA	
Styrene	NA	

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	USEPA Region IV Recommended Freshwater Screening Values [1]	
Analyte	**(ug/L)**	**Comment**
Volatile Organics (Cont.):		
Tetrachloroethene	84	
Toluene	175	
trans-1,3-Dichloropropene	24.4	Cis and Trans isomers
Trichloroethene (TCE)	NA	
Trichlorofluoromethane	NA	
Vinyl Chloride	NA	
Xylene, m-	NA	
Xylene, o-	NA	
Xylene (Total)	NA	
Semivolatile Organics:		
1,1'-Biphenyl	NA	
1,2,4-Trichlorobenzene	44.9	
1,2-Dichlorobenzene	15.8	
1,3-Dichlorobenzene	50.2	
1,4-Dichlorobenzene	11.2	
2,2'-Oxybis (1-Chloropropane)	NA	
2,4,5-Trichlorophenol	NA	
2,4,6-Trichlorophenol	3.2	
2,4-Dichlorophenol	36.5	
2,4-Dimethylphenol	21.2	
2,4-Dinitrophenol	6.2	
2,4-Dinitrotoluene	310	
2,6-Dinitrotoluene	NA	
2-Chloronaphthalene	NA	
2-Chlorophenol	43.8	
2-Methylnaphthalene	NA	
2-Methylphenol	NA	
2-Nitroaniline	NA	
2-Nitrophenol	3500	
3,3'-Dichlorobenzidine	NA	
3-Nitroaniline	NA	
4,6-Dinitro-2-Methylphenol	2.3	
4-Bromophenyl-Phenylether	12.2	
4-Chloro-3-Methylphenol	0.3	
4-Chloroaniline	NA	
4-Chlorophenyl-Phenylether	NA	
4-Methylphenol	NA	
4-Nitroaniline	NA	
4-Nitrophenol	82.8	
Acenaphthene	17	
Acenaphthylene	NA	
Acetophenone	NA	
Anthracene	NA	
Atrazine	NA	
Benzaldehyde	NA	
Benzo(a)anthracene	NA	
Benzo(a)pyrene	NA	
Benzo(b)fluoranthene	NA	
Benzo(g,h,i)perylene	NA	
Benzo(k)fluoranthene	NA	
bis(2-Chloroethyl)ether	2380	
bis(2-Chloroethoxy)methane	NA	
bis(2-Ethylhexyl)phthalate	0.299	
Butylbenzylphthalate	22	
Caprolactam	NA	
Carbazole	NA	

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	USEPA Region IV Recommended Freshwater Screening Values [1]	
Analyte	**(ug/L)**	**Comment**
Semivolatile Organics (Cont):		
Chrysene	NA	
Dibenzo(a,h)anthracene	NA	
Dibenzofuran	NA	
Diethylphthalate	521	
Dimethylphthalate	330	
Di-n-butylphthalate	9.4	
Di-n-octylphthalate	0.3	value for bis(2-ethylhexyl)phthalate
Fluoranthene	39.8	
Fluorene	NA	
Hexachlorobenzene	NA	
Hexachlorobutadiene	0.93	
Hexachlorocyclopentadiene	0.07	
Hexachloroethane	9.8	
Indeno(1,2,3-cd)pyrene	NA	
Isophorone	1170	
Naphthalene	62	
Nitrobenzene	270	
n-Nitroso-di-n-propylamine	NA	
n-Nitrosodiphenylamine	58.5	
Pentachlorophenol	12.8	pH = 7.8 S.U.
Phenanthrene	NA	
Phenol	256	
Pyrene	NA	
PAHs (total)	17	Value for acenaphthene
Phthalates (total)	NA	
Total Inorganics:		
Arsenic	190	Trivalent (+3) form
Barium	NA	
Cadmium	0.16	Hardness = 50 mg CaCO3/L (default)[2]
Chromium (Total)	NA	
Chromium III	117.32	Hardness = 50 mg CaCO3/L (default)
Chromium VI	11	
Lead	1.32	Hardness = 50 mg CaCO3/L (default)
Mercury	0.012	
Selenium	5	
Silver	0.012	

Notes:

NA = Not Applicable/ Not Established

USEPA = United States Environmental Protection Agency

[1] Values obtained from *Guidelines for Performing Screening Level Ecological Risk Assessments within the North Carolina Division of Waste Management* (NCDENR 2003)

[2] USEPA Region IV hardness based calculation updated to reflect current ambient water quality criteria (USEPA 2002).

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	North Carolina Surface Water Quality Standard for Aquatic Life - Fresh Water[1]	
Analyte	**(ug/L)**	**Comment**
Volatile Organics:		
1,1,1-Trichloroethane	NA	
1,1,1,2-Tetrachloroethane	NA	
1,1,2,2-Tetrachloroethane	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	
1,1,2-Trichloroethane	NA	
1,1-Dichloroethane	NA	
1,1-Dichloroethene	NA	
1,1-Dichloropropene	NA	
1,2-Dibromoethane	NA	
1,2-Dibromo-3-chloropropane (DBCP)	NA	
1,2-Dichloroethane	NA	
1,2-Dichloroethene (Total)	NA	
1,2-Dichloroethene (cis)	NA	
1,2-Dichloroethene (trans)	NA	
1,2-Dichloropropane	NA	
1,2,3-Trichlorobenzene	NA	
1,2,3-Trichloropropane	NA	
1,2,4-Trimethylbenzene	NA	
1,3,5-Trimethylbenzene	NA	
1,3-Dichloropropane	NA	
2,2-Dichloropropane	NA	
2-Butanone	NA	
2-Chlorotoluene	NA	
2-Hexanone	NA	
4-Chlorotoluene	NA	
4-Isopropyltoluene	NA	
4-Methyl-2-Pentanone	NA	
Acetone	NA	
Benzene	NA	
Bromobenzene	NA	
Bromochloromethane	NA	
Bromodichloromethane	NA	
Bromoform	NA	
Bromomethane	NA	
Butylbenzene, n-	NA	
Butylbenzene, sec-	NA	
Butylbenzene, tert-	NA	
Carbon Disulfide	NA	
Carbon Tetrachloride	0.4	
Chlorobenzene	NA	
Chloroethane	NA	
Chloroform	NA	
Chloromethane	NA	
cis-1,3-Dichloropropene	NA	
Cyclohexane	NA	
Dibromomethane	NA	
Dibromochloromethane	NA	
Dichlorodifluoromethane	NA	
Ethylbenzene	NA	
Isopropylbenzene (Cumene)	NA	
Methyl Acetate	NA	
Methyl Cyclohexane	NA	
Methyl tert-butyl ether	NA	
Methylene Chloride	NA	
Propylbenzene, n-	NA	
Styrene	NA	

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	North Carolina Surface Water Quality Standard for Aquatic Life - Fresh Water[1]	
Analyte	**(ug/L)**	**Comment**
Volatile Organics (Cont.):		
Tetrachloroethene	NA	
Toluene	0.36	
trans-1,3-Dichloropropene	NA	
Trichloroethene (TCE)	NA	
Trichlorofluoromethane	NA	
Vinyl Chloride	NA	
Xylene, m-	NA	
Xylene, o-	NA	
Xylene (Total)	NA	
Semivolatile Organics:	NA	
1,1'-Biphenyl	NA	
1,2,4-Trichlorobenzene	NA	
1,2-Dichlorobenzene	NA	
1,3-Dichlorobenzene	NA	
1,4-Dichlorobenzene	NA	
2,2'-Oxybis (1-Chloropropane)	NA	
2,4,5-Trichlorophenol	NA	
2,4,6-Trichlorophenol	NA	
2,4-Dichlorophenol	NA	
2,4-Dimethylphenol	NA	
2,4-Dinitrophenol	NA	
2,4-Dinitrotoluene	NA	
2,6-Dinitrotoluene	NA	
2-Chloronaphthalene	NA	
2-Chlorophenol	NA	
2-Methylnaphthalene	NA	
2-Methylphenol	NA	
2-Nitroaniline	NA	
2-Nitrophenol	NA	
3,3'-Dichlorobenzidine	NA	
3-Nitroaniline	NA	
4,6-Dinitro-2-Methylphenol	NA	
4-Bromophenyl-Phenylether	NA	
4-Chloro-3-Methylphenol	NA	
4-Chloroaniline	NA	
4-Chlorophenyl-Phenylether	NA	
4-Methylphenol	NA	
4-Nitroaniline	NA	
4-Nitrophenol	NA	
Acenaphthene	NA	
Acenaphthylene	NA	
Acetophenone	NA	
Anthracene	NA	
Atrazine	NA	
Benzaldehyde	NA	
Benzo(a)anthracene	NA	
Benzo(a)pyrene	NA	
Benzo(b)fluoranthene	NA	
Benzo(g,h,i)perylene	NA	
Benzo(k)fluoranthene	NA	
bis(2-Chloroethyl)ether	NA	
bis(2-Chloroethoxy)methane	NA	
bis(2-Ethylhexyl)phthalate	NA	
Butylbenzylphthalate	NA	
Caprolactam	NA	
Carbazole	NA	

TABLE 7-2
ECOLOGICAL SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

	North Carolina Surface Water Quality Standard for Aquatic Life - Fresh Water[(1)]	
Analyte	**(ug/L)**	**Comment**
Semivolatile Organics (Cont):		
Chrysene	NA	
Dibenzo(a,h)anthracene	NA	
Dibenzofuran	NA	
Diethylphthalate	NA	
Dimethylphthalate	NA	
Di-n-butylphthalate	NA	
Di-n-octylphthalate	NA	
Fluoranthene	NA	
Fluorene	NA	
Hexachlorobenzene	NA	
Hexachlorobutadiene	NA	
Hexachlorocyclopentadiene	NA	
Hexachloroethane	NA	
Indeno(1,2,3-cd)pyrene	NA	
Isophorone	NA	
Naphthalene	NA	
Nitrobenzene	NA	
n-Nitroso-di-n-propylamine	NA	
n-Nitrosodiphenylamine	NA	
Pentachlorophenol	NA	
Phenanthrene	NA	
Phenol	NA	
Pyrene	NA	
PAHs (total)	NA	
Phthalates (total)	NA	
Total Inorganics:		
Arsenic	50	
Barium	NA	
Cadmium	0.4	
Chromium (Total)	50	
Chromium III	NA	
Chromium VI	NA	
Lead	25	
Mercury	0.012	
Selenium	5	
Silver	0.06	

Notes:
NA = Not Applicable/ Not Established
[(1)] Values obtained from *Guidelines for Performing Screening Level Ecological Risk Assessments Within the North Carolina Division of Waste Management* (NCDENR 2003). Original reference: North Carolina Water Quality Standards (North Carolina Administrative Code. Title 15A, Subchapter 2L) October 25, 1995. Last updated 1 April 2003.

TABLE 7-3
SELECTION OF ECOLOGICAL COPCs IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV ESV	Maximum Hazard Quotient	Soil COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [(1)]				
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	0/16	NA	NA	2U - 12U	12	100	0.12	No	
1,1,1-Trichloroethane (TCA)	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,1,2,2-Tetrachloroethane	0/22	NA	NA	2U - 12U	12	100	0.12	No	
1,1,2-Trichloro-1,2,2-trifluoroethane	0/10	NA	NA	5U - 12U	12	100	0.12	No	
1,1,2-Trichloroethane	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,1-Dichloroethane	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,1-Dichloroethene	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,1-Dichloropropene	0/16	NA	NA	1U - 12U	12	NA	NA	Yes	4
1,2,3-Trichlorobenzene	4/16	0.7J - 1.93J	SWMU318-SB16-00	5U - 12U	1.93	10	0.19	No	
1,2,3-Trichloropropane	0/10	NA	NA	2U	2	NA	NA	Yes	4
1,2,4-Trichlorobenzene	2/22	0.53J - 0.94J	SWMU318-SB26-00	5U - 12U	0.94	10	0.09	No	
1,2,4-Trimethylbenzene	2/16	0.59J - 0.65J	SWMU318-SB26-00	2U - 12U	0.65	NA	NA	Yes	3
1,2-Dibromo-3-chloropropane (DBCP)	0/22	NA	NA	5U - 12U	12	100	0.12	No	
1,2-Dibromoethane (EDB)	0/22	NA	NA	2U - 12U	12	NA	NA	Yes	4
1,2-Dichlorobenzene (o-)	1/26	9200 - 9200	SWMU318-SS01-00	1U - 12U	9200	10	920.00	Yes	1
1,2-Dichloroethane	0/22	NA	NA	1U - 12U	12	400	0.03	No	
1,2-Dichloroethene (cis)	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,2-Dichloroethene (total)	0/4	NA	NA	10U - 12U	12	100	0.12	No	
1,2-Dichloroethene (trans)	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,2-Dichloropropane	0/22	NA	NA	1U - 12U	12	700000	<0.01	No	
1,3,5-Trimethylbenzene	1/16	0.47J - 0.47J	SWMU318-SB20-00	2U - 12U	0.47	NA	NA	Yes	3
1,3-Dichlorobenzene (m-)	0/26	NA	NA	1U - 670U	670	10	67.00	Yes	2
1,3-Dichloropropane	0/16	NA	NA	1U - 12U	12	NA	NA	Yes	4
1,3-Dichloropropene (cis)	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,3-Dichloropropene (trans)	0/22	NA	NA	1U - 12U	12	100	0.12	No	
1,4-Dichlorobenzene (p-)	2/26	1.8 - 4300	SWMU318-SS01-00	1U - 12U	4300	10	430.00	Yes	1
2,2-Dichloropropane	0/16	NA	NA	1U - 12U	12	NA	NA	Yes	4
2-Butanone (MEK)	6/10	7J - 20	SWMU318-TW01-00	10UJ - 12U	20	NA	NA	Yes	3
2-Chlorotoluene	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
2-Hexanone (MBK)	1/10	3J - 3J	SWMU318-TW01-00	10UJ - 28U	3	NA	NA	Yes	3
4-Chlorotoluene	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
4-Isopropyltoluene	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
4-Methyl-2-pentanone (MIBK)	1/10	1J - 1J	SWMU318-TW01-00	10U - 28U	1	NA	NA	Yes	3
Acetone	6/10	27J - 78	SWMU318-TW01-00	10UJ - 12UJ	78	NA	NA	Yes	3
Benzene	2/26	2J - 2J	00,SWMU318-TW01-	1U - 670U	2	50	0.04	No	
Bromobenzene	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4

TABLE 7-3
SELECTION OF ECOLOGICAL COPCs IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV ESV	Maximum Hazard Quotient	Soil COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [1]				
Volatile Organic Compounds (ug/kg)(Cont.)									
Bromochloromethane	0/16	NA	NA	2U - 12U	12	100	0.12	No	
Bromodichloromethane	0/22	NA	NA	2U - 12U	12	100	0.12	No	
Bromoform	1/22	13 - 13	SWMU318-TW02-00	2U - 12U	13	NA	NA	Yes	3
Bromomethane	0/22	NA	NA	5U - 12U	12	NA	NA	Yes	4
Butylbenzene, sec-	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
Butylbenzene, tert-	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
Carbon Disulfide	2/10	2J - 3J	SWMU318-SS03-00	5U - 12U	3	NA	NA	Yes	3
Carbon Tetrachloride	0/22	NA	NA	1U - 12U	12	1000000	<0.01	No	
Chlorobenzene	0/26	NA	NA	1U - 670U	670	50	13.40	Yes	2
Chloroethane	1/22	44J - 44J	SWMU303-IS04-00	5UJ - 12U	44	100	0.44	No	
Chloroform	0/22	NA	NA	1U - 12U	12	1	12.00	Yes	2
Chloromethane	0/22	NA	NA	5U - 12U	12	100	0.12	No	
Cyclohexane	0/10	NA	NA	5U - 12U	12	100	0.12	No	
Dibromochloromethane	0/22	NA	NA	2U - 12U	12	100	0.12	No	
Dibromomethane	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
Dichlorodifluoromethane	0/22	NA	NA	5UJ - 12U	12	100	0.12	No	
Ethylbenzene	0/26	NA	NA	1U - 670U	670	50	13.40	Yes	2
Hexachlorobutadiene	0/16	NA	NA	5U - 12U	12	100	0.12	No	
Isopropylbenzene (Cumene)	0/22	NA	NA	2U - 12U	12	100	0.12	No	
Methyl Acetate	0/10	NA	NA	5U - 12U	12	NA	NA	Yes	4
Methyl Cyclohexane	0/10	NA	NA	5U - 12U	12	100	0.12	No	
Methyl Tert-Butyl Ether (MTBE)	0/10	NA	NA	5U - 12U	12	NA	NA	Yes	4
Methylene Chloride	7/22	1J - 18	SWMU318-TW02-00	5U - 23UJ	18	2000	<0.01	No	
Naphthalene	2/16	1.1J - 1.5J	SWMU318-SB26-00	5U - 12U	1.5	NA	NA	Yes	3
n-Butylbenzene	1/16	0.66J - 0.66J	SWMU318-SB26-00	2U - 12U	0.66	NA	NA	Yes	3
n-Propylbenzene	0/16	NA	NA	2U - 12U	12	NA	NA	Yes	4
Styrene (Ethenylbenzene)	0/22	NA	NA	1U - 12U	12	100	0.12	No	
Tetrachloroethene (PCE)	0/22	NA	NA	1U - 12U	12	10	1.20	Yes	2
Toluene	1/26	4J - 4J	SWMU318-SB05-00	1U - 670U	4	50	0.08	No	
Trichloroethene (TCE)	0/22	NA	NA	1U - 12U	12	1	12.00	Yes	2
Trichlorofluoromethane	1/18	2J - 2J	SWMU318-SB09-00	5U - 11UJ	2	100	0.02	No	
Vinyl Chloride	0/22	NA	NA	2U - 12U	12	10	1.20	Yes	2
Xylene, m-	2/16	2J - 4.7J	SWMU318-SB10-00	2U - 12U	4.7	50	0.09	No	
Xylene, o-	0/16	NA	NA	1U - 12U	12	50	0.24	No	
Xylenes, total	0/14	NA	NA	1U - 670U	670	50	13.40	Yes	2

TABLE 7-3
SELECTION OF ECOLOGICAL COPCs IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV ESV	Maximum Hazard Quotient	Soil COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [(1)]				
Semivolatile Organic Compounds (ug/kg)									
1,1'-Biphenyl	0/17	NA	NA	360U - 650U	650	60000	0.01	No	
2,2'-Oxybis[1-chloropropane]	0/21	NA	NA	360U - 18000U	18000	100	180.00	Yes	2
2,4,5-Trichlorophenol	0/21	NA	NA	360U - 18000U	18000	4000	4.50	Yes	2
2,4,6-Trichlorophenol	0/21	NA	NA	360U - 18000U	18000	10000	1.80	Yes	2
2,4-Dichlorophenol	0/21	NA	NA	360U - 18000U	18000	3	6000.00	Yes	2
2,4-Dimethylphenol	0/21	NA	NA	360U - 18000U	18000	500	36.00	Yes	2
2,4-Dinitrophenol	0/21	NA	NA	890U - 86000U	86000	20000	4.30	Yes	2
2,4-Dinitrotoluene	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
2,6-Dinitrotoluene	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
2-Chloronaphthalene	0/21	NA	NA	360U - 18000U	18000	1000	18.00	Yes	2
2-Chlorophenol	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
2-Methylnaphthalene	2/21	120J - 2600J	SWMU318-SS01-00	360U - 650UJ	2600	NA	NA	Yes	3
2-Methylphenol (o-Cresol)	0/21	NA	NA	360U - 18000U	18000	500	36.00	Yes	2
2-Nitroaniline	0/21	NA	NA	730U - 86000U	86000	NA	NA	Yes	4
2-Nitrophenol	0/21	NA	NA	360U - 18000U	18000	7000	2.57	Yes	2
3,3'-Dichlorobenzidine	0/21	NA	NA	360U - 86000U	86000	100	860.00	Yes	2
3-Nitroaniline	0/21	NA	NA	730U - 86000U	86000	NA	NA	Yes	4
4,6-Dinitro-2-methylphenol	0/21	NA	NA	730U - 86000U	86000	NA	NA	Yes	4
4-Bromophenyl-phenylether	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
4-Chloro-3-methylphenol	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
4-Chloroaniline	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
4-Chlorophenyl-phenylether	0/21	NA	NA	360U - 18000U	18000	10	1800.00	Yes	2
4-Methylphenol (p-Cresol)	0/21	NA	NA	360U - 18000U	18000	500	36.00	Yes	2
4-Nitroaniline	0/21	NA	NA	730U - 86000U	86000	NA	NA	Yes	4
4-Nitrophenol	0/21	NA	NA	730U - 86000U	86000	7000	12.29	Yes	2
Acenaphthene	1/21	34J - 34J	SWMU318-SS03-00	360U - 18000U	34	NA	NA	Yes	3
Acenaphthylene	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
Acetophenone	1/17	120J - 120J	SWMU318-SS03-00	360U - 650U	120	NA	NA	Yes	3
Anthracene	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
Atrazine	0/17	NA	NA	360U - 650U	650	0.05	13000.00	Yes	2
Benzaldehyde	1/17	33J - 33J	SWMU318-TW02-00	360U - 650U	33	100	0.33	No	
Benzo(a)anthracene	4/21	52J - 4100J	SWMU318-SS01-00	360U - 470U	4100	NA	NA	Yes	3
Benzo(a)pyrene	4/21	82J - 5000J	SWMU318-SS01-00	360U - 470U	5000	NA	NA	Yes	3
Benzo(b)fluoranthene	6/21	29J - 5900J	SWMU318-SS01-00	360U - 470U	5900	NA	NA	Yes	3
Benzo(g,h,i)perylene	4/21	86J - 5000J	SWMU318-SS01-00	360U - 470U	5000	NA	NA	Yes	3
Benzo(k)fluoranthene	3/21	130J - 6900J	SWMU318-SS01-00	360U - 470U	6900	NA	NA	Yes	3

TABLE 7-3
SELECTION OF ECOLOGICAL COPCs IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV ESV	Maximum Hazard Quotient	Soil COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [(1)]				
Semivolatile Organic Compounds (ug/kg)(Cont.)									
Bis(2-chloroethoxy)methane	0/21	NA	NA	360U - 18000U	18000	100	180.00	Yes	2
Bis(2-chloroethyl)ether	0/21	NA	NA	360U - 18000U	18000	100	180.00	Yes	2
Bis(2-ethylhexyl) Phthalate (BEHP)	14/21	46J - 22000J	SWMU318-SS01-00	360U - 400U	22000	NA	NA	Yes	3
Butyl Benzyl Phthalate	3/21	65J - 2000J	SWMU318-SS01-00	360U - 470U	2000	NA	NA	Yes	3
Caprolactam	1/17	100J - 100J	SWMU318-SS03-00	360U - 650U	100	NA	NA	Yes	3
Carbazole	1/21	44J - 44J	SWMU318-SS03-00	360U - 18000U	44	NA	NA	Yes	3
Chrysene	4/21	69J - 6700J	SWMU318-SS01-00	360U - 470U	6700	NA	NA	Yes	3
Dibenz(a,h)anthracene	3/21	45J - 2300J	SWMU318-SS01-00	360U - 650U	2300	NA	NA	Yes	3
Dibenzofuran	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
Diethyl Phthalate (DEP)	0/21	NA	NA	360U - 18000U	18000	100000	0.18	No	
Dimethyl Phthalate	1/21	48J - 48J	SWMU318-SS03-00	360U - 18000U	48	200000	<0.01	No	
Di-n-butyl Phthalate (DBP)	2/21	31J - 2400J	SWMU318-SS01-00	360U - 650U	2400	200000	0.01	No	
Di-n-octyl Phthalate	4/21	30J - 170J	SWMU318-SS02-00	360U - 18000U	170	NA	NA	Yes	3
Fluoranthene	6/21	21J - 7700J	SWMU318-SS01-00	360U - 470U	7700	NA	NA	Yes	3
Fluorene	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
Hexachlorobenzene	0/21	NA	NA	360U - 18000U	18000	2.5	7200.00	Yes	2
Hexachlorocyclopentadiene	0/21	NA	NA	360U - 86000U	86000	10000	8.60	Yes	2
Hexachloroethane	0/21	NA	NA	360U - 18000U	18000	100	180.00	Yes	2
Indeno(1,2,3-cd)pyrene	6/21	36J - 4700J	SWMU318-SS01-00	360U - 470U	4700	NA	NA	Yes	3
Isophorone	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
Nitrobenzene	0/21	NA	NA	360U - 18000U	18000	40000	0.45	No	
n-Nitrosodi-n-propylamine	0/21	NA	NA	360U - 18000U	18000	NA	NA	Yes	4
n-Nitrosodiphenylamine	0/21	NA	NA	360U - 18000U	18000	20000	0.90	No	
Pentachlorophenol	0/21	NA	NA	730U - 86000U	86000	2	43000.00	Yes	2
Phenanthrene	1/21	110J - 110J	SWMU318-SS03-00	360U - 18000U	110	NA	NA	Yes	3
Phenol	0/21	NA	NA	360U - 18000U	18000	50	360.00	Yes	2
Pyrene	4/21	71J - 7800J	SWMU318-SS01-00	360U - 470U	7800	NA	NA	Yes	3
Metals (mg/kg)									
Arsenic	13/20	0.48J - 14.3	SWMU318-IS02-00	0.26U - 3.4U	14.3	10	1.43	Yes	1
Barium	19/20	9.4J - 396	SWMU318-SS01-00	25U	396	165	2.40	Yes	1
Cadmium	13/20	0.081J - 57.2	SWMU318-SS01-00	0.035U - 0.87U	57.2	1.6	35.75	Yes	1
Chromium	20/20	3.7 - 91.1	SWMU318-SS01-00	NA	91.1	0.4	227.75	Yes	1
Lead	20/20	3.2 - 110	SWMU318-SS01-00	NA	110	50	2.20	Yes	1
Mercury	13/20	0.018J - 0.14	SWMU318-IS02-00	0.02U - 0.07U	0.14	0.1	1.40	Yes	1

TABLE 7-3
SELECTION OF ECOLOGICAL COPCs IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV ESV	Maximum Hazard Quotient	Soil COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [1]				
Metals (mg/kg)(Cont.)									
Selenium	10/20	0.56J - 1.3	SWMU318-SS03-00	0.4U - 1U	1.3	0.81	1.60	Yes	1
Silver	1/20	7.2 - 7.2	SWMU318-SS01-00	0.098U - 1.4U	7.2	2	3.60	Yes	1

Notes:

[1] Maximum concentration. If contaminant was not detected, equals the maximum detection limit.

D = Value is the result of a dilution
U = Chemical was not detected above the method detection limit
J = Estimated Value
NJ = Presumptive evidence for the presence of the material at an estimated value.
COPC = Contaminant of Potential Concern
EPA = Ecological Protection Agency
ESV = Ecological Screening Value
Hazard Quotient = Contaminant Concentration/ ESV
MDL = Maximum detection limit
mg/kg = miligram per kilogram
NA = Not Available
SQL = Sample quantitation limit
ug/kg = microgram per kilogram

Contaminant Categories
1 Contaminant was found in concentrations exceeding its screening value.
2 Contaminant was not found in concentrations exceeding the SQL; however, the MDL exceed its screening value.
3 Contaminant was found in concentrations exceeding its SQL; however, there is no current screening value for the contaminant.
4 Contaminant was not found in concentrations exceeding the SQL and there is no current screening value for the contaminant.

TABLE 7-4
SELECTION OF ECOLOGICAL COPCs IN GROUNDWATER NEAR DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV Freshwater CSV	Maximum Hazard Quotient	North Carolina Fresh Surface Water Quality Standard	Exceeds NCWQS?	Groundwater COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [1]						
Volatile Organic Compounds (ug/L)											
1,1,1,2-Tetrachloroethane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,1,1-Trichloroethane (TCA)	0/7	NA	NA	2U - 10U	10.00	528	0.02	NA	NA	No	
1,1,2,2-Tetrachloroethane	0/7	NA	NA	2U - 10U	10.00	240	0.04	NA	NA	No	
1,1,2-Trichloro-1,2,2-trifluoroethane	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
1,1,2-Trichloroethane	0/7	NA	NA	2U - 10U	10.00	940	0.01	NA	NA	No	
1,1-Dichloroethane	1/7	0.5J - 0.5J	SWMU318-GW04	2U - 10U	0.50	NA	NA	NA	NA	Yes	3
1,1-Dichloroethene	0/7	NA	NA	2U - 10U	10.00	303	0.03	NA	NA	No	
1,1-Dichloropropene	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,2,3-Trichlorobenzene	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,2,4-Trichlorobenzene	0/7	NA	NA	2U - 10U	10.00	44.9	0.22	NA	NA	No	
1,2,4-Trimethylbenzene	3/7	1J - 17	SWMU318-GW14	2U	17.00	NA	NA	NA	NA	Yes	3
1,2-Dibromo-3-chloropropane (DBCP)	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,2-Dibromoethane (EDB)	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,2-Dichlorobenzene (o-)	2/7	0.4J - 0.4J	SWMU318-GW03,SWMU318-GW04	2U - 10U	0.40	15.8	0.03	NA	NA	No	
1,2-Dichloroethane	0/7	NA	NA	2U - 10U	10.00	2000	<0.01	NA	NA	No	
1,2-Dichloroethene (cis)	5/7	0.4J - 86	SWMU318-GW14	2U - 10U	86.00	NA	NA	NA	NA	Yes	3
1,2-Dichloroethene (total)	1/2	2J - 2J	SWMU318-GW01	10U	2.00	1350	<0.01	NA	NA	No	
1,2-Dichloroethene (trans)	0/7	NA	NA	2U - 10U	10.00	1350	<0.01	NA	NA	No	
1,2-Dichloropropane	0/7	NA	NA	2U - 10U	10.00	525	0.02	NA	NA	No	
1,3,5-Trimethylbenzene	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,3-Dichlorobenzene (m-)	2/7	0.7J - 0.7J	SWMU318-GW03,SWMU318-GW04	2U - 10U	0.70	50.2	0.01	NA	NA	No	
1,3-Dichloropropane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
1,3-Dichloropropene (cis)	0/7	NA	NA	2U - 10U	10.00	24.4	0.41	NA	NA	No	
1,3-Dichloropropene (trans)	0/7	NA	NA	2U - 10U	10.00	24.4	0.41	NA	NA	No	
1,4-Dichlorobenzene (p-)	2/7	0.9J - 0.9J	SWMU318-GW03,SWMU318-GW04	2U - 10U	0.90	11.2	0.08	NA	NA	No	
2,2-Dichloropropane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
2-Butanone (MEK)	0/2	NA	NA	10UJ	10.00	NA	NA	NA	NA	Yes	4
2-Chlorotoluene	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
2-Hexanone (MBK)	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
4-Chlorotoluene	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
4-Isopropyltoluene	2/7	0.7J - 6.4J	SWMU318-GW14	2U	6.40	NA	NA	NA	NA	Yes	3
4-Methyl-2-pentanone (MIBK)	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Acetone	0/2	NA	NA	10UJ	10.00	NA	NA	NA	NA	Yes	4
Benzene	2/7	0.9J - 14	SWMU318-GW14	2U - 10U	14.00	53	0.26	NA	NA	No	
Bromobenzene	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Bromochloromethane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Bromodichloromethane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Bromoform	0/7	NA	NA	2U - 10U	10.00	293	0.03	NA	NA	No	
Bromomethane	0/7	NA	NA	2U - 10U	10.00	110	0.09	NA	NA	No	

TABLE 7-4
SELECTION OF ECOLOGICAL COPCs IN GROUNDWATER NEAR DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV Freshwater CSV	Maximum Hazard Quotient	North Carolina Fresh Surface Water Quality Standard	Exceeds NCWQS?	Groundwater COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [1]						
Volatile Organic Compounds (ug/L)(Cont.)											
Butylbenzene, sec-	2/7	2J - 5	SWMU318-GW01	2U - 10U	5.00	NA	NA	NA	NA	Yes	3
Butylbenzene, tert-	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Carbon Disulfide	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Carbon Tetrachloride	0/7	NA	NA	2U - 10U	10.00	352	0.03	0.4	Yes	Yes	5
Chlorobenzene	1/7	2 - 2	SWMU318-GW04	2U - 10U	2.00	195	0.01	NA	NA	No	
Chloroethane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Chloroform	0/7	NA	NA	2U - 10U	10.00	289	0.03	NA	NA	No	
Chloromethane	0/7	NA	NA	2U - 10U	10.00	5500	<0.01	NA	NA	No	
Cyclohexane	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Dibromochloromethane	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Dibromomethane	0/6	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Dichlorodifluoromethane (Freon-12)	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Ethylbenzene	5/7	0.6J - 8.1J	SWMU318-GW14	2U - 10U	8.10	453	0.02	NA	NA	No	
Hexachlorobutadiene	0/7	NA	NA	2U - 10U	10.00	0.93	10.75	NA	NA	Yes	2
Isopropylbenzene (Cumene)	2/7	1J - 2J	SWMU318-GW01	2U - 10U	2.00	NA	NA	NA	NA	Yes	3
Methyl Acetate	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Methyl Cyclohexane	1/2	1J - 1J	SWMU318-GW01	10U	1.00	NA	NA	NA	NA	Yes	3
Methyl Tert-Butyl Ether (MTBE)	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Methylene Chloride	0/7	NA	NA	2U - 10U	10.00	1930	<0.01	NA	NA	No	
Naphthalene	4/7	4.4 - 328	SWMU318-GW14	2U	328.00	62	5.29	NA	NA	Yes	1
n-Butylbenzene	3/7	0.5J - 49	SWMU318-GW14	2U	49.00	NA	NA	NA	NA	Yes	3
n-Propylbenzene	1/7	4 - 4	SWMU318-GW01	2U - 10U	4.00	NA	NA	NA	NA	Yes	3
Styrene (Ethenylbenzene)	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Tetrachloroethene (PCE)	0/7	NA	NA	2U - 10U	10.00	84	0.12	NA	NA	No	
Toluene	4/7	0.7J - 4J	SWMU318-GW14	2U - 10U	4.00	175	0.02	0.36	Yes	Yes	5
Trichloroethene (TCE)	3/7	0.7J - 60	SWMU318-GW14	2U - 10U	60.00	NA	NA	NA	NA	Yes	3
Trichlorofluoromethane	0/2	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Vinyl Chloride	0/7	NA	NA	2U - 10U	10.00	NA	NA	NA	NA	Yes	4
Xylene, m/p-	2/7	2J - 4J	SWMU318-GW14	4U - 10U	4.00	NA	NA	NA	NA	Yes	3
Xylene, o-	1/7	1J - 1J	SWMU318-GW04	2U - 10U	1.00	NA	NA	NA	NA	Yes	3
Xylenes, total	2/7	2J - 4J	SWMU318-GW14	4U - 10U	4.00	NA	NA	NA	NA	Yes	3
Semivolatile Organic Compounds (ug/L)											
1,1'-Biphenyl	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
2,2'-Oxybis[1-chloropropane]	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
2,4,5-Trichlorophenol	0/3	NA	NA	25U	25.00	NA	NA	NA	NA	Yes	4
2,4,6-Trichlorophenol	0/3	NA	NA	10U	10.00	3.2	3.13	NA	NA	Yes	2
2,4-Dichlorophenol	0/3	NA	NA	10U	10.00	36.5	0.27	NA	NA	No	
2,4-Dimethylphenol	0/3	NA	NA	10U	10.00	21.2	0.47	NA	NA	No	
2,4-Dinitrophenol	0/3	NA	NA	25U	25.00	6.2	4.03	NA	NA	Yes	2
2,4-Dinitrotoluene	0/3	NA	NA	10U	10.00	310	0.03	NA	NA	No	
2,6-Dinitrotoluene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
2-Chloronaphthalene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4

TABLE 7-4
SELECTION OF ECOLOGICAL COPCs IN GROUNDWATER NEAR DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV Freshwater CSV	Maximum Hazard Quotient	North Carolina Fresh Surface Water Quality Standard	Exceeds NCWQS?	Groundwater COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [1]						
Semivolatile Organic Compounds (ug/L)(Cont.)											
2-Chlorophenol	0/3	NA	NA	10U	10.00	43.8	0.23	NA	NA	No	
2-Methylnaphthalene	1/3	8J - 8J	SWMU318-GW04	10U	8.00	NA	NA	NA	NA	Yes	3
2-Methylphenol (o-Cresol)	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
2-Nitroaniline	0/3	NA	NA	25U	25.00	NA	NA	NA	NA	Yes	4
2-Nitrophenol	0/3	NA	NA	10U	10.00	3500	<0.01	NA	NA	No	
3,3'-Dichlorobenzidine	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
3-Nitroaniline	0/3	NA	NA	25U	25.00	NA	NA	NA	NA	Yes	4
4,6-Dinitro-2-methylphenol	0/3	NA	NA	25U	25.00	2.3	10.87	NA	NA	Yes	2
4-Bromophenyl-phenylether	0/3	NA	NA	10U	10.00	12.2	0.82	NA	NA	No	
4-Chloro-3-methylphenol	0/3	NA	NA	10U	10.00	0.3	33.33	NA	NA	Yes	2
4-Chloroaniline	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
4-Chlorophenyl-phenylether	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
4-Methylphenol (p-Cresol)	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
4-Nitroaniline	0/3	NA	NA	25UJ	25.00	NA	NA	NA	NA	Yes	4
4-Nitrophenol	0/3	NA	NA	25U	25.00	82.8	0.30	NA	NA	No	
Acenaphthene	0/3	NA	NA	10U	10.00	17	0.59	NA	NA	No	
Acenaphthylene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Acetophenone	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Anthracene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Atrazine	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Benzaldehyde	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Benzo(a)anthracene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Benzo(a)pyrene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Benzo(b)fluoranthene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Benzo(g,h,i)perylene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Benzo(k)fluoranthene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Bis(2-chloroethoxy)methane	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Bis(2-chloroethyl)ether	0/3	NA	NA	10U	10.00	2380	<0.01	NA	NA	No	
Bis(2-ethylhexyl) Phthalate (BEHP)	0/3	NA	NA	10U	10.00	0.299	33.44	NA	NA	Yes	2
Butyl Benzyl Phthalate	0/3	NA	NA	10U	10.00	22	0.45	NA	NA	No	
Caprolactam	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Carbazole	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Chrysene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Dibenz(a,h)anthracene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Dibenzofuran	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Diethyl Phthalate (DEP)	0/3	NA	NA	10U	10.00	521	0.02	NA	NA	No	
Dimethyl Phthalate	0/3	NA	NA	10U	10.00	330	0.03	NA	NA	No	
Di-n-butyl Phthalate (DBP)	0/3	NA	NA	10U	10.00	9.4	1.06	NA	NA	Yes	2
Di-n-octyl Phthalate	0/3	NA	NA	10U	10.00	0.3	33.33	NA	NA	Yes	2
Fluoranthene	0/3	NA	NA	10U	10.00	39.8	0.25	NA	NA	No	
Fluorene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Hexachlorobenzene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4

TABLE 7-4
SELECTION OF ECOLOGICAL COPCs IN GROUNDWATER NEAR DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

Analyte	Contaminant Frequency/Range					EPA Region IV Freshwater CSV	Maximum Hazard Quotient	North Carolina Fresh Surface Water Quality Standard	Exceeds NCWQS?	Groundwater COPC?	Contaminant Category
	Frequency of Detection	Range of Positive Detections	Location of Maximum Concentration	Range of Detection Limits	Concentration Used For Screening [1]						
Semivolatile Organic Compounds (ug/L)(Cont.)											
Hexachlorocyclopentadiene	0/3	NA	NA	10UJ	10.00	0.07	142.86	NA	NA	Yes	2
Hexachloroethane	0/3	NA	NA	10U	10.00	9.8	1.02	NA	NA	Yes	2
Indeno(1,2,3-cd)pyrene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Isophorone	0/3	NA	NA	10U	10.00	1170	<0.01	NA	NA	No	
Nitrobenzene	0/3	NA	NA	10U	10.00	270	0.04	NA	NA	No	
n-Nitrosodi-n-propylamine	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
n-Nitrosodiphenylamine	0/3	NA	NA	10U	10.00	58.5	0.17	NA	NA	No	
Pentachlorophenol	0/3	NA	NA	25U	25.00	12.794	1.95	NA	NA	Yes	2
Phenanthrene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4
Phenol	0/3	NA	NA	10U	10.00	256	0.04	NA	NA	No	
Pyrene	0/3	NA	NA	10U	10.00	NA	NA	NA	NA	Yes	4

Notes:

[1] Maximum concentration. If contaminant was not detected, equals the maximum detection limit.

COPC = Contaminant of Potential Concern
CSV = Chronic Screening Value
EPA = Ecological Protection Agency
Hazard Quotient = Contaminant Concentration/ CSV
J = Estimated Value
MDL = Maximum detection limit
mg/L = miligram per liter
NA = Not Available
NCWQS = North Carolinal Water Quality Standard
SQL = Sample quantitation limit
U = Chemical was not detected above the method detection limit
ug/L = microgram per liter
UJ = Chemical was not detected above the method detection limit; method detection limit is an estimated value.

Contaminant Categories
1 Contaminant was found in concentrations exceeding its screening value.
2 Contaminant was not found in concentrations exceeding the SQL; however, the MDL exceed its screening value.
3 Contaminant was found in concentrations exceeding its SQL; however, there is no current screening value for the contaminant.
4 Contaminant was not found in concentrations exceeding the SQL and there is no current screening value for the contaminant.
5 Contaminant's SQL (if not detected) or maximum concentration exceeds the NCWQS.

TABLE 7-5
MEDIA-SPECIFIC SCREENING VALUES FOR STEP 3A
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

Analyte	Step 3A Soil Screening Values		
	(ug/kg) or (mg/kg) [1]	Reference [2]	Comment
Volatile Organics:			
1,1,1-Trichloroethane	100		value for aliphatic chlorinated hydrocarbons
1,1,1,2-Tetrachloroethane	100		value for aliphatic chlorinated hydrocarbons
1,1,2,2-Tetrachloroethane	100		value for aliphatic chlorinated hydrocarbons
1,1,2-Trichloro-1,2,2-trifluoroethane	100		value for aliphatic chlorinated hydrocarbons
1,1,2-Trichloroethane	100		value for aliphatic chlorinated hydrocarbons
1,1-Dichloroethane	100		value for aliphatic chlorinated hydrocarbons
1,1-Dichloroethene	100		value for aliphatic chlorinated hydrocarbons
1,1-Dichloropropene	NA		
1,2-Dibromoethane	1,230	USEPA, 2003	
1,2-Dibromo-3-chloropropane (DBCP)	100		value for aliphatic chlorinated hydrocarbons
1,2-Dichloroethane	400		
1,2-Dichloroethene (Total)	100		value for aliphatic chlorinated hydrocarbons
1,2-Dichloroethene (cis)	100		value for aliphatic chlorinated hydrocarbons
1,2-Dichloroethene (trans)	100		value for aliphatic chlorinated hydrocarbons
1,2-Dichloropropane	700,000		
1,2,3-Trichlorobenzene	10		value for trichlorobenzene
1,2,3-Trichloropropane	3,360	USEPA, 2003	
1,2,4-Trimethylbenzene	NA		
1,3,5-Trimethylbenzene	NA		
1,3-Dichloropropane	NA		
2,2-Dichloropropane	NA		
2-Butanone	89,600	USEPA, 2003	
2-Chlorotoluene	NA		
2-Hexanone	12,600	USEPA, 2003	
4-Chlorotoluene	NA		
4-Isopropyltoluene	NA		
4-Methyl-2-Pentanone	100,000	USEPA, 1995	LD50 for red-winged blackbird
Acetone	2,500	USEPA, 2003	
Benzene	50		
Bromobenzene	NA		
Bromochloromethane	100		value for aliphatic chlorinated hydrocarbons
Bromodichloromethane	100		value for aliphatic chlorinated hydrocarbons
Bromoform	15,900	USEPA, 2003	
Bromomethane	NA		
Butylbenzene, n-	NA		
Butylbenzene, sec-	NA		
Butylbenzene, tert-	NA		
Carbon Disulfide	94.1	USEPA, 2003	
Carbon Tetrachloride	1,000,000		
Chlorobenzene	50		
Chloroethane	100		value for aliphatic chlorinated hydrocarbons
Chloroform	1		
Chloromethane	100		value for aliphatic chlorinated hydrocarbons
cis-1,3-Dichloropropene	100		value for aliphatic chlorinated hydrocarbons
Cyclohexane	100		
Dibromochloromethane	2,050	USEPA, 2003	
Dibromomethane	100		value for aliphatic chlorinated hydrocarbons
Dichlorodifluoromethane	100		value for aliphatic chlorinated hydrocarbons
Ethylbenzene	50		
Isopropyl ether	NA		
Methyl tert-butyl ether	NA		
Isopropylbenzene (Cumene)	100		value for monocyclic aromatic hydrocarbons
Methyl Acetate	NA		
Methyl Cyclohexane	100		value for aliphatic chlorinated hydrocarbons

TABLE 7-5
MEDIA-SPECIFIC SCREENING VALUES FOR STEP 3A
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

Analyte	Step 3A Soil Screening Values		
	(ug/kg) or (mg/kg) [1]	Reference [2]	Comment
Volatile Organics (Cont.):			
Methylene Chloride	2000		
Propylbenzene, n-	NA		
Styrene	100		
Tetrachloroethene	10		
Toluene	50		
trans-1,3-Dichloropropene	100		value for aliphatic chlorinated hydrocarbons
Trichloroethene (TCE)	1		
Trichlorofluoromethane	100		value for aliphatic chlorinated hydrocarbons
Vinyl Chloride	10		
Xylene (Total)	50		
Xylene, m-	50		value for total xylenes
Xylene, o-	50		value for total xylenes
Semivolatile Organics:			
1,1'-Biphenyl	60,000		
1,2,4-Trichlorobenzene	10		value for trichlorobenzene
1,2-Dichlorobenzene	10		value for dichlorobenzene
1,3-Dichlorobenzene	10		value for dichlorobenzene
1,4-Dichlorobenzene	10		value for dichlorobenzene
2,2'-Oxybis (1-Chloropropane)	100		value for aliphatic chlorinated hydrocarbons
2,4,5-Trichlorophenol	4,000		
2,4,6-Trichlorophenol	10,000		
2,4-Dichlorophenol	3		value for total dichlorophenols
2,4-Dimethylphenol	500		value for cresols
2,4-Dinitrophenol	20,000		
2,4-Dinitrotoluene	1,280	USEPA, 2003	
2,6-Dinitrotoluene	32.8	USEPA, 2003	
2-Chloronaphthalene	1000		value for chloronapthalene
2-Chlorophenol	2.5	NCDENR 2003	value for total monochlorophenols
2-Methylnaphthalene	3,240	USEPA, 2003	
2-Methylphenol	500		value for cresols
2-Nitroaniline	74,100	USEPA, 2003	
2-Nitrophenol	7,000		value for 4-nitrophenol
3,3'-Dichlorobenzidine	100		value for total polycyclic chlorinated hydrocarbons
3-Nitroaniline	NA		
4,6-Dinitro-2-Methylphenol	NA		
4-Bromophenyl-Phenylether	NA		
4-Chloro-3-Methylphenol	2.5	NCDENR 2003	value for total monochlorophenols
4-Chloroaniline	1,100	USEPA, 2003	
4-Chlorophenyl-Phenylether	10		value for chlorophenols
4-Methylphenol	500		value for cresols
4-Nitroaniline	NA		
4-Nitrophenol	7,000		
Acenaphthene	100	USEPA, 1995	Canadian background concentration
Acenaphthylene	100	USEPA, 1995	Canadian background concentration
Acetophenone	300,000	USEPA, 2003	
Anthracene	100	USEPA, 1995	Canadian background concentration
Atrazine	0.05		
Benzaldehyde	100		value for monocyclic aromatic hydrocarbons
Benzo(a)anthracene	100	USEPA, 1995	Canadian background concentration
Benzo(a)pyrene	100	USEPA, 1995	Canadian backgound concentration
Benzo(b)fluoranthene	100	USEPA, 1995	Canadian backgound concentration
Benzo(g,h,i)perylene	100	USEPA, 1995	Canadian backgound concentration
Benzo(k)fluoranthene	100	USEPA, 1995	Canadian backgound concentration
bis(2-Chloroethyl)ether	100		value for aliphatic chlorinated hydrocarbons

TABLE 7-5
MEDIA-SPECIFIC SCREENING VALUES FOR STEP 3A
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

Analyte	Step 3A Soil Screening Values		
	(ug/kg) or (mg/kg) [1]	Reference [2]	Comment
Semivolatile Organics (Cont.):			
bis(2-Chloroethoxy)methane	100		value for aliphatic chlorinated hydrocarbons
bis(2-Ethylhexyl)phthalate	100	NCDENR 2003	value for total phthalates
Butylbenzylphthalate	100	NCDENR 2003	value for total phthalates
Caprolactam	NA		
Carbazole	NA		
Chrysene	100	USEPA, 1995	Canadian background concentration
Dibenzo(a,h)anthracene	100	USEPA, 1995	Canadian background concentration
Dibenzofuran	NA		
Diethylphthalate	100,000		
Dimethylphthalate	200,000		
Di-n-butylphthalate	200,000		
Di-n-octylphthalate	100	NCDENR 2003	value for total phthalates
Fluoranthene	100	USEPA, 1995	Canadian background concentration
Fluorene	100	USEPA, 1995	Canadian background concentration
Hexachlorobenzene	2.5		
Hexachlorobutadiene	100		value for aliphatic chlorinated hydrocarbons
Hexachlorocyclopentadiene	10,000		
Hexachloroethane	100		value for aliphatic chlorinated hydrocarbons
Indeno(1,2,3-cd)pyrene	100	USEPA, 1995	Canadian background concentration
Isophorone	139,000	USEPA, 2003	
Naphthalene	99.4	USEPA, 2003	
Nitrobenzene	40,000		
n-Nitroso-di-n-propylamine	544	USEPA, 2003	
n-Nitrosodiphenylamine	20,000		
Pentachlorophenol	2		
Phenanthrene	100	USEPA, 1995	Canadian background concentration
Phenol	50		
Pyrene	100	USEPA, 1995	Canadian background concentration
PAHs (total)	1000		
Phthalates (total)	100		
Total Inorganics:			
Arsenic	10		18 Eco-SSL terrestrial plants (USEPA 2003)
Barium	165		330 Eco-SSL soil invertebrates (USEPA 2003)
Cadmium	1.6		0.36 Eco-SSL mammalian wildlife (USEPA 2003)
Chromium (Total)	0.4		26 Eco-SSL avian wildlife (USEPA 2003)
Chromium III	0.4		Value for Chromium (total)
Chromium VI	0.4		Value for Chromium (total)
Lead	50		16 Eco-SSL avian wildlife (USEPA 2003)
Mercury	0.1		
Selenium	0.81		
Silver	2		

Notes:
NA = Not Applicable/ Not Established
NCDENR = North Carolina Department of Environment and Natural Resources
USEPA = United States Environmental Protection Agency
[1] Soil screening values are in microgram per kilogram (ug/kg) for organic compounds and in milligram per kilogram (mg/kg) for inorganic constituents.
[2] Non-shaded values are USEPA Region IV screening values obtained from *Guidelines for Performing Screening Level Ecological Risk Assessments within the North Carolina Division of Waste Management* (NCDENR 2003)
Shading indicates a screening value not included in Step 2 evaluation.

TABLE 7-5
MEDIA-SPECIFIC SCREENING VALUES FOR STEP 3A
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

Analyte	Step 3A Surface Water Screening Values - Freshwater		
	(ug/L)	Reference [(1)]	Comment
Volatile Organics:			
1,1,1-Trichloroethane	528		
1,1,1,2-Tetrachloroethane	NA		
1,1,2,2-Tetrachloroethane	240		
1,1,2-Trichloro-1,2,2-trifluoroethane	NA		
1,1,2-Trichloroethane	940		
1,1-Dichloroethane	47	USEPA 2003, USEPA 2004	
1,1-Dichloroethene	303		
1,1-Dichloropropene	NA		
1,2-Dibromoethane	NA		
1,2-Dibromo-3-chloropropane (DBCP)	NA		
1,2-Dichloroethane	2000		
1,2-Dichloroethene (Total)	590	USEPA, 2004	
1,2-Dichloroethene (cis)	NA		
1,2-Dichloroethene (trans)	1350		
1,2-Dichloropropane	525		
1,2,3-Trichlorobenzene	8	USEPA, 2004	
1,2,3-Trichloropropane	NA		
1,2,4-Trimethylbenzene	33	USEPA, 2004	
1,3,5-Trimethylbenzene	71	USEPA, 2004	
1,3-Dichloropropane	NA		
2,2-Dichloropropane	NA		
2-Butanone	2,200	USEPA, 2003	
2-Chlorotoluene	NA		
2-Hexanone	99	USEPA 2003, USEPA 2004	
4-Chlorotoluene	NA		
4-Isopropyltoluene	NA		
4-Methyl-2-Pentanone	170	USEPA 2003, USEPA 2004	
Acetone	1,500	USEPA, 2004	
Benzene	53		
Bromobenzene	NA		
Bromochloromethane	NA		
Bromodichloromethane	4,320	USEPA, 2003	
Bromoform	293		
Bromomethane	110		
Butylbenzene, n-	NA		
Butylbenzene, sec-	NA		
Butylbenzene, tert-	NA		
Carbon Disulfide	0.92	USEPA, 2004	
Carbon Tetrachloride	352		
Chlorobenzene	195		
Chloroethane	NA		
Chloroform	289		
Chloromethane	5500		
cis-1,3-Dichloropropene	24.4		
Cyclohexane	NA		
Dibromochloromethane	9.7	USEPA, 2003	
Dibromomethane	NA		
Dichlorodifluoromethane	NA		
Ethylbenzene	453		
Isopropyl ether	NA		
Methyl tert-butyl ether	11070	USEPA, 2004	
Isopropylbenzene (Cumene)	2.6	USEPA, 2004	
Methyl Acetate	NA		
Methyl Cyclohexane	NA		

TABLE 7-5
MEDIA-SPECIFIC SCREENING VALUES FOR STEP 3A
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

Analyte	Step 3A Surface Water Screening Values - Freshwater		
	(ug/L)	Reference [(1)]	Comment
Volatile Organics (Cont.):			
Methylene Chloride	1930		
Propylbenzene, n-	128	USEPA, 2004	
Styrene	72	USEPA, 2004	
Tetrachloroethene	84		
Toluene	175		
trans-1,3-Dichloropropene	24.4		Cis and Trans isomers
Trichloroethene (TCE)	21	USEPA, 2004	
Trichlorofluoromethane	NA		
Vinyl Chloride	930	USEPA 2003, USEPA 2004	
Xylene (Total)	13	USEPA, 2004	
Xylene, m-	1.8	USEPA, 2004	
Xylene, o-	13	USEPA, 2004	Value for total Xylene
Semivolatile Organics:			
1,1'-Biphenyl	14	USEPA, 2004	
1,2,4-Trichlorobenzene	44.9		
1,2-Dichlorobenzene	15.8		
1,3-Dichlorobenzene	50.2		
1,4-Dichlorobenzene	11.2		
2,2'-Oxybis (1-Chloropropane)	NA		
2,4,5-Trichlorophenol	NA		
2,4,6-Trichlorophenol	3.2		
2,4-Dichlorophenol	36.5		
2,4-Dimethylphenol	21.2		
2,4-Dinitrophenol	6.2		
2,4-Dinitrotoluene	310		
2,6-Dinitrotoluene	81	USEPA 2003, USEPA 2004	
2-Chloronaphthalene	0.396	USEPA, 2003	
2-Chlorophenol	43.8		
2-Methylnaphthalene	4.7	USEPA, 2004	
2-Methylphenol	13	USEPA, 2004	
2-Nitroaniline	NA		
2-Nitrophenol	3500		
3,3'-Dichlorobenzidine	4.5	USEPA 2003, USEPA 2004	
3-Nitroaniline	NA		
4,6-Dinitro-2-Methylphenol	2.3		
4-Bromophenyl-Phenylether	12.2		
4-Chloro-3-Methylphenol	0.3		
4-Chloroaniline	232	USEPA 2003, USEPA 2004	
4-Chlorophenyl-Phenylether	NA		
4-Methylphenol	25	USEPA, 2003	
4-Nitroaniline	NA		
4-Nitrophenol	82.8		
Acenaphthene	17		
Acenaphthylene	4,840	USEPA, 2003	
Acetophenone	NA		
Anthracene	0.012	USEPA, 2004	
Atrazine	1.8	USEPA, 2004	
Benzaldehyde	NA		
Benzo(a)anthracene	0.018	USEPA, 2004	
Benzo(a)pyrene	0.014	USEPA, 2003	
Benzo(b)fluoranthene	9.07	USEPA, 2003	
Benzo(g,h,i)perylene	7.64	USEPA, 2003	
Benzo(k)fluoranthene	NA		
bis(2-Chloroethyl)ether	2380		

TABLE 7-5
MEDIA-SPECIFIC SCREENING VALUES FOR STEP 3A
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJUENE, NORTH CAROLINA

Analyte	Step 3A Surface Water Screening Values - Freshwater		
	(ug/L)	Reference [1]	Comment
Semivolatile Organics (Cont.):			
bis(2-Chloroethoxy)methane	NA		
bis(2-Ethylhexyl)phthalate	0.30		
Butylbenzylphthalate	22		
Caprolactam	NA		
Carbazole	NA		
Chrysene	NA		
Dibenzo(a,h)anthracene	4	USEPA, 2003	
Dibenzofuran	3.7	USEPA, 2004	
Diethylphthalate	521		
Dimethylphthalate	330		
Di-n-butylphthalate	9.4		
Di-n-octylphthalate	0.3		value for bis(2-ethylhexyl)phthalate
Fluoranthene	39.8		
Fluorene	3	USEPA, 2004	
Hexachlorobenzene	0.0003	USEPA 2003, USEPA 2004	
Hexachlorobutadiene	0.93		
Hexachlorocyclopentadiene	0.07		
Hexachloroethane	9.8		
Indeno(1,2,3-cd)pyrene	4.31	USEPA, 2003	
Isophorone	1170		
Naphthalene	62		
Nitrobenzene	270		
n-Nitroso-di-n-propylamine	NA		
n-Nitrosodiphenylamine	58.5		
Pentachlorophenol	12.8		pH = 7.8 S.U.
Phenanthrene	0.4	USEPA, 2004	
Phenol	256		
Pyrene	0.025	USEPA, 2004	
PAHs (total)	17		Value for acenaphthene
Phthalates (total)	NA		
Total Inorganics:			
Arsenic	190		Trivalent (+3) form
Barium	4	USEPA, 2004	
Cadmium	0.16	NCDENR 2003, USEPA 2002	Hardness = 50 mg CaCO3/L (default)[2]
Chromium (Total)	11	NCDENR, 2003	Value for Chromium VI
Chromium III	117.32		Hardness = 50 mg CaCO3/L (default)
Chromium VI	11		
Lead	1.32		Hardness = 50 mg CaCO3/L (default)
Mercury	0.012		
Selenium	5		
Silver	0.012		

Notes:
NA = Not Applicable/ Not Established
NCDENR = North Carolina Department of Environment and Natural Resources
USEPA = United States Environmental Protection Agency
[1] Non-shaded values are USEPA Region IV screening values obtained from *Guidelines for Performing Screening Level Ecological Risk Assessments within the North Carolina Division of Waste Management* (NCDENR 2003)
[2] USEPA Region IV hardness based calculation updated to reflect current ambient water quality criteria (USEPA 2002).
Shading indicates a screening value not included in NCDENR 2003.

TABLE 7-6
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening			Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Soil Screening Value (SSSV)[5]	Mean HQ [5]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Background?				
Volatile Organic Compounds (ug/kg)											
1,1-Dichloropropene	4	1.86	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
1,2,3-Trichloropropane	4	1.16	3360	<0.01	ND	NA	NA	0/10	No	No	Mean HQ < 1.0 Not Detected
1,2,4-Trimethylbenzene	3	2.15	NA	NA	0.65 J	NA	NA	2/16	No	No	See text
1,2-Dibromoethane (EDB)	4	3.02	1230	<0.01	ND	NA	NA	0/22	No	No	Mean HQ < 1.0 Not Detected
1,2-Dichlorobenzene (o-)	1	356.47	10	35.65	9200	NA	NA	1/26	Yes	Yes	Mean HQ > 1.0
1,3,5-Trimethylbenzene	3	2.17	NA	NA	0.47 J	NA	NA	1/16	No	No	See text
1,3-Dichlorobenzene (m-)	2	15.51	10	1.55	ND	NA	NA	0/26	Yes	No	Not Detected
1,3-Dichloropropane	4	1.86	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
1,4-Dichlorobenzene (p-)	1	168.06	10	16.81	4300	NA	NA	2/26	Yes	Yes	Mean HQ > 1.0
2,2-Dichloropropane	4	1.86	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
2-Butanone (MEK)	3	9.30	89600	<0.01	20	NA	NA	6/10	No	No	Mean HQ < 1.0
2-Chlorotoluene	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
2-Hexanone (MBK)	3	6.90	12600	<0.01	3 J	NA	NA	1/10	No	No	Mean HQ < 1.0
4-Chlorotoluene	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
4-Isopropyltoluene	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
4-Methyl-2-pentanone (MIBK)	3	6.70	100000	<0.01	1.00 J	NA	NA	1/10	No	No	Mean HQ < 1.0
Acetone	3	27.40	2500	0.01	78	NA	NA	6/10	No	No	Mean HQ < 1.0
Bromobenzene	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
Bromoform	3	3.45	15900	<0.01	13	NA	NA	1/22	No	No	Mean HQ < 1.0
Bromomethane	4	4.02	NA	NA	ND	NA	NA	0/22	No	No	Not Detected
Butylbenzene, sec-	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
Butylbenzene, tert-	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
Carbon Disulfide	3	4.10	94.1	0.03	3.00 J	NA	NA	2/10	No	No	Mean HQ < 1.0
Chlorobenzene	2	15.34	50	0.31	ND	NA	NA	0/26	No	No	Mean HQ < 1.0 Not Detected
Chloroform	2	2.81	1	2.81	ND	NA	NA	0/22	No	No	Not Detected
Ethylbenzene	2	15.34	50	0.31	ND	NA	NA	0/26	No	No	Mean HQ < 1.0 Not Detected
Methyl Acetate	4	4.25	NA	NA	ND	NA	NA	0/10	No	No	Not Detected
Methyl Tert-Butyl Ether (MTBE)	4	4.25	NA	NA	ND	NA	NA	0/10	No	No	Not Detected
Naphthalene	3	3.10	99.4	0.02	1.50 J	NA	NA	2/16	No	No	Mean HQ < 1.0
n-Butylbenzene	3	2.19	NA	NA	0.66 J	NA	NA	1/16	No	No	See text
n-Propylbenzene	4	2.22	NA	NA	ND	NA	NA	0/16	No	No	Not Detected
Tetrachloroethene (PCE)	2	2.81	10	0.28	ND	NA	NA	0/22	No	No	Mean HQ < 1.0 Not Detected
Trichloroethene (TCE)	2	2.81	1	2.81	ND	NA	NA	0/22	No	No	Not Detected
Vinyl Chloride	2	3.39	10	0.34	ND	NA	NA	0/22	No	No	Mean HQ < 1.0 Not Detected
Xylenes, total	2	29.99	50	0.60	ND	NA	NA	0/14	No	No	Mean HQ < 1.0 Not Detected
Semivolatile Organic Compounds (ug/kg)											
2,2'-Oxybis[1-chloropropane]	2	623.10	100	6.23	ND	NA	NA	0/21	No	No	Not Detected
2,4,5-Trichlorophenol	2	720.71	4000	0.18	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
2,4,6-Trichlorophenol	2	623.10	10000	0.06	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected

TABLE 7-6
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening			Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Soil Screening Value (SSSV)[5]	Mean HQ [5]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Background?				
Semivolatile Organic Compounds (ug/kg)(Cont.)											
2,4-Dichlorophenol	2	623.10	3	207.70	ND	NA	NA	0/21	No	No	Not Detected
2,4-Dimethylphenol	2	623.10	500	1.25	ND	NA	NA	0/21	No	No	Not Detected
2,4-Dinitrophenol	2	2869.52	20000	0.14	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
2,4-Dinitrotoluene	4	623.10	1280	0.49	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
2,6-Dinitrotoluene	4	623.10	32.8	19.00	ND	NA	NA	0/21	No	No	Not Detected
2-Chloronaphthalene	2	623.10	1000	0.62	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
2-Chlorophenol	4	623.10	2.5	249.24	ND	NA	NA	0/21	No	No	Not Detected
2-Methylnaphthalene	3	313.10	3240	0.10	2600 J	NA	NA	2/21	No	No	Mean HQ < 1.0
2-Methylphenol (o-Cresol)	2	623.10	500	1.25	ND	NA	NA	0/21	No	No	Not Detected
2-Nitroaniline	4	2558.81	74100	0.03	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
2-Nitrophenol	2	623.10	7000	0.09	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
3,3'-Dichlorobenzidine	2	2461.19	100	24.61	ND	NA	NA	0/21	No	No	Not Detected
3-Nitroaniline	4	2558.81	NA	NA	ND	NA	NA	0/21	No	No	Not Detected
4,6-Dinitro-2-methylphenol	4	2558.81	NA	NA	ND	NA	NA	0/21	No	No	Not Detected
4-Bromophenyl-phenylether	4	623.10	NA	NA	ND	NA	NA	0/21	Yes	No	Not Detected
4-Chloro-3-methylphenol	4	623.10	2.5	249.24	ND	NA	NA	0/21	No	No	Not Detected
4-Chloroaniline	4	623.10	1100	0.57	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
4-Chlorophenyl-phenylether	2	623.10	10	62.31	ND	NA	NA	0/21	Yes	No	Not Detected
4-Methylphenol (p-Cresol)	2	623.10	500	1.25	ND	NA	NA	0/21	No	No	Not Detected
4-Nitroaniline	4	2558.81	NA	NA	ND	NA	NA	0/21	No	No	Not Detected
4-Nitrophenol	2	2558.81	7000	0.37	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
Acenaphthene	3	613.76	100	0.34	34 J	NA	NA	1/21	Yes	No	Mean HQ < 1.0
Acenaphthylene	4	623.10	100	6.23	ND	NA	NA	0/21	Yes	No	Not Detected
Acetophenone	3	195.88	300000	<0.01	120 J	NA	NA	1/17	No	No	Mean HQ < 1.0
Anthracene	4	623.10	100	6.23	ND	NA	NA	0/21	Yes	No	Not Detected
Atrazine	2	202.35	0.05	4047.06	ND	NA	NA	0/17	No	No	Not Detected
Benzo(a)anthracene	3	369.19	100	3.69	4100 J	NA	NA	4/21	Yes	No	See text
Benzo(a)pyrene	3	414.62	100	4.15	5000 J	NA	NA	4/21	Yes	No	See text
Benzo(b)fluoranthene	3	448.48	100	4.48	5900 J	NA	NA	6/21	Yes	No	See text
Benzo(g,h,i)perylene	3	410.95	100	4.11	5000 J	NA	NA	4/21	Yes	No	See text
Benzo(k)fluoranthene	3	517.14	100	5.17	6900.00 J	NA	NA	3/21	Yes	No	See text
Bis(2-chloroethoxy)methane	2	623.10	100	6.23	ND	NA	NA	0/21	No	No	Not Detected
Bis(2-chloroethyl)ether	2	623.10	100	6.23	ND	NA	NA	0/21	No	No	Not Detected
Bis(2-ethylhexyl) Phthalate (BEHP)	3	1476.52	100	14.77	22000 J	NA	NA	14/21	No	Yes	Mean HQ > 1.0
Butyl Benzyl Phthalate	3	270.52	100	2.71	2000 J	NA	NA	3/21	No	Yes	Mean HQ > 1.0
Caprolactam	3	194.71	NA	NA	100 J	NA	NA	1/17	No	No	See text
Carbazole	3	614.24	NA	NA	44 J	NA	NA	1/21	No	No	See text
Chrysene	3	499.19	100	4.99	6700 J	NA	NA	4/21	Yes	No	See text
Dibenz(a,h)anthracene	3	288.71	100	2.89	2300 J	NA	NA	3/21	Yes	No	See text
Dibenzofuran	4	623.10	NA	NA	ND	NA	NA	0/21	No	No	Not Detected

TABLE 7-6
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening			Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Soil Screening Value (SSSV)[2]	Mean HQ [3]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Background?				
Semivolatile Organic Compounds (ug/kg)(Cont.)											
Di-n-octyl Phthalate	3	593.19	100	1.70	170 J	NA	NA	4/21	No	No	See text
Fluoranthene	3	538.90	100	5.39	7700 J	NA	NA	6/21	Yes	No	See text
Fluorene	4	623.10	100	6.23	ND	NA	NA	0/21	Yes	No	Not Detected
Hexachlorobenzene	2	623.10	2.5	249.24	ND	NA	NA	0/21	Yes	No	Not Detected
Hexachlorocyclopentadiene	2	2361.43	10000	0.24	ND	NA	NA	0/21	Yes	No	Mean HQ < 1.0 Not Detected
Hexachloroethane	2	623.10	100	6.23	ND	NA	NA	0/21	Yes	No	Not Detected
Indeno(1,2,3-cd)pyrene	3	391.38	100	3.91	4700 J	NA	NA	6/21	Yes	No	See text
Isophorone	4	623.10	139000	<0.01	ND	NA	NA	0/21	No	No	Mean HQ < 1.0 Not Detected
n-Nitrosodi-n-propylamine	4	623.10	544	1.15	ND	NA	NA	0/21	No	No	Not Detected
Pentachlorophenol	2	2558.81	2	1279.40	ND	NA	NA	0/21	Yes	No	Not Detected
Phenanthrene	3	617.38	100	1.10	110 J	NA	NA	1/21	Yes	No	See text
Phenol	2	623.10	50	12.46	ND	NA	NA	0/21	No	No	Not Detected
Pyrene	3	555.05	100	5.55	7800 J	NA	NA	4/21	Yes	No	See text
Metals (mg/kg)											
Arsenic	1	2.29	10	0.23	14	1.14	No	13/20	Yes	No	Mean HQ < 1.0
Barium	1	43.72	165	0.26	396	21.75	No	19/20	No	No	Mean HQ < 1.0
Cadmium	1	3.67	1.6	2.29	57	0.03	No	13/20	Yes	Yes	Mean HQ > 1.0
Chromium	1	18.46	0.4	46.15	91.10	12.68	No	20/20	Yes	Yes	Mean HQ > 1.0
Lead	1	28.07	50	0.56	110.0	16.73	No	20/20	Yes	No	Mean HQ < 1.0
Mercury	1	0.04	0.1	0.42	0.1	0.06	No	13/20	Yes	No	Mean HQ < 1.0
Selenium	1	0.56	0.81	0.69	1.3	0.81	No	10/20	Yes	No	Mean HQ < 1.0
Silver	1	0.51	2	0.25	7.2	0.15	No	1/20	Yes	No	Mean HQ < 1.0

Notes:
U = Chemical was not detected above the method detection limit
J = Estimated Value
HQ = Hazard Quotient Hazard Quotient = Contaminant Concentration/ ESV
mg/kg = miligram per kilogram
ug/kg = microgram per kilogram
NA = Not Applicable

[1] See Table 7-3 and text for definitions of contaminant categories.
[2] References for all screening values are provided on Table 7-5.
[3] The mean HQ represents the mean (half non-detect) concentration divided by the screening value. In cases where the mean exceeds the maximum the maximum value is used.
[4] The background concentration presented is for AOC 2 surface soils (Final Area of Concern Background Study [Baker 2001]).
[5] Compound is identified as an "important bioaccumulative chemical" in the USEPA document *Bioaccumulation Testing and Interpretation for the Purpose of Sediment Quality Assessment, Status and Needs* (EPA-823-R-00-001, February 2000).

TABLE 7-7
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN GROUNDWATER NEAR THE DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening					Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Water Screening Value (SWSV)[2]	North Carolina Fresh Surface Water Quality Standard	Refined SWSV Mean HQ [3]	NCWQS Mean HQ [3]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Mean Background?				
Volatiles (ug/L)													
1,1,1,2-Tetrachloroethane	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
1,1,2-Trichloro-1,2,2-trifluoroethane	4	5	NA	NA	NA	NA	ND	NA	NA	0/2	No	No	Not Detected
1,1-Dichloroethane	3	2.6429	47	NA	0.01	NA	0.50 J	NA	NA	1/7	No	No	Mean HQ < 1.0
1,1-Dichloropropene	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
1,2,3-Trichlorobenzene	4	1.5714	8	NA	0.20	NA	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
1,2,4-Trimethylbenzene	3	3.4286	33	NA	0.10	NA	17.00	NA	NA	3/7	No	No	Mean HQ < 1.0
1,2-Dibromo-3-chloropropane (DBCP)	4	2.7143	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
1,2-Dibromoethane (EDB)	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
1,2-Dichloroethene (cis)	3	14.1143	NA	NA	NA	NA	86.00	NA	NA	5/7	No	No	See text
1,3,5-Trimethylbenzene	4	1.5714	71	NA	0.02	NA	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
1,3-Dichloropropane	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
2,2-Dichloropropane	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
2-Butanone (MEK)	4	5	2200	NA	<0.01	NA	ND	NA	NA	0/2	No	No	Mean HQ < 1.0 Not Detected
2-Chlorotoluene	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
2-Hexanone (MBK)	4	5	99	NA	0.05	NA	ND	NA	NA	0/2	No	No	Mean HQ < 1.0 Not Detected
4-Chlorotoluene	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
4-Isopropyltoluene	3	1.7286	NA	NA	NA	NA	6.40 J	NA	NA	2/7	No	No	See text
4-Methyl-2-pentanone (MIBK)	4	5	170	NA	0.03	NA	ND	NA	NA	0/2	No	No	Mean HQ < 1.0 Not Detected
Acetone	4	5	1500	NA	<0.01	NA	ND	NA	NA	0/2	No	No	Mean HQ < 1.0 Not Detected
Bromobenzene	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
Bromochloromethane	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
Bromodichloromethane	4	2.7143	4320	NA	<0.01	NA	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
Butylbenzene, sec-	3	2.2857	NA	NA	NA	NA	5.00	NA	NA	2/7	No	No	See text
Butylbenzene, tert-	4	1.5714	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
Carbon Disulfide	4	5	0.92	NA	5.43	NA	ND	NA	NA	0/2	No	No	Not Detected
Carbon Tetrachloride	5	2.7143	352	0.4	<0.01	6.79	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
Chloroethane	4	2.7143	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
Cyclohexane	4	5	NA	NA	NA	NA	ND	NA	NA	0/2	No	No	Not Detected
Dibromochloromethane	4	2.7143	9.7	NA	0.28	NA	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
Dibromomethane	4	1.6667	NA	NA	NA	NA	ND	NA	NA	0/6	No	No	Not Detected
Dichlorodifluoromethane (Freon-12)	4	2.7143	NA	NA	NA	NA	ND	NA	NA	0/7	No	No	Not Detected
Hexachlorobutadiene	2	1.5714	0.93	NA	1.69	NA	ND	NA	NA	0/7	Yes	No	Not Detected
Isopropylbenzene (Cumene)	3	2.2857	2.6	NA	0.77	NA	2.00 J	NA	NA	2/7	No	No	Mean HQ < 1.0

TABLE 7-7
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN GROUNDWATER NEAR THE DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening					Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Water Screening Value (SWSV)[2]	North Carolina Fresh Surface Water Quality Standard	Refined SWSV Mean HQ [3]	NCWQS Mean HQ [3]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Mean Background?				
Volatiles (ug/L)(Cont.)													
Methyl Acetate	4	5	NA	NA	NA	NA	ND	NA	NA	0/2	No	No	Not Detected
Methyl Cyclohexane	3	3	NA	NA	NA	NA	1.00 J	NA	NA	1/2	No	No	See text
Methyl Tert-Butyl Ether (MTBE)	4	5	11070	NA	<0.01	NA	ND	NA	NA	0/2	No	No	Mean HQ < 1.0 Not Detected
Naphthalene	1	51.2	62	NA	0.83	NA	328.00	NA	NA	4/7	No	No	Mean HQ < 1.0
n-Butylbenzene	3	12.2143	NA	NA	NA	NA	49.00	NA	NA	3/7	No	No	See text
n-Propylbenzene	3	2	128	NA	0.02	NA	4.00	NA	NA	1/7	No	No	Mean HQ < 1.0
Styrene (Ethenylbenzene)	4	2.7143	72	NA	0.04	NA	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
Toluene	5	2.4714	175	0.36	0.01	6.87	4.00 J	NA	NA	4/7	No	No	Mean HQ < 1.0
Trichloroethene (TCE)	3	10.5286	21	NA	0.50	NA	60.00	NA	NA	3/7	No	No	Mean HQ < 1.0
Trichlorofluoromethane	4	5	NA	NA	NA	NA	ND	NA	NA	0/2	No	No	Not Detected
Vinyl Chloride	4	2.7143	930	NA	<0.01	NA	ND	NA	NA	0/7	No	No	Mean HQ < 1.0 Not Detected
Xylene, m/p-	3	3.1429	13	NA	0.24	NA	4.00 J	NA	NA	2/7	No	No	Mean HQ < 1.0
Xylene, o-	3	2.7143	13	NA	0.08	NA	1.00 J	NA	NA	1/7	No	No	Mean HQ < 1.0
Xylenes, total	3	3.1429	13	NA	0.24	NA	4.00 J	NA	NA	2/7	No	No	Mean HQ < 1.0
Semivolatile Organic Compounds (ug/L)													
1,1'-Biphenyl	4	5	14	NA	0.36	NA	ND	NA	NA	0/3	No	No	Mean HQ < 1.0 Not Detected
2,2'-Oxybis[1-chloropropane]	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
2,4,5-Trichlorophenol	4	12.5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
2,4,6-Trichlorophenol	2	5	3.2	NA	1.56	NA	ND	NA	NA	0/3	No	No	Not Detected
2,4-Dinitrophenol	2	12.5	6.2	NA	2.02	NA	ND	NA	NA	0/3	No	No	Not Detected
2,6-Dinitrotoluene	4	5	81	NA	0.06	NA	ND	NA	NA	0/3	No	No	Mean HQ < 1.0 Not Detected
2-Chloronaphthalene	4	5	0.396	NA	12.63	NA	ND	NA	NA	0/3	No	No	Not Detected
2-Methylnaphthalene	3	6	4.7	NA	1.28	NA	8.00 J	NA	NA	1/3	No	Yes	Mean HQ > 1.0
2-Methylphenol (o-Cresol)	4	5	13	NA	0.38	NA	ND	NA	NA	0/3	No	No	Mean HQ < 1.0 Not Detected
2-Nitroaniline	4	12.5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
3,3'-Dichlorobenzidine	4	5	4.5	NA	1.11	NA	ND	NA	NA	0/3	No	No	Not Detected
3-Nitroaniline	4	12.5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
4,6-Dinitro-2-methylphenol	2	12.5	2.3	NA	5.43	NA	ND	NA	NA	0/3	No	No	Not Detected
4-Chloro-3-methylphenol	2	5	0.3	NA	16.67	NA	ND	NA	NA	0/3	No	No	Not Detected
4-Chloroaniline	4	5	232	NA	0.02	NA	ND	NA	NA	0/3	No	No	Mean HQ < 1.0 Not Detected
4-Chlorophenyl-phenylether	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	Yes	No	Not Detected
4-Methylphenol (p-Cresol)	4	5	25	NA	0.20	NA	ND	NA	NA	0/3	No	No	Mean HQ < 1.0 Not Detected
4-Nitroaniline	4	12.5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Acenaphthylene	4	5	4840	NA	<0.01	NA	ND	NA	NA	0/3	Yes	No	Mean HQ < 1.0 Not Detected

TABLE 7-7
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN GROUNDWATER NEAR THE DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening					Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Water Screening Value (SWSV)[2]	North Carolina Fresh Surface Water Quality Standard	Refined SWSV Mean HQ [3]	NCWQS Mean HQ [3]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Mean Background?				
Semivolatile Organic Compounds (ug/L)(Cont.)													
Acetophenone	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Anthracene	4	5	0.012	NA	416.67	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Atrazine	4	5	1.8	NA	2.78	NA	ND	NA	NA	0/3	No	No	Not Detected
Benzaldehyde	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Benzo(a)anthracene	4	5	0.018	NA	277.78	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Benzo(a)pyrene	4	5	0.014	NA	357.14	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Benzo(b)fluoranthene	4	5	9.07	NA	0.55	NA	ND	NA	NA	0/3	Yes	No	Mean HQ < 1.0 Not Detected
Benzo(g,h,i)perylene	4	5	7.64	NA	0.65	NA	ND	NA	NA	0/3	Yes	No	Mean HQ < 1.0 Not Detected
Benzo(k)fluoranthene	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Bis(2-chloroethoxy)methane	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Bis(2-ethylhexyl) Phthalate (BEHP)	2	5	0.299	NA	16.72	NA	ND	NA	NA	0/3	No	No	Not Detected
Caprolactam	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Carbazole	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Chrysene	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Dibenz(a,h)anthracene	4	5	4	NA	1.25	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Dibenzofuran	4	5	3.7	NA	1.35	NA	ND	NA	NA	0/3	No	No	Not Detected
Di-n-butyl Phthalate (DBP)	2	5	9.4	NA	0.53	NA	ND	NA	NA	0/3	No	No	Mean HQ < 1.0 Not Detected
Di-n-octyl Phthalate	2	5	0.3	NA	16.67	NA	ND	NA	NA	0/3	No	No	Not Detected
Fluorene	4	5	3	NA	1.67	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Hexachlorobenzene	4	5	0.0003	NA	16666.67	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Hexachlorocyclopentadiene	2	5	0.07	NA	71.43	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Hexachloroethane	2	5	9.8	NA	0.51	NA	ND	NA	NA	0/3	Yes	No	Mean HQ < 1.0 Not Detected
Indeno(1,2,3-cd)pyrene	4	5	4.31	NA	1.16	NA	ND	NA	NA	0/3	Yes	No	Not Detected
n-Nitrosodi-n-propylamine	4	5	NA	NA	NA	NA	ND	NA	NA	0/3	No	No	Not Detected
Pentachlorophenol	2	12.5	12.79430308	NA	0.98	NA	ND	NA	NA	0/3	Yes	No	Mean HQ < 1.0 Not Detected
Phenanthrene	4	5	0.4	NA	12.50	NA	ND	NA	NA	0/3	Yes	No	Not Detected
Pyrene	4	5	0.025	NA	200.00	NA	ND	NA	NA	0/3	Yes	No	Not Detected

Notes:

U = Chemical was not detected above the method detection limit
J = Estimated Value
NJ = Presumptive evidence for the presence of the material at an estimated value.
COPC = Ecological Contaminant of Potential Concern
HQ = Hazard Quotient
ug/L = microgram per liter
NA = Not Applicable
NCWQS = North Carolina Water Quality Standard
ND = Not Detected
EPA = Environmental Protection Agency
ESV = Ecological Screening Value
MDL = Maximum detection limit

TABLE 7-7
REFINED ASSESSMENT OF ECOLOGICAL CONTAMINANTS OF POTENTIAL CONCERN IN GROUNDWATER NEAR THE DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0141)
MCB CAMP LEJEUNE, NORTH CAROLINA

Ecological Contaminant of Potential Concern based on Steps 1 and 2	Contaminant Category [1]	Refined Risk Screening					Background Comparison			Frequency of Detection	Important Bioaccumulative Chemical? [5]	Further Evaluation Recommended based on Step 3A?	Comments
		Arithmetic Mean (Half Non-Detects)	Refined Surface Water Screening Value (SWSV)[2]	North Carolina Fresh Surface Water Quality Standard	Refined SWSV Mean HQ [3]	NCWQS Mean HQ [3]	Maximum Site Concentration	2 X Mean Background [4] Concentration	Maximum Site Concentration Less than 2X Mean Background?				

Notes (Continued):

[1] See Table 7-4 and text for definitions of contaminant categories.

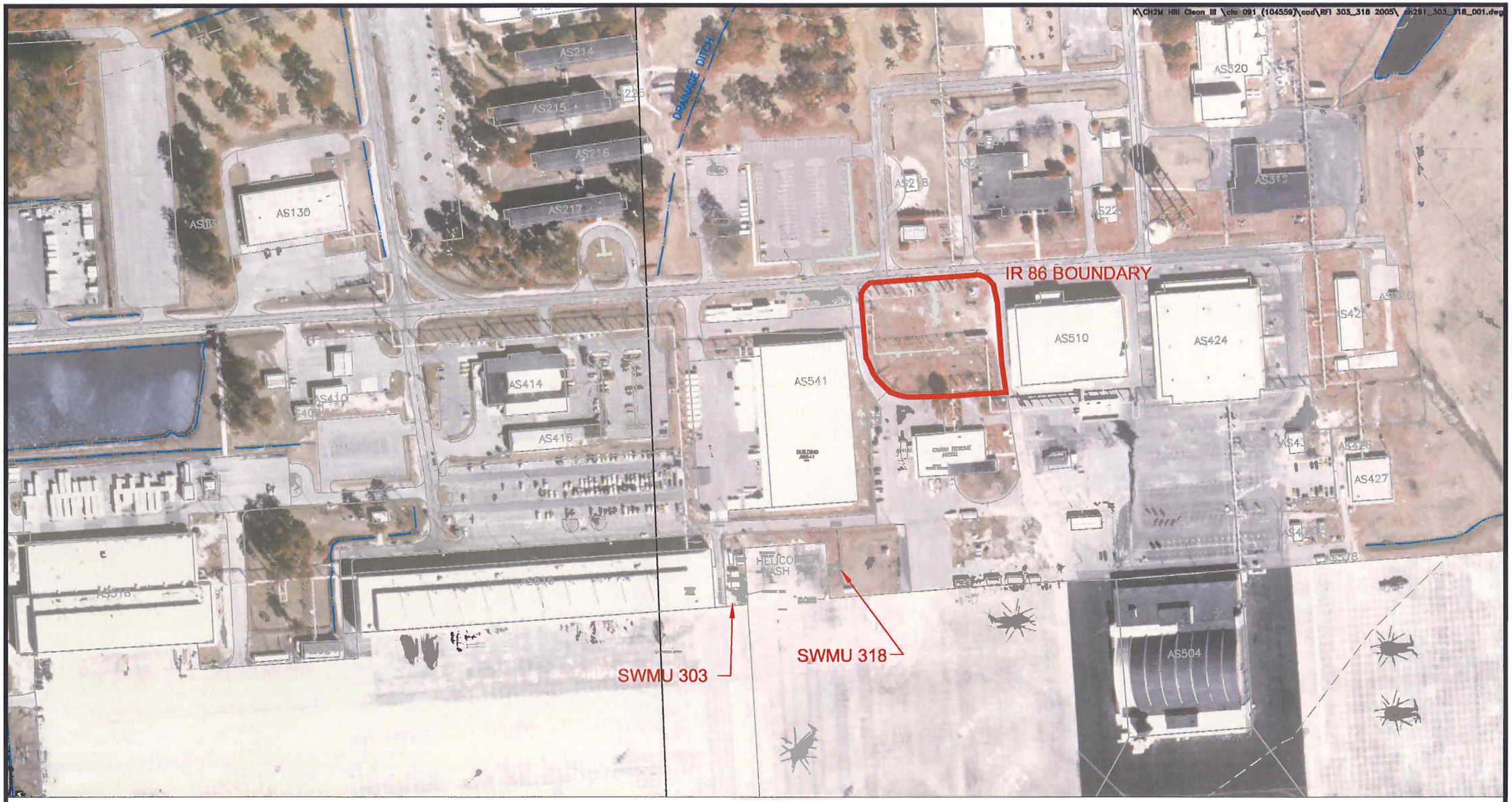
[2] References for alternative screening values are provided on Table 7-5.

[3] The mean HQ represents the mean (half non-detect) concentration divided by the screening value. In cases where the mean exceeds the maximum the maximum value is used.

[4] The background concentration presented is for shallow portions of the surficial aquifer (Base Background Groundwater Investigation [Baker 2002]).

[5] Compound is identified as an "important bioaccumulative chemical" in the USEPA document *Bioaccumulation Testing and Interpretation for the Purpose of Sediment Quality Assessment, Status and Needs* (EPA-823-R-00-001, February 2000).

FIGURES



LEGEND

FIGURE 7-1
AERIAL VIEW OF 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

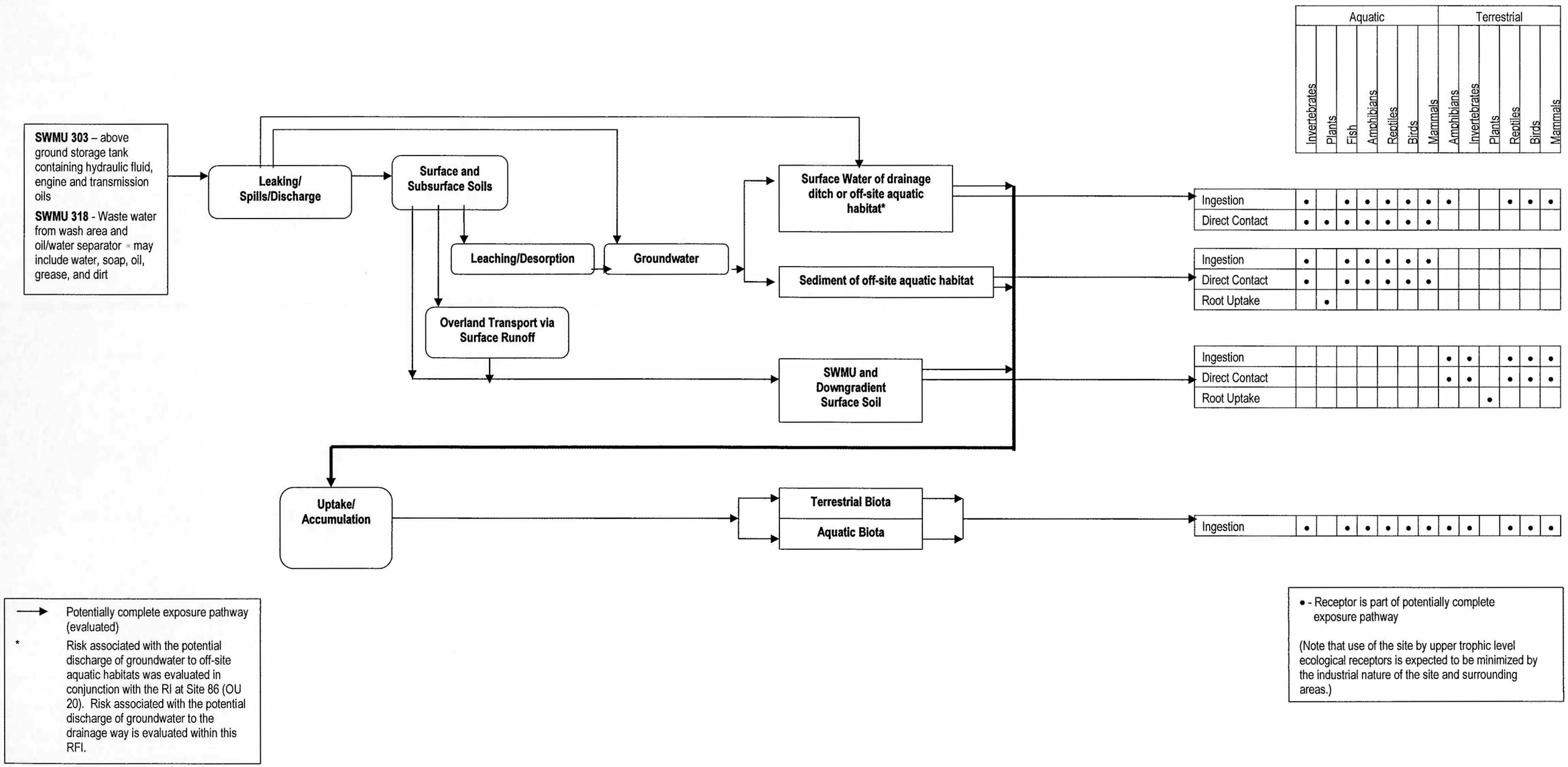


FIGURE 7-2. ECOLOGICAL CONCEPTUAL MODEL
SWMU 303/318, MCB CAMP LEJEUNE

k\ch2m hill clean ii\ cto091 (104559)\cad\ rfi 303_318 2005\ ch291_303_318_003.dwg

AS414

AS416

AS541

AS515

BUILDING AS541

CRASH RESCUE AS502

AS4132

SWMU318-SB28

SWMU318-SB26

SWMU318-SB27

SWMU318-SB25

SWMU318-SB18

318-SB11

318-SB13

318-SB05

318-SB06

SWMU318-SS02

SWMU318-SB23

318-SB10

SWMU318-SB24

SWMU318-SB17

SWMU318-TW01

SWMU318-SB22

318-SB07

SWMU318-IS03

SWMU318-SB20

318-SB09

SWMU318-TW02

SWMU318-SS01

SWMU318-SB14

318-SB02

SWMU318-IS01

SWMU318-IS02

SWMU318-SB21

SWMU318-SB16

SWMU318-TW03

SWMU318-SB15

SWMU303-IS01

SWMU303-TW01

SWMU303-IS02

SWMU303-SB01

SWMU303-IS03

318-SB03

SWMU318-SB19

SWMU318-SS03

318-SB12

318-SB08

318-SB04

SWMU303-SB02

SWMU303-TW03

SWMU303-IS04

SWMU303-TW02

100 0 50 100

1 inch = 100 ft.

Baker

NOTE:
GRAY SAMPLES WERE NOT EVALUATED IN RISK ASSESSMENT

LEGEND

- ◉ – PHASE I RFI SOIL BORING LOCATION
- ◉ – PHASE III RFI SOIL BORING LOCATION
- ⓣ – TEMPORARY WELL
- ◉ – PHASE I CSI SOIL BORING
- ▲ – PHASE I CSI SURFACE SOIL

FIGURE 7-3
SURFACE SOIL SAMPLE LOCATION MAP
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0041
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

k:\ch2mhill clean ii\CTO 091 (104559)\cad\RFI 303_318_2005\ CH291_303_318_004.dwg

DRAINAGE DITCH

AS214 AS215 AS225 AS216 AS217 AS131 AS130 AS132 AS218 AS224 AS221 AS222 AS320 AS312 AS425 AS426 AS510 AS424 AS414 AS410 AS402 AS541 AS516 AS430 AS428 AS427 AS518 AS524 AS515 AS672 AS491 AS504

318-SB27A IR86-GW17IW 86-GW08IW 86-GW29IW 86-GW16IW IR86-GW02IW IR86-GW20IW 86-GW10IW 86-GW15IW 86-GW23IW 86-GW24IW IR86-MW25IW 318-GW16 318-GW18 318-GW26 318-GW13 318-GW10 318-GW27 318-GW25 318-GW24 318-GW23 318-GW30 318-GW19 IR86-MW27 IR86-GW22IW 318-GW21 318-GW17 318-GW20 IR86-GW30IW IR86-GW21IW 318-GW29 318-GW12 318-GW03 318-GW07 318-GW28 318-GW01 318-GW14 318-GW04 318-GW22 318-GW11 318-GW08 318-GW05 318-GW09 318-GW06 318-GW15 318-GW02

SWMU318-GW39 SWMU318-MW05 SWMU318-GW38 SWMU318-GW33 SWMU318-GW50 SWMU318-MW04 SWMU318-GW49 SWMU318-GW34 SWMU318-GW31 SWMU318-MW07 SWMU318-MW03 SWMU318-MW02 SWMU318-GW44 SWMU318-GW45 SWMU318-GW46 SWMU318-MW04DW SWMU318-GW43 SWMU318-GW41 SWMU318-GW37 SWMU318-GW35 SWMU318-GW51 SWMU318-GW32 SWMU318-GW36 SWMU318-MW01 SWMU318-MW06DW SWMU318-GW40 SWMU318-MW06 SWMU318-GW42 SWMU318-MW05DW SWMU318-MW08 SWMU318-GW48

HELICOPTER PAD

200 0 100 200
1 inch = 200 ft.

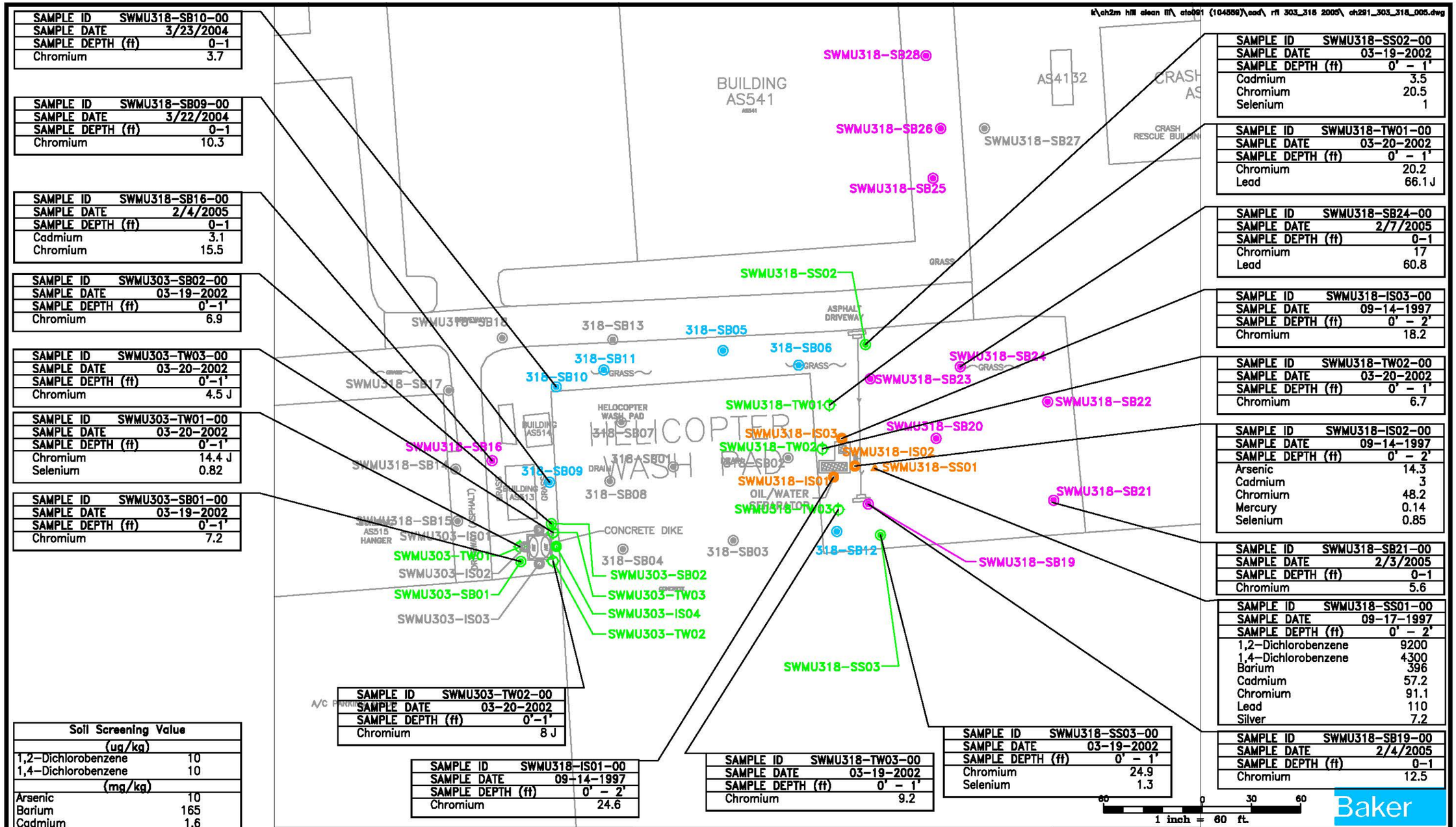
Baker

NOTE:
GRAY SAMPLES WERE NOT INCLUDED IN RISK ASSESSMENT

LEGEND

- PHASE I RFI GROUNDWATER GRAB LOCATION
- PHASE II RFI GROUNDWATER GRAB LOCATION
- PHASE III RFI GROUNDWATER GRAB LOCATION
- MONITORING WELL LOCATION

FIGURE 7-4
GROUNDWATER GRAB AND MONITORING WELL LOCATION MAP
SWMU 303/318
RCRA FACILITY INVESTIGATION
CTO – 0091
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



SAMPLE ID	SWMU318-SB10-00
SAMPLE DATE	3/23/2004
SAMPLE DEPTH (ft)	0-1
Chromium	3.7

SAMPLE ID	SWMU318-SB09-00
SAMPLE DATE	3/22/2004
SAMPLE DEPTH (ft)	0-1
Chromium	10.3

SAMPLE ID	SWMU318-SB16-00
SAMPLE DATE	2/4/2005
SAMPLE DEPTH (ft)	0-1
Cadmium	3.1
Chromium	15.5

SAMPLE ID	SWMU303-SB02-00
SAMPLE DATE	03-19-2002
SAMPLE DEPTH (ft)	0'-1'
Chromium	6.9

SAMPLE ID	SWMU303-TW03-00
SAMPLE DATE	03-20-2002
SAMPLE DEPTH (ft)	0'-1'
Chromium	4.5 J

SAMPLE ID	SWMU303-TW01-00
SAMPLE DATE	03-20-2002
SAMPLE DEPTH (ft)	0'-1'
Chromium	14.4 J
Selenium	0.82

SAMPLE ID	SWMU303-SB01-00
SAMPLE DATE	03-19-2002
SAMPLE DEPTH (ft)	0'-1'
Chromium	7.2

SAMPLE ID	SWMU303-TW02-00
SAMPLE DATE	03-20-2002
SAMPLE DEPTH (ft)	0'-1'
Chromium	8 J

SAMPLE ID	SWMU318-IS01-00
SAMPLE DATE	09-14-1997
SAMPLE DEPTH (ft)	0' - 2'
Chromium	24.6

SAMPLE ID	SWMU318-TW03-00
SAMPLE DATE	03-19-2002
SAMPLE DEPTH (ft)	0' - 1'
Chromium	9.2

SAMPLE ID	SWMU318-SS03-00
SAMPLE DATE	03-19-2002
SAMPLE DEPTH (ft)	0' - 1'
Chromium	24.9
Selenium	1.3

SAMPLE ID	SWMU318-SS02-00
SAMPLE DATE	03-19-2002
SAMPLE DEPTH (ft)	0' - 1'
Cadmium	3.5
Chromium	20.5
Selenium	1

SAMPLE ID	SWMU318-TW01-00
SAMPLE DATE	03-20-2002
SAMPLE DEPTH (ft)	0' - 1'
Chromium	20.2
Lead	66.1 J

SAMPLE ID	SWMU318-SB24-00
SAMPLE DATE	2/7/2005
SAMPLE DEPTH (ft)	0-1
Chromium	17
Lead	60.8

SAMPLE ID	SWMU318-IS03-00
SAMPLE DATE	09-14-1997
SAMPLE DEPTH (ft)	0' - 2'
Chromium	18.2

SAMPLE ID	SWMU318-TW02-00
SAMPLE DATE	03-20-2002
SAMPLE DEPTH (ft)	0' - 1'
Chromium	6.7

SAMPLE ID	SWMU318-IS02-00
SAMPLE DATE	09-14-1997
SAMPLE DEPTH (ft)	0' - 2'
Arsenic	14.3
Cadmium	3
Chromium	48.2
Mercury	0.14
Selenium	0.85

SAMPLE ID	SWMU318-SB21-00
SAMPLE DATE	2/3/2005
SAMPLE DEPTH (ft)	0-1
Chromium	5.6

SAMPLE ID	SWMU318-SS01-00
SAMPLE DATE	09-17-1997
SAMPLE DEPTH (ft)	0' - 2'
1,2-Dichlorobenzene	9200
1,4-Dichlorobenzene	4300
Barium	396
Cadmium	57.2
Chromium	91.1
Lead	110
Silver	7.2

SAMPLE ID	SWMU318-SB19-00
SAMPLE DATE	2/4/2005
SAMPLE DEPTH (ft)	0-1
Chromium	12.5

Soil Screening Value	
(ug/kg)	
1,2-Dichlorobenzene	10
1,4-Dichlorobenzene	10
(mg/kg)	
Arsenic	10
Barium	165
Cadmium	1.6
Chromium	0.4
Lead	50
Mercury	0.1
Selenium	0.81
Silver	2

NOTE:
GRAY SAMPLES WERE NOT EVALUATED IN RISK ASSESSMENT

LEGEND

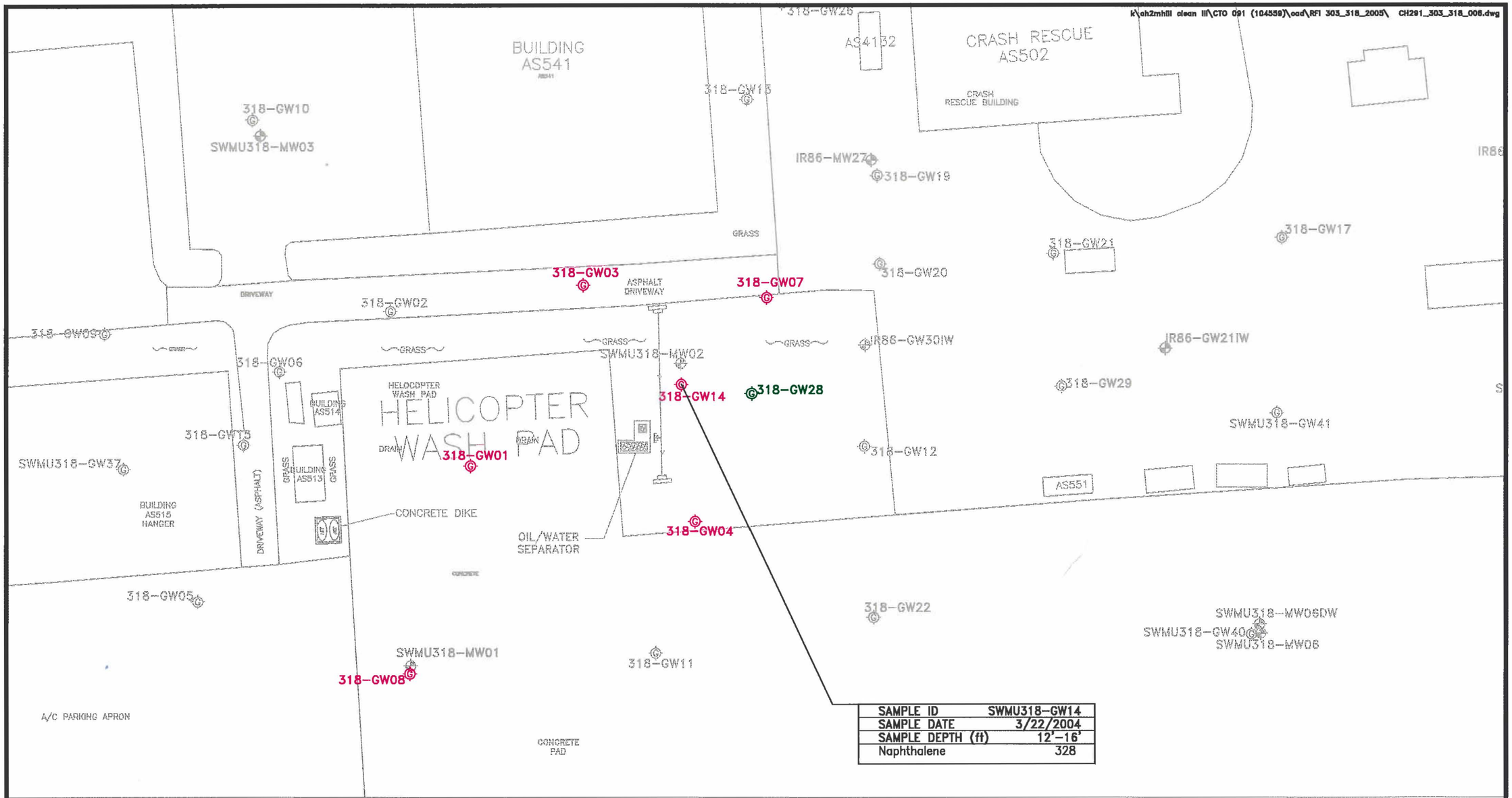
- PHASE I RFI SOIL BORING LOCATION
- PHASE III RFI SOIL BORING LOCATION
- TEMPORARY WELL
- PHASE I CSI SOIL BORING
- PHASE I CSI SURFACE SOIL

FIGURE 7-5
DETECTIONS OF CATEGORY 1 SOIL COPCS IN EXCESS OF SOIL SCREENING VALUES

SWMU 303/318
RCRA FACILITY INVESTIGATION
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

Baker

k:\ch2mhill clean ii\CTO 091 (104559)\cad\RFI 303_318_2005\ CH291_303_318_006.dwg



SAMPLE ID	SWMU318-GW14
SAMPLE DATE	3/22/2004
SAMPLE DEPTH (ft)	12'-16'
Naphthalene	328

Fresh Surface Water Screening Value (ug/L)	
Naphthalene	62

NOTE:
GRAY SAMPLES WERE NOT INCLUDED IN RISK ASSESSMENT

60 0 30 60
1 inch = 60 ft.

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LEGEND

- PHASE I RFI GROUNDWATER GRAB LOCATION
- PHASE II RFI GROUNDWATER GRAB LOCATION
- PHASE III RFI GROUNDWATER GRAB LOCATION
- MONITORING WELL LOCATION

FIGURE 7-6
DETECTIONS CATEGORY 1
GROUNDWATER COPCS IN EXCESS OF FRESH SURFACE WATER SCREENING VALUES
SWMU 303/318
RCRA FACILITY INVESTIGATION
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

8.0 CONCLUSIONS AND RECOMMENDATIONS

This section provides a discussion of conclusions that were rendered based on the data collected from the Phase I and II CSIs and the RFI. Recommendations for future actions are also discussed.

The extent of soil contamination in the vicinity of the wash pad is based on soil COPCs from the RFI and includes naphthalene, isopropylbenzene, and butylbenzene. Concentrations of butylbenzene in surface soil samples that exceeded the NC STGC are located beneath the concrete wash pad on the western end. There were no detections of this constituent in the subsurface soils at concentrations exceeding the comparison criteria, therefore the extent of this compound appears to be delineated both horizontally and vertically. Isopropylbenzene was detected in surface soils collected near the eastern end of the wash pad. Detected concentrations exceeding the NC STGC are limited to one sample, from boring SWMU318-SB02. Isopropylbenzene did not exceed the NC STGC in subsurface soils, therefore providing evidence that it is vertically delineated as well.

Naphthalene was detected in the surface soils primarily beneath the wash pad. Concentrations exceeding the NC STGC were identified in samples SWMU318-SB01-00, SWMU318-SB02-00, SWMU318-SB07-00 and SWMU318-SB08-00. Naphthalene exceedences in subsurface soils are scattered. The extent of naphthalene in soil is generally bounded. The exception is at soil boring SWMU318-SB03, where the extent is unbounded to the south. However, it is possible that since the detection of naphthalene was not observed in the intermediate soil sample from this boring, that the detection of this compound in the deep sample may be the result of groundwater contamination and not the result of soil contamination that has migrated from the surface.

The evaluation of groundwater contamination in the vicinity of the SWMUs and the wash pad is based on COPCs from the RFI: benzene, naphthalene, TCE, cis-1,2-DCE, and vinyl chloride. These five COPCs represent the highest and most-frequent detections above the NC STGC. It is evident that constituents related to SWMUs 303/318 have migrated onto IR Site 86 and have now commingled with the chlorinated solvent contamination associated with IR Site 86.

Contamination in shallow groundwater (10- to 14-feet bgs) is relatively low compared with other depth intervals. The highest detections of both benzene and naphthalene can be observed at borings on the west and east sides of the wash pad. Both plumes have a west to east trend with the majority of the constituent concentrations being detected beneath Building AS515. Given the fact that groundwater primarily travels north to northeast under normal conditions, this trend lends some credence to the suspicion that past activities prior to the construction of Building AS515, the wash pad and the SWMUs may have been responsible for some of the contamination detected in this portion of the site.

TCE concentrations in the shallow groundwater is distributed in a bi-nodal pattern . But much like benzene and naphthalene, the distribution of this constituent has a west to east trend. As with benzene and naphthalene, it is suspected that this contaminant may have not been released to the environment as a result of SWMU-related activities, but rather as a result of activities conducted prior to the construction of the SWMU and the structures adjacent to it. The extent of cis-1,2-DCE in shallow groundwater is broader than TCE, which is expected given it is a degradation product of TCE and is also more mobile. The distribution of this constituent appears to show evidence that the groundwater flow direction may be affecting the shape of this plume. Positive detections of vinyl chloride are limited to SWMU318-GW06, which also exhibits TCE and cis-1,2-DCE concentrations above NC 2L Standards. Contamination in shallow groundwater has generally been sufficiently bounded horizontally. The only exception is the detection of TCE in the groundwater sample collected from SWMU318-MW07.

The highest concentration and most extensive levels of contamination are observed in the intermediate groundwater interval (25- to 34-feet bgs). The highest level of benzene (above 100 ppb) occurs at boring SWMU318-GW15, immediately below a shallow groundwater “hot spot”. As with the shallow plume, the intermediate plume for this constituent trends west to east in the vicinity of the SWMUs and the wash pad, and also to the north and northeast indicating that predominant groundwater flow is affecting the shape of the plume. The highest level of naphthalene (above 1,000 ppb) in the intermediate groundwater interval also occurs in the vicinity of boring SWMU318-GW15 and again tends to have a west to east trend like its shallow counterpart.

TCE contamination in the intermediate zone is extensive. The highest levels of TCE are just north of Building AS515, the SWMUs, and the washpad. This band of high concentrations trends west to east with a northeastern component. Given the predominant northeasterly groundwater flow direction, it is apparent that TCE has encroached on Site 86 and is commingling with Site 86 groundwater contamination. The extent of cis-1,2-DCE is similar to TCE, but its concentrations are lower (less than 1,000 ppb). A west to east distribution pattern is evident once again for this constituent. The extent of vinyl chloride is similar to cis-1,2-DCE but at lower concentrations than cis-1,2-DCE (generally less than 100 ppb). Elevated detections appear somewhat scattered but a west to east trend is again noticeable. As with the shallow plumes, the intermediate plumes provide little evidence that they may have originated from activities at the SWMUs, but the west to east trends they display would be likely given the past activities conducted prior to the construction of the SWMUs and the surrounding structures.

The concentrations of these five constituents are significantly lower in samples collected from the deepest sampled interval (40- to 44-feet bgs); however, detections are still above NC 2L Standards for some constituents. Benzene and naphthalene were detected in a few samples collected from this interval. An interesting pattern was observed in the deepest groundwater interval. Spotty detections of benzene, naphthalene, and TCE indicate that the semiconfining unit (Belgrade formation) may be leaking contamination through in particular areas, thus letting contamination travel downward in localized areas and yet holding it back in other areas. The other noticeable trend is that the cis-1,2-DCE and vinyl chloride is the byproduct of TCE biodegradation.

The nature of the groundwater plumes observed in the vicinity of the SWMUs and the minimal levels of soil contamination beneath the wash rack indicates that it is highly probable that other activities contributed to groundwater contamination in the area. Evidence supports that maintenance activities as far back as 1962 utilized this general area as maintenance and cleaning area for aircraft. The wash rack, oil/water separator and the ASTs were not constructed until a later date (see Section 1). The groundwater contamination identified during the RFI is of the same nature, and appears to join the groundwater plume associated with IR Site 86. A review of the 2005 Monitoring Report for IR Site 86 shows the southwest section of the plume as unbounded. This section of the plume appears to merge with the groundwater isopleths provided in this RFI.

Current land use scenarios that were evaluated in this baseline HHRA for SWMUs 303/318 include the military Base personnel. Future land use scenarios that were evaluated include the adolescent trespasser, adult and child residents, and construction worker. There were no unacceptable carcinogenic risks or adverse noncarcinogenic hazard levels calculated that exceeded USEPA's acceptable criteria for the current military Base personnel or future adolescent trespasser.

Based on the quantitative results of the baseline HHRA, unacceptable risk was calculated for future residents and the future construction worker upon exposure to shallow and intermediate groundwater zones, and for future residents upon exposure to deep groundwater investigated at the SWMU. However, it should be noted that it is unlikely that the shallow/intermediate groundwater at the SWMU would be used as a potable water source, and consideration should be given to the conservatism added to the groundwater exposure evaluation.

Limited terrestrial habitat is present at SWMUs 303/318. This habitat is a maintained lawn area, which is a highly modified low-quality habitat. The lawn may be used by terrestrial flora, fauna, and avian upper trophic level receptors. Of the 101 chemicals identified as ecological COPCs in surface soil based on Steps 1 and 2 of the screening level ERA, two VOCs (1,2-dichlorobenzene and 1,4-dichlorobenzene), two SVOCs (bis[2-ethylhexyl]phthalate and butylbenzylphalate), and two inorganic constituents (cadmium and chromium) are considered ecological risk drivers at SWMUs 303/318. based on the results of Step 3a. The removal of contaminated soils from the vicinity of SWMU318-SS01 and SWMU318-IS02 would eliminate unacceptable risk to terrestrial receptors at SWMUs 303/318. In the case of bis(2-ethylhexyl)phthalate and cadmium, the removal of these soils would result in mean site concentrations below toxicity based screening values, indicative of acceptable population level risk.

Aquatic habitat at the site was limited to the drainage way east of the oil/water separator. The potential for groundwater to pose a risk to this habitat was evaluated assuming discharge of the water to the drainage way with no dilution or natural attenuation. Of the 93 chemcicals identified as groundwater ecological COPCs in the screening-level ERA, based on additional considerations addressed in Step 3a of the BERA, none are estimated to pose unacceptable risks to ecological receptors that may inhabit the drainage area, and no further evaluation is recommended. The potential for shallow and intermediate groundwater to impact off-site aquatic habitat via migration and discharge was evaluated in conjunction with the RI conducted

at Site 86 (Baker, 2003); this evaluation concluded that no additional evaluation of groundwater was warranted for the protection of off-site ecological receptors.

Recommendations for these SWMUs include the removal of contaminated soil from beneath the wash pad. Groundwater contamination should be further investigated to determine the source of the chlorinated contamination, and remediated in conjunction with the remedial efforts associated with IR Site 86.

Baker

Michael Baker Jr., Inc.

APPENDIX A

Boring Logs 2004

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -4100
PROJECT NO.: 102200 BORING NAME: SWMU 318-SB01
COORDINATES: EAST: 2467169.300 NORTH: 355827.138
ELEVATION: SURFACE: DIAMETER: (inches) 2.0

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2-in	--	--	--	3/16/2004	0.0 - 12.0	Occ rain, mid 60s	9.0'
Length	4-ft	--	--	--				
Type	Stainless	--	--	--				
Hammer Wt.	--							
Fall	--							

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1			00	FI	NA	CONCRETE 0.9		
					322	GRAVEL, subbase 1.4		
2	M-1	2		SM		F. SAND, some silt, trace clay; grey; 1.9		
		50.0%			5.9	damp; fuel odor		
3						SILT, little clay, trace fine gravel; dark brown;		
4 4.0				MH	0.9	damp; slight fuel odor 4.0		
5					NA	CLAY, trace silt; grey; moist; plastic; slight odor		
					0.9			
6	M-2	2.4	03					
		60.0%			0.1			
7				CL				
					0.1			
8 8.0			04					
					NA			
9	M-3	2.8				some silt; grey; wet		
		70.0%			0.3			
10								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Steve Smith BORING NO.: SWMU 318-SB01 SHEET 1 OF 2

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -4100
PROJECT NO.: 102200 BORING NO.: SWMU 318-SB01

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11		M-3	2.8 70.0%		SM	0.1 0.9	FINE SAND, little medium sand and silt, TRACE clay; greenish- grey; wet		
12	12.0						12.0		#######
13							Termination depth 12'		
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Steve Smith BORING NO.: SWMU 318-SB01 SHEET 2 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTA -0041
PROJECT NO.: 102200 BORING NAME: SWMU318-SB02
COORDINATES: EAST: 2467239.149 NORTH: 355832.405
ELEVATION: SURFACE: DIAMETER: (inches) 2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/16/2004	12		9.8
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks: No recovery in the 4 - 8 foot macro sleeve.

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1				00	SM	11.5	F.SAND, trace silt, wet, gray, solvent odor 0.5		
				00D			F.SAND, little clay, moist, medium dense,		
2		M-1	2.2		SC	0.3	brownish gray 1.3		
			55.0%	01			F.SAND, some clay, damp, medium dense,		
3				01D		NA	dark brown		
						NA			
4	4.0						4.0		
5									
6		M-2	0	---	---	---	No Recovery	No Recovery	
7			0.0%						
8	8.0						8.0		
9				04	CL	10.0	CLAY, little silt, trace sand, very moist, plastic, gray, very soft		
						0.4			
10		M-3	3.1				9.8		

DRILLING CO.: PARRATT-WOLFF, INC. BAKER REP.: DAVID D. SCHILLING
DRILLER: Steve Smith BORING NO.: SWMU318-SB02 SHEET 1 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTA -0041
PROJECT NO.: 102200 BORING NO.: SWMU318-SB02

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11		77.5%		SM	0.0	F.SAND, trace silt, wet, loose, gray		
						11.1		
			06		1.0			
12	12.0					12.0		
13						Termination Depth = 12.0'		
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

DRILLING CO.: PARRATT-WOLFF, INC. BAKER REP.: DAVID D. SCHILLING
DRILLER: Steve Smith BORING NO.: SWMU318-SB02 SHEET 2 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-SB03
COORDINATES:	EAST: 2467205.802	NORTH:	355782.238
ELEVATION:	SURFACE:	DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/16/2004	6'		4.0
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1					FI	NA	CONCRETE 1.0		
2		M-1	1.6 40.0%	01	SM	0.6	F SAND, some silt, trace fine gravel and clay; dark brown and black; damp; slight fuel odor		
3						2.0			
4	4.0				CL	NA	3.5 CLAY, trace silt; brown; damp 4.0		
5		M-2	0.5 12.5%		SM	NA	F SAND, some silt, trace clay; dark grey; very wet; very loose		
6	6.0						6.0		
7							Termination depth 6'		
8									
9									
10									

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Steve Smith	BORING NO.:	SWMU 318-SB03 SHEET 1 OF 1

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-SB03A
COORDINATES: EAST:	2467205.802	NORTH:	355782.238
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/19/2004	8	Sunny 60's	8.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1				00	FI	4.3	CONCRETE 0.5		
							GRAVEL, subbase, fuel oder		
2		M-1	2.6		GC	2.0	F SAND, little silt, trace clay; grey; moist		
			65.0%			0.3	2.5		
3					MH		SILT, trace clay; dark brown; damp; fuel odor		
						NA	3.5		
4	4.0				CL		CLAY, trace silt; dark brown; damp; fuel odor 4.0		
5						NA			
						0.0			
6		M-2	1.6		CL		yellow-brown and grey, mottled; damp		
			40.0%			0.0			
7				04			moist		
						NA			
8							wet - water at 8.0'		
9							Termination depth 8.0'		
10									

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Richard Navatka	BORING NO.:	SWMU 318-SB03A SHEET 1 OF 1

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-SB04
COORDINATES: EAST:	2467138.576	NORTH:	355776.885
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Macro Core	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2-in	--	--	--	3/16/2004	0.0 - 8.0	Occ rain, mid 60s	7.9
Length	4-ft	--	--	--				
Type	Stainless	--	--	--				
Hammer Wt.	--							
Fall	--							

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1					FI	NA	CONCRETE 0.9		
2		M-1	1.9 47.5%	01	SM	4.9	F/C GRAVEL, subbase; wet 1.5		
3						1.0	F. SAND, some silt, trace clay; greenish-grey; damp; fuel odor 1.8		
4	4.0				MH	NA	SILT, some clay; dark brown; damp; slight odor 4.0		
5				02		NA	CLAY, trace silt; brown and grey, mottled; plastic; moist; no odor		
6		M-2	2.9 72.5%			0.1			
7					CL	0.1	7.0		
8	8.0			04		0.4	SILT, some clay, trace fine sand and gravel; grey; moist; wet at 7.9' 8.0		
9							Termination depth 8'		
10									

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Steve Smith	BORING NO.:	SWMU 318-SB04 SHEET 1 OF 1

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-SB05
COORDINATES: EAST:	2467199.541	NORTH:	355897.878
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/16/2004	8'		6.0
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1				00 MS/MSD		0.0	SILT, trace fine sand and clay, roots, (to approx 1') Dark brown to black; damp; tan fine gravel (2'-2.3')		
2		M-1	3.6 90.0%		ML	0.0			
3						0.0			
4	4.0			02		0.0	3.7		
5		S-2	1.0 50.0%		CL	0.0	CLAY, trace to little silt; brown; damp; slightly plastic and stiff		
6	6.0			03		0.0	6.0		
7		S-3	1.5 75.0%		SM	NA	F. SAND, little silt, trace clay; grey; wet; water at 6'		
8	8.0						8.0		
9							Termination depth 8'		
10									

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Steve Smith	BORING NO.:	SWMU 318-SB05 SHEET 1 OF 1

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU318-SB06
COORDINATES:	EAST: 2467245.650	NORTH:	355889.087
ELEVATION:	SURFACE:	DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/16/2004	12		8.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1			00	SM	6.3	F.SAND, little silt, dark brown, moist, grass roots		
2	M-1	3.1 77.5%	01	SC	0.6	F.SAND, little clay, dark brown, moist loose		
3			01D		0.1			
4					NA			
4.0						4.3		
5			02		5.2			
6	M-2	2.3 57.5%	02D	CL	0.1	CLAY, trace sand, moist, firm, semi-plastic brown		
7					NA			
8					NA			
8.0						8.0		
9			04	MH	0.1	SILT, trace sand, wet, very soft, gray		
10	M-3	3.0			0	10.2		

DRILLING CO.:	PARRATT-WOLFF, INC.	BAKER REP.:	DAVID D. SCHILLING
DRILLER:	Steve Smith	BORING NO.:	SWMU318-SB06 SHEET 1 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041

PROJECT NO.: 102200 BORING NO.: SWMU318-SB06

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11			75.0%		SM	0.0	F.SAND, trace silt, wet, loose, brownish gray		
							11.0		
						NA			
12	12.0						12.0		
13							Termination Depth = 12.0'		
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

DRILLING CO.: PARRATT-WOLFF, INC. BAKER REP.: DAVID D. SCHILLING

DRILLER: Steve Smith BORING NO.: SWMU318-SB06 SHEET 2 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-SB07
COORDINATES: EAST:	2467137.652	NORTH:	355854.081
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/20/2004	8'		7.5'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description		Bore Detail	Elevation (Ft. MSL)
1				00	FI	NA	CONCRETE	0.5		
					GP		F. GRAVEL, some f/c sand; brown withblack			
						59.9	staining; damp; fuel odor	1.5		
2		M-1	2.9				F. SAND, some silt, little clay; grey; moist;			
			72.5%		SM	0.7	slight fuel odor			
3								3.0		
					CL	0.0	CLAY, trace silt; dark brown; damp			
4	4.0			02						
5						1.3				
						1.0				
6		M-2	2.7		CL		grey and trace yellow-brown; moist			
			67.5%			NA				
7										
						NA	water at 7.5'	7.8		
8	8.0			04	SM		F. SAND, some silt, trace clay; grey; wet	8.0		
9							Termination depth 8'			
10										

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Steve Smith	BORING NO.:	SWMU 318-SB07 SHEET 1 OF 1

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-SB08
COORDINATES: EAST:	2467130.626	NORTH:	355818.233
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/20/2004	8'		7.5'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description		Bore Detail	Elevation (Ft. MSL)
1				00	FI	57.0	CONCRETE	0.5		
							F. GRAVEL, trace f. sand; grey and white; dry			
2		M-1	2.5		GW	0.3	F/C SAND zone; black staining; slight fuel odc			
			62.5%			NA		2.5		
3							CLAY, trace silt; brown; damp; plastic and stiff			
4	4.0				CL	NA				
5				02	CL	NA				
						0.5				
6		M-2	2.7							
			67.5%			0.5	moist and soft			
7										
						NA	water at 7.5'	7.5		
8	8.0			04	SM		F. SAND, some silt, trace clay; grey; wet	8.0		
							slight fuel odor			
9							Termination depth 8'			
10										

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Steve Smith	BORING NO.:	SWMU 318-SB08 SHEET 1 OF 1

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-SB09
COORDINATES: EAST:	2467093.906	NORTH:	355817.720
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/22/2004	8'	Sunny 40's-50's	6.0
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1			00		0.0	F. SAND, some silt and roots, trace clay; black; damp		
2	M-1	2.0 50.0%		SM	0.0	1.5 SILT, some clay; yellow-brown; damp 2.0		
3				MH	0.0	F. SAND, little silt, trace clay;yellow-brown; damp		
4	4.0		02	SM	0.0	4.0		
5					0.0	CLAY, some silt; dark grey; moist		
6	M-2	2.8 70.0%	03	CL	0.0	wet at 6.0'		
7					NA	7.5 F. SAND, some silt, little clay; grey; wet		
8	8.0			SM		8.0		
9						Termination depth 8'		
10								

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Richard Navatka	BORING NO.:	SWMU 318-SB09 SHEET 1 OF 1

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NAME: SWMU 318-SB10
COORDINATES: EAST: 2467098.009 NORTH: 355875.751
ELEVATION: SURFACE: DIAMETER: (inches) 2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/23/2004	8'	Sunny 40's-50's	7.0
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
				00	FI		CONCRETE 0.5		
1				MS/MSD	SP	4.9	F/C SAND 1.5		
2		M-1	2.5 62.5%		SM	0.5	F. SAND, little silt, trace clay; brown; wet 2.0		
					OL		SILT, trace clay; black; damp 2.5		
3						0.3	CLAY, trace silt; black; non plastic; damp		
					OH				
4	4.0								
				02		NA			
5							brown and grey, mottled; moist		
					OH				
6		M-2	3.0 75.0%	03					
7							7.0		
					SM		F. Sand, some silt, trace clay; grey; wet		
8	8.0						8.0		
9							Termination depth 8'		
10									

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-SB10 SHEET 1 OF 1

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-SB11
COORDINATES: EAST:	2467126.983	NORTH:	355886.092
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/22/2004	8'	Sunny 40's-50's	6.0
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1			00		4.9	F. SAND, little silt, grass, roots; loose; moist; dark brwn 0.3		
2	M-1	2.1 52.5%	01	SM	0.5	F. SAND, little silt; loose; medium dense; mois dark brown		
3					0.3			
4 4.0						4.6		
5				SM CL	NA	CLAY, little sand; soft; plastic; moist; brown 5.0		
6	M-2	2.2 55.0%	03/03D	SM		F. SAND; trace silt; loose; moist; dark brown 6.0		
7				CL		CLAY, little sand; soft; plastic; wet; brown		
8 8.0						8.0		
9						Termination depth 8'		
10								

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	David D. Schilling
DRILLER:	Steve Smith	BORING NO.:	SWMU 318-SB11 SHEET 1 OF 1

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NAME: SWMU318-SB12
COORDINATES: EAST: 2467268.887 NORTH: 355787.761
ELEVATION: SURFACE: DIAMETER: (inches) 2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/22/2004	12		8.4
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1	M-1	4 100.0%	00	SM	-	F.SAND, trace silt, grass,roots; loose; moist; dark brown 0.3		
2				CL		CLAY, little sand; firm; non-plastic; damp; brown 0.8		
3			01	SC		F. SAND, little clay; medium dense; moist; brown		
4						4.0		
5	M-2	0.6 15.0%		CL	-	CLAY, little sand; firm; semi-plastic; moist; dark brown		
6								
7								
8						8.4		
9	M-3	3.2 80.0%	04	CL	-	CLAY, little sand; firm; plastic; wet; grey		
10						10.2		

DRILLING CO.: PARRATT-WOLFF, INC. BAKER REP.: DAVID D. SCHILLING
DRILLER: Steve Smith BORING NO.: SWMU318-SB12 SHEET 1 OF 2

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU318-SB12

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11	M-3	3.2 80.0%		SM	-	F.SAND, trace silt; loose; wet; gray		
12 12.0						12.0		
13						Termination Depth = 12.0'		
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

DRILLING CO.: PARRATT-WOLFF, INC. BAKER REP.: DAVID D. SCHILLING
DRILLER: Steve Smith BORING NO.: SWMU318-SB12 SHEET 2 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-SB13
COORDINATES: EAST:	2467119.540	NORTH:	355906.709
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/23/2004	8'	Sunny 40's-50's	6.3
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
				00	FI		ASPHALT 0.3		
1					SM	4.9	F/C SAND, trace silt and clay, brown, damp 1.5		
2		M-1	1.9 47.5%	01		0.5	CLAY, trace silt; black; damp 2.0		
3					OH	0.3			
4	4.0								
						NA			
5					OH		brown and grey, mottled		
6		M-2	3.1 77.5%	03			some silt and f. sand; grey; wet at 6.3'		
7							7.0		
					SM		F. Sand, some silt, trace clay; grey; wet		
8	8.0						8.0		
9							Termination depth 8'		
10									

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Richard Navatka	BORING NO.:	SWMU 318-SB13 SHEET 1 OF 1

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-GW01
COORDINATES:	EAST: 2467171.380	NORTH:	355815.862
ELEVATION:	SURFACE:	DIAMETER: (inches)	2

Rig: INGERSOL RAND 300

	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/18/2004	44'	Sunny 60's	10.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary G= Groundwater Grab
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1				FI	0.0	CONCRETE 0.8		
				FI		F. GRAVEL, subbase; strong fuel odor		
2	M-1	2.9	-	SM	0.0	1.5		
		72.5%				F. SAND, little silt, trace clay; grey; wet; odor		
3				OL	0.0	2.5		
						SILT, trace clay; black; damp; slight fuel odor		
4	4.0			CL	NA	3.5		
						CLAY, trace silt, black becoming grey and		
5					0.0	yellow brown; slightly mottled; plastic; wet		
6	M-2	2.4	-	CL	0.0			
		60.0%						
7					NA			
8	8.0							
					0.0			
9	M-3	3.2	-	CL				
		80.0%			0.0	trace f. sand; grey; moist to wet		
10						water at 10' 10.0		

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Richard Navatka	BORING NO.:	SWMU 318-GW01 SHEET 1 OF 3

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW01

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11	M-3	3.2 80.0%	-	SC	0.0	F. SAND, little clay; grey; wet		
12 12.0					NA	little silt, trace clay; grey; wet to soupy wet 12.0		
13						No Recovery		
14	G-1	-	12-16	-	-	Groundwater grab for MVOC, FVOC and SVOC's SWMU 318-GW01		
15								
16 16.0						16.0		
17					0.6	F. SAND, little silt; trace clay; grey; wet		
18	M-4	3.6 90.0%	-	SC	0.4			
19					1.0	some silt, trace clay		
20 20.0					0.4	little silt, trace clay		
21					1.6	F. SAND, little silt, trace clay; grey; wet; slight fuel odor		
22	M-5	3.2 80.0%	-	SC	3.2			
23					1.3			
24 24.0					NA	24.0		
25	G-2					Groundwater grab for MVOC's SWMU 318-GW01-01		
26		1.5 37.5%	24-28	SC	-	F. SAND, little silt, trace clay; grey; soupy wet; mud; fuel odor		
27								
28 28.0						28.0		
29	M-6	2.5 62.5%	-	SC	NA	F. SAND, some silt and clay, grey with zone of greenish-brown, wet; moderate fuel odor		
30					1.5			

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW01 SHEET 2 OF 3

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041

PROJECT NO.: 102200 BORING NO.: SWMU 318-GW01

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31	M-6	2.5 62.5%	-	SC	1.5	F. SAND, some silt and clay, grey with zone of greenish-brown, wet; moderate fuel odor		
32 32.0					NA			
33	M-7	0.7 17.5%	-	SP	0.2	F/C SAND, (shell and fossil frags), little clay; trace fine gravel; cream color; wet		
34					0.1			
35					0.1			
36 36.0					NA			
37	M-8		-	SP	0.1	F/C SAND, (shell and fossil frags), trace silt, clay; grey; wet		
38					0.1	some silt, little clay		
39					0.1	tan		
40 40.0					0.1	F. SAND, trace silt, (shell frags); moist; tan 40.0		
41	G-3	-	40-44	-	-	No Recovery		
42						Groundwater grab for MVOC's SWMU 318-GW01-02		
43								
44 44.0						44.0		
45						Termination depth 44'		
46								
47								
48								
49								
50								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn

DRILLER: Richard Navatka BORING NO.: SWMU 318-GW01 SHEET 3 OF 3

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU318-GW02
COORDINATES: EAST:	2467124.453	NORTH:	355906.293
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/17/2004	44		8.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks: Discreet sampler used to collect groundwater grab samples

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1				FI	0.0	ASPHALT		
						SAND & GRAVEL, damp, loose, light brown 0.8		
2	M-1	4		CL	0.0	CLAY, trace sand, firm, moist, semi-plastic, dark gray		
		100.0%			0.0	brown		
3								
4					0.0			
4.0								
5				CL	0.0	5.2		
				ML	0.0	SILT, trace sand, moist, gray		
6	M-2	2.3				5.9		
		57.5%		SM	NA	F.SAND, some silt, moist, loose, brownish gray, orange staining		
7								
					NA			
8								
8.0								
9				SM	0.0	V.F.SAND, trace silt, wet, loose, brownish gray		
					7.1			
10	M-3	2.7	GW02					

DRILLING CO.:	PARRATT-WOLFF, INC.	BAKER REP.:	DAVID D. SCHILLING
DRILLER:	Steve Smith	BORING NO.:	SWMU318-GW02 SHEET 1 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041

PROJECT NO.: 102200 BORING NO.: SWMU318-GW02

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11		67.5%	GW02D	SM	2.0			
12 12.0					NA			
13				SM	0.0	F.SAND, trace silt, wet, very loose, gray		
14	M-4	2			0.0			
15		50.0%			NA			
16 16.0					NA			
17				SM	0.0			
18	M-5	2.6			0.0			
19		65.0%			0.0			
20 20.0					NA			
21							No Recovery	
22	M-6	0.0	---	---	---	No Recovery		
23		0.0%						
24 24.0								
25			GW02-01	ML	0.3	SILT, little fine sand, wet, loose, greenish gray		
26	M-7	3.3			0.1			
27		82.5%			0.0	26.6		
28 28.0				SM	NA	F.SAND, trace silt, wet, loose, grayish brown, trace coarse sand		
29					0.0	29.2		
30	M-8	1.6		SP	0.0	M/C SAND, trace silt, medium dense, light brown, shell fragments		

DRILLING CO.: PARRATT-WOLFF, INC. BAKER REP.: DAVID D. SCHILLING

DRILLER: Steve Smith BORING NO.: SWMU318-GW02 SHEET 2 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU318-GW02

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31		40.0%		SP	NA	M/C SAND, trace silt, medium dense, light brown, shell fragments		
32					NA			
33				SP	0.2			
34	M-9	4.0 100.0%			0.0			
35					0.2			
36					0.0			
37				SP	0.0			
38	M-10	4.0 100.0%			0.0			
39					0.0			
40					0.0			
41			GW02-02	SP	0.0			
42	M-11	4.0 100.0%			0.0			
43					0.0			
44				SM		43.3 F.SAND, trace silt, moist, dense, brown, calcite stringers		
45						Termination Depth = 44.0'		
46								
47								
48								
49								
50								

DRILLING CO.: PARRATT-WOLFF, INC. BAKER REP.: DAVID D. SCHILLING
DRILLER: Steve Smith BORING NO.: SWMU318-GW02 SHEET 3 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-GW03
COORDINATES: EAST:	2467237.584	NORTH:	355921.574
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/18/2004	44'	Cloudy 50's - 60's	7.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary G= Groundwater Grab
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1					FI	0.0	ASPHALT, subbase		
							1.0		
					OL	0.0	SILT, trace clay; black; damp		
2		M-1	2.9	-	CL		CLAY, trace silt; black; damp		
			72.5%			0.0			
3									
						NA			
4	4.0						dark grey and yellow brown, mottled; damp		
						0.0			
5							moist		
						0.0			
6		M-2	3.1	-	CL		grey; wet		
			77.5%			0.0			
7							water at 7.0'		
						NA	7.5		
8	8.0						F. SAND, some clay; grey; wet		
						0.0			
9		M-3	2.8	-	SC		little silt, trace clay; greenish grey; wet to soupy		
			70.0%			0.0	wet		
10									

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Richard Navatka	BORING NO.:	SWMU 318-GW03 SHEET 1 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW03

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11	M-3	2.8 70.0%	-	SC	0.0	F. SAND, little silt, trace clay; greenish grey; v		
12					NA			
12.0						12.0		
13						No Recovery		
14	G-1	-	12-16	-	-	Groundwater grab for MVOC's and SVOC's SWMU 318-GW03		
15								
16								
16.0						16.0		
17					0.9	F. SAND, little silt; trace clay; grey; wet		
18	M-4	3.2 80.0%	-	SC	1.3	greenish grey		
19					0.3			
20					NA	some silt, little clay at 19.5'		
20.0								
21					0.0	F. SAND, some silt, trace clay; light greenish grey; soupy wet		
22	M-5	1.9 47.5%	-	SC	NA			
23					NA			
24					NA			
24.0						24.0		
25	G-2					Groundwater grab for MVOC's SWMU 318-GW03-01		
26		-	24-28	SM	-	F. SAND, some silt, little clay; olive drab; wet (sample appers to be 28'-32', but driller says 24'-28')		
27								
28								
28.0						28.0		
29	M-6	3.4 85.0%	-	SM	1.4	F. SAND, some silt and clay, trace fossil frags; olive drab; wet		
30					0.6			

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW03 SHEET 2 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041

PROJECT NO.: 102200 BORING NO.: SWMU 318-GW03

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31	M-6	3.4 85.0%	-	SM	0.3	F. SAND, some silt and clay, trace fossil frags; olive drab; wet 30.3		
32 32.0				SP	0.1	F/C SAND (fossil and shell frags), some silt, little clay,; tan; wet		
33					0.2	F/C SAND, little fine gravel, trace silt and clay; tan; very wet		
34	M-7	3.1 77.5%	-	SP	0.1			
35					0.1	little fine gravel, silt and clay; tan; wet		
36 36.0					NA			
37	M-8	4.0 100.0%	-	SP	0.0	F/C SAND, some silt, little clay, trace f. gravel; light brown; wet		
38					0.0			
39					0.0			
40 40.0					0.0	F. SAND, trace shell frags; light brown; damp 40.0		
41	G-3	-	40-44	-	-	No Recovery		
42						Groundwater grab for MVOC's SWMU 318-GW03-02		
43								
44 44.0						44.0		
45						Termination depth 44'		
46								
47								
48								
49								
50								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn

DRILLER: Richard Navatka BORING NO.: SWMU 318-GW03 SHEET 3 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NAME: SWMU 318-GW04
COORDINATES: EAST: 2467303.242 NORTH: 355783.157
ELEVATION: SURFACE: DIAMETER: (inches) 2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/18/2004	44'	Cloudy 50's - 60's	10'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary G= Groundwater Grab
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1				OL	0.5	SILT, trace clay; roots; black; damp 0.3		
				MH		SILT, Ttrace fine sand; yellow-brown; damp 0.9		
2	M-1	3.5	-	GP	19.9	FINE GRAVEL, then f/c sand, little silt; yellow-brown; damp 1.9		
		87.5%			0.3	SILT, trace clay, grading to some clay; black; damp		
3				OL		burnt odor		
					0.0			
4	4.0					4.0		
5					0.0	CLAY; trace silt; grey; some yellow brown in grey damp; plastic		
					0.0	SILT, little clay; grey; moist		
6	M-2	3.2	-	CL				
		80.0%			0.0	trace wood fragments and silt; moist; soft; plastic		
7						dark grey		
					NA			
8	8.0							
9					0.0			
	M-3	3.0	-	CL				
		75.0%			0.2			
10						some silt; grey; wet		

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW04 SHEET 1 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW04

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11	M-3	3.0 75.0%	-	CL	0.3	CLAY, trace silt; grey; plastic; wet 10.5		
				ML		SILT, some f. sand; grey; wet 11.0		
12				SM	NA	F. SAND, little silt, trace clay; grey; wet 12.0		
12.0								
13						No Recovery		
14	G-1	-	12-16	-	-	Groundwater grab for MVOC's and SVOC's SWMU 318-GW04 and 04 MS/MSD (MVOC's)		
15								
16						16.0		
16.0								
17					0.7	F. SAND, some silt; grey; wet, too soupy wet		
18	M-4	2.4 60.0%	-	SM	0.3			
19					NA			
20					NA			
20.0								
21					2.6	F. SAND, little silt, trace clay; grey; soupy wet		
22	M-5	1.9 47.5%	-	SM	0.5			
23					NA			
24					NA	brownish grey 24.0		
24.0								
25	G-2					Groundwater grab for MVOC's and FVOC's SWMU 318-GW04-01		
26		-	24-28	SM	-			
	M-9					F. SAND, some silt, trace clay; grey; wet 26.6		
27						SILT, some clay, trace f. gravel; olive drab; damp		
				MH		F. SAND, some clay; olive drab, moist		
28						28.0		
28.0								
29	M-6	4.0 100.0%	-	MH	0.0	some silt, trace shell frags (open space); olive drab;		
30					2.7	wet		

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW04 SHEET 2 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041

PROJECT NO.: 102200 BORING NO.: SWMU 318-GW04

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31	M-6	2.5 62.5%	-	MH	0.0	SILT, some clay, trace f. gravel; olive drab; damp		
						some silt, little clay; olive drab; wet		
32					NA			
32.0						more sheel, turning tan 31.9		
33	M-7	3.8 95.0%	-	MH	0.0	Silt, trace shell frags and clay; tan; moist		
					0.0	void (33-34) water		
34								
35					0.0	F/C GRAVEL, some silt, trace f/c sand; tan; wet		
					0.0	SILT, little f/c sand; tan; moist		
36								
36.0								
37	M-8	4.0 100.0%	-	MH	0.0	F. GRAVEL, some f/c sand and silt, little clay; grey; wet		
					0.0			
38								
39					0.0			
					0.0	F. SAND, some silt and f. gravel, little clay; grey; wet		
40								
40.0						40.0		
41	G-3	-	40-44	-	-	No Recovery		
42						Groundwater grab for MVOC's SWMU 318-GW04-02		
43								
44								
44.0						44.0		
45						Termination depth 44'		
46								
47								
48								
49								
50								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn

DRILLER: Richard Navatka BORING NO.: SWMU 318-GW04 SHEET 3 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-GW05
COORDINATES: EAST:	2467011.302	NORTH:	355736.159
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/17/2004	44'	Cloudy 50's	7.5'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary G= Groundwater Grab
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1					FI	NA	CONCRETE 0.8		
2		M-1	2 50.0%	-		0.0	GRAVEL, subbase 2.0		
3						0.0	VF SAND, trace silt and clay; brown; dark grey and light grey fine laminae; damp		
4	4.0				SM	NA			
5						NA			
6		M-2	2.6 65.0%	-	SM	0.9	F. SAND, trace silt and clay; mainly brown with some thin grey layers		
7						0.1			
8	8.0				GP	0.1	water at 7.5' 7.5 F/C GRAVEL, trace fine sand and clay; 8.0		
9		M-3	1.0 50.0%	-	SM	NA 0.3	brown; wet F. SAND, little silt, trace clay; grey; wet		
10									

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Richard Navatka	BORING NO.:	SWMU 318-GW05 SHEET 1 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW05

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11						No Recovery		
12	G-1	-	10-14	-	-	Groundwater grab for MVOC's and SVOC's		
13								
14 14.0						14.0		
15	M-4	1.0 50.0%	-	SM	NA	F. SAND, little silt, trace clay; grey, wet		
16 16.0								
17					0.0	F. SAND, little silt with layers of some silt; grey; silty layers light green grey; trace clay throughout, wet		
18	M-5	3.3 82.5%	-	SM	0.0			
19					0.0	LITTLE SILT, trace clay; grey; wet		
20 20.0					0.0			
21					NA	F. SAND, some silt, trace clay; grey; wet		
22	M-6	2.6 65.0%	-	SM	0.0			
23					0.0			
24 24.0					0.0			
25						No Recovery		
26	G-2	-	24-28	-	-	Groundwater grab for MVOC's SWMU 318-GW05-01/01D		
27								
28 28.0								
29	M-7	2.6 65.0%	-	MH	0.0	SILT, some clay, little fine sand, trace fine gravel (rounded); olive drab; moist		
30					0.0	TRACE FINE SAND, wet		

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW05 SHEET 2 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW05

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31	M-7	2.6 65.0%	-	MH	0.0	SILT, some clay, little fine sand, trace fine gravel, (rounded); olive drab; moist		
32 32.0					NA	CLAY, some silt, little fine sand; greenish brown; moist		
33				MH	0.0	33.2		
34	M-8	4.0 100.0%	-		0.0	F/C SAND, some silt, little clay; grey; wet; interbedded with shells and fossils		
35				SM	0.0			
36 36.0					0.0	F/C GRAVEL (shells and fossil frags), little silt and clay; grey; wet		
37					0.0			
38	M-9	3.7 92.5%	-	SM	0.0	F/C SAND, (shell and fossil frags), some silt and clay, trace fine gravel; tan; wet; interbedded with silt, little clay layers		
39					0.0			
40 40.0					0.0			
41						No Recovery		
42	G-3	-	40-44	-	-	Groundwater grab for MVOC's SWMU 318-GW05-02		
43								
44 44.0								
45						Termination depth 44'		
46								
47								
48								
49								
50								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW05 SHEET 3 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NAME: SWMU318-GW06
COORDINATES: EAST: 2467059.240 NORTH: 355871.005
ELEVATION: SURFACE: DIAMETER: (inches) 2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/17/2004	44		8.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks: Discreet sampler used to collect groundwater grab samples

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1				SM	0.0	F.SAND, trace silt, damp, loose, grass roots, brown		
				CL		CLAY, little sand, damp, semi-plastic, firm, brown		
2	M-1	4		SC	0.0	F.SAND, trace clay, damp, loose brown		
		100.0%				1.9		
3				CL	0.0	CLAY, trace sand, damp, plastic firm, brown		
4					0.0			
	4.0							
5					0.0			
				CL				
6	M-2	1.9			0.0			
						5.4		
7		47.5%		SM	NA	F.SAND, some silt, moist, very loose, gray, orange staining		
8					NA			
	8.0					8.0		
9				SM	0.0			
10	M-3	4.0	GW06		0.0			

DRILLING CO.: PARRATT-WOLFF, INC. BAKER REP.: DAVID D. SCHILLING
DRILLER: Steve Smith BORING NO.: SWMU318-GW06 SHEET 1 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU318-GW06

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11		100.0%		SM	0.0	F.SAND, little silt, wet, loose, gray		
					0.0			
12	12.0					12.0		
13				SM	1.2			
					0.4			
14	M-4	3.9						
		97.5%			0.6			
15								
					0.2			
16	16.0					16.0		
17				SM	0.0			
					0.0	17.6		
18	M-5	3.5				V.F.SAND, trace silt, saturated, very loose, gray		
		87.5%			4.5	18.6		
19						F.SAND, little silt, wet, loose, gray		
					1.3			
20	20.0					20.0		
21				SM	2.6			
						21.0		
22	M-6	2.8			5.2	V.F.SAND, trace silt, saturated, very loose, gray, sweet odor (creosote) 22.2		
		70.0%			8.7	F.SAND, little silt, wet, loose, gray, odor		
23								
					NA			
24	24.0					24.0		
25			GW06-01	SM	15.2	F.SAND, little silt, wet, loose, gray, strong odor		
					NA			
26	M-7	0.6						
		15.0%			NA			
27								
					NA			
28	28.0							
29				SM	5.3	F.SAND, some silt, wet, loose, dark gray, strong odor		
					3.4	29.6		
30	M-8	3.5				F.SAND, little silt, wet, loose, brownish gray,		

DRILLING CO.: PARRATT-WOLFF, INC. BAKER REP.: DAVID D. SCHILLING
DRILLER: Steve Smith BORING NO.: SWMU318-GW06 SHEET 2 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU318-GW06

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31		87.5%			1.2	odor 30.7		
32					1.7	F.SAND, trace silt, shell fragments, wet, loose, brownish gray 32.0		
33				SM	0.0			
34	M-9	4.0 100.0%			0.0	34.0		
35					0.2	F.SAND, trace silt, shell fragments, wet, dense, light gray		
36					0.0			
37				SM	0.0			
38	M-10	4.0 100.0%			0.0			
39					0.0			
40								
41			GW06-02 GW06-02D	SM	0.0			
42	M-11	4.0 100.0%			0.0			
43					0.0			
44					0.0	43.8		
45						F.SAND, trace silt, shell fragments, moist, very dense, gray		
46						Termination Depth = 44.0'		
47								
48								
49								
50								

DRILLING CO.: PARRATT-WOLFF, INC. BAKER REP.: DAVID D. SCHILLING
DRILLER: Steve Smith BORING NO.: SWMU318-GW06 SHEET 3 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU318-GW07
COORDINATES: EAST:	2467344.957	NORTH:	355914.315
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/17/2004	44		8.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks: Discreet sampler used to collect groundwater grab samples

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1					SC	0.0	F.SAND, little clay, damp, medium dense, brown		
2		M-1	2.2 55.0%		CL	0.0	1.4 CLAY, little sand, damp, firm, semi-plastic, brown		
3						NA			
4	4.0					NA	4.0		
5					CL	0.0	CLAY, trace sand, damp, firm, semi-plastic,brown, orange staining		
6		M-2	3 75.0%			0.0			
7						0.1	6.5 CLAY, little sand, moist, soft, plastic, gray		
8	8.0					NA	8.0		
9					SM	0.0	F.SAND, trace silt, wet, loose, gray		
10		M-3	3.9	GW07		0.0			

DRILLING CO.:	PARRATT-WOLFF, INC.	BAKER REP.:	DAVID D. SCHILLING
DRILLER:	Steve Smith	BORING NO.:	SWMU318-GW07 SHEET 1 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041

PROJECT NO.: 102200 BORING NO.: SWMU318-GW07

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11		97.5%		SM	0.0			
					0.4			
12 12.0								
13				SM	0.0			
					1.2			
14	M-4	3.5						
		87.5%			0.0			
15								
					1.1			
16 16.0								
17				SM	0.3			
					0.3			
18	M-5	4.0						
		100.0%			2.0			
19								
					4.7			
20 20.0								
21				SM	7.4			
					NA			
22	M-6	1.0						
		25.0%			NA			
23								
					NA			
24 24.0						24.0		
25			GW07-01	ML	21.1	SILT & V.F.SAND, little clay, wet, loose, olive drab/gray, strong odor		
					NA			
26	M-7	0.5						
		12.5%			NA			
27								
					NA			
28 28.0								
				ML	13.7	28.7		
29						C.SAND, some medium sand, trace silt, wet, loose, fossils & shell fragments, light gray		
				SP	11.9			
30	M-8	4.0						

DRILLING CO.: PARRATT-WOLFF, INC. BAKER REP.: DAVID D. SCHILLING

DRILLER: Steve Smith BORING NO.: SWMU318-GW07 SHEET 2 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041

PROJECT NO.: 102200 BORING NO.: SWMU318-GW07

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Identity	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31		100.0%		SP	2.1	C.SAND, some medium sand, trace silt, wet, loose, fossils & shell fragments, light gray		
32					3.7			
33				SP	1.4			
34	M-9	2.8			0.2			
35		70.0%			0.0			
36					NA			
37				SP	3.9			
38	M-10	4.0			7.7			
39		100.0%			10.5			
40					0.2			
41			GW07-02	SP	0.0			
42	M-11	4.0		SC	0.0	41.7 F.SAND, some clay, wet, dense, brown calcite stringers		
43		100.0%			0.0			
44					0.0			
45						Termination Depth = 44.0'		
46								
47								
48								
49								
50								

DRILLING CO.: PARRATT-WOLFF, INC. BAKER REP.: DAVID D. SCHILLING

DRILLER: Steve Smith BORING NO.: SWMU318-GW07 SHEET 3 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NAME: SWMU 318-GW08
COORDINATES: EAST: 2467135.783 NORTH: 335693.964
ELEVATION: SURFACE: DIAMETER: (inches) 2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/17/2004	44'	Cloudy 50's	7.5'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary G= Groundwater Grab
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1					FI	NA	CONCRETE 0.8		
2		M-1		-		13.1	GRAVEL, subbase 1.5		
3					MH	0.0	SILT, little clay,trace fine sand; dark brown an slightly yellow staining; damp		
4	4.0					0.0	4.0		
5					CL	0.0	CLAY; trace silt; grey and yellow brown; 5.0 damp		
6		M-2	2.7 67.5%	-	MH	0.0	SILT, little clay; grey; moist		
7						0	7.0		
8	8.0				SM	NA	F. SAND, some silt, trace clay; brown - grey; wet at 7.5'		
9		M-3	3.1 77.5%	-	SM	NA 0.3	LITTLE SILT, trace clay; light green - grey; wet		
10									

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW08 SHEET 1 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW08

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11	M-3	3.1 77.5%	-	SM	0.0	F. SAND, some silt, trace clay; brown - grey;		
12 12.0					NA	12.0		
13	G-1	-	12-16	-	-	No Recovery		
14						Groundwater grab for MVOC's		
15								
16 16.0						16.0		
17	M-4	3.1 77.5%	-	SM	0.0	F. SAND, little silt, trace clay; grey; wet		
18					0.0			
19					0.0			
20 20.0					NA			
21	M-5	2.7 67.5%	-	SM	0.0	F. SAND, little silt, trace clay; grey; wet		
22					0.0			
23					0.0			
24 24.0						24.0		
25	G-2	-	24-28	-	-	No Recovery		
26						Groundwater grab for MVOC's and SVOC's SWMU 318-GW08-01		
27								
28 28.0						28.0		
29	M-6	2.5 62.5%	-	SM	0.0	SOME SILT, trace clay; grey; wet		
30					0.0			

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW08 SHEET 2 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW08

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31	M-6	2.5 62.5%	-	SM	0.0	F. SAND, some silt, trace clay; grey; wet		
32 32.0					NA	32.0		
33	M-7	3.8 95.0%	-	SM	0.0	F/C SAND (shell and fossil frags), some silt, little clay; grey;wet with interbedded layers of f. gravel, some silt, trace f/c sand and clay; grey wet (shell and fossil frags)		
34					0.0			
35					0.0			
36 36.0					0.0			
37	M-8	4.0 100.0%	-	SM	0.0			
38					0.0			
39					0.0	39.4		
40 40.0				ML		SILT, trace f/c sand; grey; moist 40.0		
41	G-3	-	40-44	-	-	No Recovery		
42						Groundwater grab for MVOC's and SVOC's SWMU 318-GW08-02		
43								
44 44.0								
45						Termination depth 44'		
46								
47								
48								
49								
50								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW08 SHEET 3 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Invetigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-GW09
COORDINATES: EAST:	2466956.983	NORTH:	355893.059
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/19/2004	44'	Sunny 60's	7.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary G= Groundwater Grab
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1				OL	0	SILT, trace clay and roots; dark brown; damp		
					0.3	1.5		
2	M-1	3.5 87.5%	-	SP		F/C SAND, trace f. gravel, silt and clay; light brown; damp 2.0		
3				MH	1.4	SILT, little clay; greenish-brown; damp		
4	4.0				0.4			
5					NA			
6	M-2	2.0 50.0%	-	MH	0.0	trace f. sand; moist		
7					0.0	7.0		
8	8.0			SM	NA	F. SAND, little silt and clay; grey; wet		
9	M-3	2.0 50.0%	-	SM	0.0			
10					0.0			

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Richard Navatka	BORING NO.:	SWMU 318-GW09 SHEET 1 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Invetigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW09

SAMPLE TYPE
S = Split Spoon A = Auger
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R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11	M-3	2.0 50.0%	-	SM	NA	F. SAND, some silt, trace clay; brown - grey;		
12					NA			
12.0						12.0		
13						No Recovery		
14	G-1	-	12-16	-	-	Groundwater grab for MVOC's		
15								
16						16.0		
16.0								
17					0.0	F. SAND, little silt, trace clay; greenish-grey; wet to soupy wet		
18	M-4	3.1 77.5%	-	SM	0.0			
19					0.0			
20					NA			
20.0								
21					0.0	F. SAND, little silt, trace clay; greenish-grey; wet		
22	M-5	4.0 100.0%	-	SM	0.0			
23					0.0			
24					0.0			
24.0						24.0		
25						No Recovery		
26	G-2	-	24-28	-	-	Groundwater grab for MVOC's and SVOC's SWMU 318-GW09-01		
27								
28						28.0		
28.0								
29	M-6	4.0 100.0%	-	SM	1.4	F. SAND, some clay, greenish-grey; wet		
30					1.4			

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW09 SHEET 2 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Invetigation -CTO -0041

PROJECT NO.: 102200 BORING NO.: SWMU 318-GW09

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31		M-6	4.0 100.0%	-	SM	1.7	F. SAND, some clay; greenish-grey; wet		
32	32.0					1.8			
33						0.0	F. SAND, little silt, trace clay; greenish grey; soupy wet; slight fuel odor		
34		M-7	4.0 100.0%	-	SM	0.0	F. SAND, some clay; greenish-dark grey; wet becoming moist		
35						0.0	35.1		
36	36.0				SP	0.0	F. SAND, trace c. sand and silt and gravel; cream color; damp; slight fuel odor		
37						0.5			
38		M-8	4.0 100.0%	-	SP	0.5	F/C SAND (shells and fossil frags), little f. gravel, silt and clay; cream color; wet		
39						0.5			
40	40.0					0.0	40.0		
41							No Recovery		
42		G-3	-	40-44	-	-	Groundwater grab for MVOC's and SVOC's SWMU 318-GW09-02/02D		
43									
44	44.0						44.0		
45							Termination depth 44'		
46									
47									
48									
49									
50									

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn

DRILLER: Richard Navatka BORING NO.: SWMU 318-GW09 SHEET 3 OF 3

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-GW10
COORDINATES:	EAST: 2467043.456	NORTH:	356018.160
ELEVATION:	SURFACE:	DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/20/2004	44'	Sunny 50's-60's	10.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary G= Groundwater Grab
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1				FI	1.6	SAND & GRAVEL, (subbase)		
					0.0	1.5		
2	M-1	3.8	-	SM		F. SAND, little silt; damp; medium dense, 2.0		
		95.0%		SC	0.2	brown		
3						SAND & CLAY; little silt; damp; medium 2.6		
				CL	0.0	dense dark brown		
4	4.0					CLAY, trace sand; damp; semi-plastic; firm; 4.0		
					NA	brown		
5						F. SAND, little silt; moist, loose; grey		
					NA			
6	M-2	0.1	-	CL				
		2.5%			NA			
7								
					NA			
8	8.0					8.0		
				CL	0.0	CLAY; little sand; moist, plastic; firm; grey 8.5		
9	M-3	3.8	-			with orange staining		
		95.0%		CL	0.0	CLAY & SAND, little silt; plastic; soft; dark grey		
10						10.0		

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	David D. Shilling
DRILLER:	Steve Smith	BORING NO.:	SWMU 318-GW10 SHEET 1 OF 3

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW10

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11	M-3	3.8 95.0%	-	SM	0.6	F. SAND, trace silt; loose; wet; grey		
12 12.0	G-1				0	Groundwater grab for VOA's and SVOC's		
13					0.3			
14	M-4	3.8 95.0%	12-16	SM	1.1			
15					-			
16 16.0					1.2			
17					3.9			
18	M-5	3.2 80.0%	-	SM	5.5			
19					5.7			
20 20.0					NA	sight odor		
21								
22	M-6	1.7 42.5%	-	SM	-			
23								
24 24.0								
						24.3		
25						SILT, some sand, trace clay; loose; wet; olive drab		
26	M-7	2.9 72.5%	24-28	ML	-	Groundwater grab for VOA's SWMU 318-GW10-01		
27	G-2							
28 28.0								
29	A-N	0.0 0.0%	-	ML	-			
30								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: David D. Shilling
DRILLER: Steve Smith BORING NO.: SWMU 318-GW10 SHEET 2 OF 3

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041

PROJECT NO.: 102200 BORING NO.: SWMU 318-GW10

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31	A-N	0.0 0.0%	-	ML	-	SILT, some sand, trace clay; lose, wet, olive drab		
32 / 32.0						32.0		
33	M-8	3.5 87.5%	-	SM	-	F. SAND, some silt, trace clay; loose; wet; brownish grey 32.9 F. SAND, little silt, shell fragments; loose; wet grey		
34								
35								
36 / 36.0						36.8		
37	M-9	3.9 97.5%	-	SM	-	MED. SAND, trace silt, shell fragments; medium dense; wet; grey		
38								
39						39.2		
40 / 40.0						F. SAND, trace silt, shell frags; medium dense; moist; grey 40.0		
41	M-10 G-3	4.0 100.0%	40-44	SM	-	F. SAND, trace silt, trace shell frags; loose; wet; grey Groundwater grab for VOA's SWMU 318-GW10-02		
42								
43						42.7 F. SAND, little silt; medium dense, moist; brownish grey; calcite stringers		
44 / 44.0						44.0		
45						Termination depth 44'		
46								
47								
48								
49								
50								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: David D. Shilling

DRILLER: Steve Smith BORING NO.: SWMU 318-GW10 SHEET 3 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-GW11
COORDINATES: EAST:	2467280.129	NORTH:	355705.895
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/20/2004	44'	Sunny 50s-60's	8.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary G= Groundwater Grab
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1					FI	NA	CONCRETE 0.5		
					SP		F/C SAND, little gravel, trace silt and clay; gre		
2		M-1	2.9	-		1.6	damp 1.5		
			72.5%				SILT, trace clay; dark brown; damp		
3						0.5			
					MH				
4	4.0					0.8			
5						NA			
						0.0	some clay; dark brown; moist		
6		M-2	2.0	-	MH				
			50.0%			0.0			
7							7.0		
8	8.0				CL	NA	CLAY, trace silt; yellow-brown and grey mottled; moist 8.0		
9		M-3	3.5	-		1.0	F. SAND, some silt, little clay; dark grey; wet; water at 8.0'		
			87.5%		SM	2.1			
10									

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Richard Navatka	BORING NO.:	SWMU 318-GW11 SHEET 1 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041

PROJECT NO.: 102200 BORING NO.: SWMU 318-GW11

SAMPLE TYPE
S = Split Spoon A = Auger
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D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11	M-3	3.5 87.5%	-	SM	0.9	F. SAND, some silt, little clay; dark grey; wet		
12 12.0					NA	little silt,trace clay; grey; wet-soupy 12.0		
13	G-1	-	12-16	-	-	No Recovery		
14						Groundwater grab for MVOC's SWMU 318-GW11		
15								
16 16.0						16.0		
17	M-4	3.0 75.0%	-	SM	0.0	F. SAND, little silt with zones of some silt, trace clay; grey; wet to soupy wet		
18					0.0			
19					0.0			
20 20.0					NA			
21	M-5	3.4 85.0%	-	SM	0.0	F. SAND, little silt, trace clay; grey; wet		
22					0.0			
23					0.0			
24 24.0					NA	24.0		
25	G-2	-	24-28	-	-	No Recovery		
26						Groundwater grab for MVOC's and SVOC's SWMU 318-GW11-01		
27								
28 28.0						28.0		
29	M-6	3.9 97.5%	-	SM	0.0	F. SAND, little silt and clay; greenish-grey; moist to wet		
30					0.0			

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn

DRILLER: Richard Navatka BORING NO.: SWMU 318-GW11 SHEET 2 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW11

SAMPLE TYPE
S = Split Spoon A = Auger
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D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31	M-6	3.9 97.5%	-	SM	0.0	F. SAND, some silt and clay; greenish-grey; moist		
32 32.0					0.0			
33	M-7	3.9 97.5%	-	SM	0.0	little silt and clay		
34					0.0	some silt and clay with occasional cream colored stringers; green; moist 34.7		
35					0.0	F/C SAND, little fossil frag and silt, trace clay;		
36 36.0				SP	0.0	light grey; moist to wet		
37	M-8	3.7 92.5%	-	SP	0.0	zone of f. sand		
38					0.0	some silt and clay, little f. gravel; light grey		
39					0.0	becoming tan; wet		
40 40.0					0.0	F. SAND, little silt, trace f. gravel and clay; tan moist 40.0		
41	G-3	-	40-44	-	-	No Recovery		
42						Groundwater grab for MVOC's SWMU 318-GW11-02/02D		
43								
44 44.0						44.0		
45						Termination depth 44'		
46								
47								
48								
49								
50								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW11 SHEET 3 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-GW12
COORDINATES:	EAST: 2467402.401	NORTH:	355827.164
ELEVATION:	SURFACE:	DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/20/2004	44'	Sunny 50s-60's	9.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary G= Groundwater Grab
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1				FI	0.0	ASPHALT 0.2		
						F. SAND, little silt and gravel, trace clay; dark		
2					0.0	brown; damp		
	M-1	3.4	-	SM		little silt, trace clay; yellow-brown and brown		
3		85.0%			0.0	layering		
						SILT, trace f. sand; dark brown with rusty laminae;		
4					NA	damp (3.4'-3.8')		
	4.0					greenish-brown f. sand 4.0		
5					0.0	CLAY, trace silt; yellow-brown and grey, mottled		
						damp		
6					0.0			
	M-2	2.2	-	CL				
7		55.0%			NA			
8					NA	moist at 7.5'		
	8.0							
9					0.0			
	M-3	2.5	-			water at 9.0'		
10		62.5%		CL	0.0	10.0		

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Richard Navatka	BORING NO.:	SWMU 318-GW12 SHEET 1 OF 3

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW12

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11	M-3	2.5 62.5%	-	SM	NA NA	F. SAND, little silt, trace rounded f. gravel and clay; grey; wet		
12 12.0						12.0		
13						No Recovery		
14	G-1	-	12-16	-	-	Groundwater grab for MVOC's SWMU 318-GW12		
15								
16 16.0						16.0		
17					0.5	F. SAND, little silt, trace clay; greenish-grey; wet to soupy wet		
18	M-4	3.2 80.0%	-	SM	0.0			
19					0.0			
20 20.0					NA			
21					0.0	F. SAND, little silt, trace clay; greenish-grey; wet		
22	M-5	3.2 80.0%	-	SM	0.0			
23					0.0			
24 24.0					NA	24.0		
25						No Recovery		
26	G-2	-	24-28	-	-	Groundwater grab for MVOC's and SVOC's SWMU 318-GW12-01		
27								
28 28.0						28.0		
29	M-6	2.4 60.0%	-	SM	NA 0.0	F. SAND, some silt and clay; dark green; moist		
30								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW12 SHEET 2 OF 3

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW12

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31	M-6	2.4 60.0%	-	SM	0.0	F. SAND, some silt and clay; dark green; moist		
32					0.0			
32.0						32.0		
33	M-7	3.8 95.0%	-	SP	0.0	F/C SAND (fossils and shells), little silt, trace clay and f. gravel; light grey; wet		
34					0.0	little silt and clay, trace fine gravel; tan		
35					0.0			
36					0.0			
36.0								
37	M-8	4.0 100.0%	-	SP	0.0	F. SAND, some silt, trace f. gravel and clay; tan; soupy wet		
38					0.0			
39					0.0	little silt; tan nearly wet		
40					0.0			
40.0						40.0		
41	G-3	-	40-44	-	-	No Recovery		
42						Groundwater grab for MVOC's SWMU 318-GW12-02		
43								
44						44.0		
44.0								
45						Termination depth 44'		
46								
47								
48								
49								
50								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW12 SHEET 3 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Invetigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-GW13
COORDINATES: EAST:	2467333.604	NORTH:	356030.056
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/20/2004	40'	Sunny 50'S-60's	5.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary G= Groundwater Grab
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1	M-1	3.2 80.0%	-	SM	1.6	F. SAND, trace silt; loose; moist; brown (1.1)		
2				SP	0.0	SAND & GRAVEL; damp; grey (1.3)		
3					0.2	F. SAND, trace silt; loose; damp; black; creasote odor (1.6)		
4				CL	0.0	SAND & GRAVEL; damp; grey (3.2) CLAY, trace sand; semi-plastic; firm; moist; brown		
4.0								
5	M-2	1.3 32.5%	-	CL	NA	CLAY, trace sand; semi-plastic; firm; moist; grey (4.9)		
6					NA	F. SAND, trace silt; loose; wet; grey		
7				SM	NA			
8					NA			
8.0								
9	M-3	3.1 77.5%	-	SM	0.0			
10					0.0			

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	David D. Shilling
DRILLER:	Steve Smith	BORING NO.:	SWMU 318-GW13 SHEET 1 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Invetigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW13

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11	M-3	3.1 77.5%	-	SM	0.6	F. SAND, trace silt; loose; wet; grey		
12 12.0					0	12.0		
13	G-1	-	12-16	-	0.3			
14					1.1	Groundwater grab for VOA's and SVOC's SWMU 318-GW13		
15					-			
16 16.0					1.2	16.0		
17	M-4	3.8 95.0%	-	SM	3.9			
18					5.5			
19					5.7			
20 20.0					NA	20.0		
21	M-5	3.9 97.5%	-	ML	-	SILT, little sand; loose; wet; grey 20.8		
22				SM		F. SAND, some silt; loose; wet; grey 22.4		
23						F. SAND, trace silt; loose; wet; grey		
24 24.0						24.0		
25	G-2	-	24-28	-	-			
26						Groundwater grab for VOA's SWMU 318-GW13-01		
27								
28 28.0						28.0		
29	M-6	2.7 67.5%	-	ML		SILT, little sand; loose; wet; olive drab 28.6		
30				SM	-	F. SAND, little silt, shell fragments; medium dense; wet; light grey		

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: David D. Shilling
DRILLER: Steve Smith BORING NO.: SWMU 318-GW13 SHEET 2 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Invetigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW13

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31		M-6	2.7 67.5%	-	SM	-	F. SAND, little silt, shell fragments; medium dense; wet; light grey		
32	32.0						32.0		
33							M. SAND, little silt, shell fragments; dense wet; light grey		
34		M-7	3.8 95.0%	-	SM	-			
35									
36	36.0						35.8		
37									
38		A-N	-	-	-	-			
39									
40	40.0						40.0		
41									
42		G-3	-	40-44	-	-	Groundwater grab for VOA's SWMU 318-GW13-02		
43									
44	44.0						44.0		
45							Termination depth 44'		
46									
47									
48									
49									
50									

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: David D. Shilling
DRILLER: Steve Smith BORING NO.: SWMU 318-GW13 SHEET 3 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-GW14
COORDINATES:	EAST: 2467295.137	NORTH:	355863.395
ELEVATION:	SURFACE:	DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/20/2004	40'	Sunny 50'S-60's	5.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary G= Groundwater Grab
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1	M-1	4.0 100.0%	-	SM		F. SAND, little silt, grass, roots; loose; moist; brown (0.3)		
2						F. SAND, little clay medium dense; damp dark brown (1.8)		
3				CL		CLAY, little sand; firm; non-plastic; damp; dark brown (3.5)		
4	4.0					CLAY, little sand; firm; non-plastic; damp; black; burnt debis (4.0)		
5	M-2	4.0 100.0%	-	CL		CLAY, little sand; firm; non-plastic; moist; dark grey (6.0)		
6						CLAY, some sand; firm; semi-plastic; moist dark brownish grey (6.7)		
7				SC		F. SAND, little clay, roots; plastic; wet; (7.2)		
8	8.0			CL		dark brown (8.0)		
9	M-3	2.5 62.5%	-	SM		CLAY, little sand, wood debris; soft; plastic wet; grey		
10						F. SAND, little silt; loose; wet; grey		

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	David D. Shilling
DRILLER:	Steve Smith	BORING NO.:	SWMU 318-GW14 SHEET 1 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW14

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11	M-3	2.5 62.5%	-	SM		F. SAND, little silt; loose; wet; grey		
12 12.0								
13	M-4	3.7 92.5%	-	SM				
14								
15	G-1	-	12-16		-	Groundwater grab for VOA SWMU 318-GW14		
16 16.0								
17	M-5	4.0 100.0%	-	SM	9.0	slight Creosote odor		
18								
19								
20 20.0								
21	M-6	2.9 72.5%	-	SM	10.9	slight Creosote odor		
22								
23								
24 24.0						24.0		
25	M-7	4.0 100.0%		ML	6.5	SILT, some sand; loose; wet; olive green; (Bell-grade); odor		
26						26.0		
27	G-2	-	26-30	-	-	Groundwater grab for VOA's and SVOC's SWMU 318-GW13-01/MS/MSD		
28 28.0								
29	M-8	3.6 90.0%	-	ML	30.1			
30						30.0		

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: David D. Shilling
DRILLER: Steve Smith BORING NO.: SWMU 318-GW14 SHEET 2 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041

PROJECT NO.: 102200 BORING NO.: SWMU 318-GW14

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31	M-8	3.6 90.0%	-	CL	30.1	CLAY, some fine sand; firm; moist; olive drab 31.0		
32 32.0				SM		F-M SAND, trace silt, shell fragments; medium densewet; light grey		
33						Termination depth 32'		
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: David D. Shilling

DRILLER: Steve Smith BORING NO.: SWMU 318-GW14 SHEET 3 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	BORING NAME:	SWMU 318-GW15
COORDINATES: EAST:	2467038.145	NORTH:	355828.110
ELEVATION: SURFACE:		DIAMETER: (inches)	2

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2 in.				3/22/2004	44'	Sunny 40s-50s	8.0'
Length	4 ft.							
Type	Stainless							
Hammer Wt.								
Fall								

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary G= Groundwater Grab
D = Denison P = Piston
N = No Sample M = Macro

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
1					FI	2.3	ASPHALT, gravel subbase 0.75		
2		M-1	2.5 62.5%	-		0.0	F. SAND, little silt trace clay; brown; damp interbedded with clay, trace silt; brown with bl:		
3					SM	0.0	laminae		
4	4.0				CL	NA	3.5 CLAY, trace silt; grey and orange-brown, mottled;		
5						NA	damp		
6		M-2	1.8 45.0%	-	CL	0.0			
7						0.0	little f. sand; dark grey		
8	8.0					NA	some f. sand, dark grey wet at 8.0' 8.0		
9		M-3	2.9 72.5%	-	SM	0.0	F. SAND, trace silt; grey; wet		
10						0.0	little silt fuel odor (moth balls)		

DRILLING CO.:	PARRATT WOLFF INC	BAKER REP.:	Mark DeJohn
DRILLER:	Richard Navatka	BORING NO.:	SWMU 318-GW15 SHEET 1 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-GW15

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
11	M-3	2.9 72.5%	-	SM	1.1	F. SAND, little silt, grey; wet		
12 12.0					NA	little silt,trace clay; grey; wet-soupy 12.0		
13						No Recovery		
14	G-1	-	12-16	-	-	Groundwater grab for MVOC's and SVOC's SWMU 318-GW15		
15								
16 16.0						16.0		
17					0.6	F. SAND, little silt, trace clay; grey; wet to soupy wet; strong naptha odor		
18	M-4	3.7 92.5%	-	SM	1.1 1.4			
19								
20 20.0					2.6			
21					1.2	F. SAND, little silt, trace clay; grey; wet; strong naptha odor		
22	M-5	3.5 87.5%	-	SM	4.6 4.8			
23								
24 24.0					1.4	24.0		
25						No Recovery		
26	G-2	-	24-28	-	-	SWMU 318-GW15-01		
27								
28 28.0						28.0		
29	M-6	2.7 67.5%	-	SM	1.3 2.2			
30						soupy wet		

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn
DRILLER: Richard Navatka BORING NO.: SWMU 318-GW15 SHEET 2 OF 3

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041

PROJECT NO.: 102200 BORING NO.: SWMU 318-GW15

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	Sample Interval	USCS CODES	PID (ppm) ps/bg	Visual Description	Bore Detail	Elevation (Ft. MSL)
31	M-6	2.7 67.5%	-	SM	2.7	F. SAND, some silt, trace clay; grey; soupy wet		
31.0						31.0		
32				CL	NA	F. SAND, some silt and clay; greenish-grey; wet		
32.0								
33					NA			
34	DPT-N					Direct push - No Sample		
35								
36								
36.0								
37								
38	DPT-N					Direct push - No Sample		
39								
40								
40.0						40.0		
41						No Recovery		
42	G-3	-	40-44	-	-	Groundwater grab for MVOC's SWMU 318-GW15-02		
43								
44						44.0		
44.0						Termination depth 44'		
45								
46								
47								
48								
49								
50								

DRILLING CO.: PARRATT WOLFF INC BAKER REP.: Mark DeJohn

DRILLER: Richard Navatka BORING NO.: SWMU 318-GW15 SHEET 3 OF 3

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318
PROJ. NO.: CTO-0191 BORING NO.: SWMU318-SB17
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: 15.00

Rig: Geoprobe 5410	Macro Core	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1.5-in	--	--	--	6/24/04	0.0 - 28.0	Cloudy, low 80s	9.0
Length	4.0-ft	--	--	--				
Type	Stainless	--	--	--				
Hammer Wt.	--	--	--	--				
Fall	--	--	--	--				

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description		Elevation (Ft. MSL)
1				FI		0/0	ASPHALT, f sand and gravel sub base	1.0	14.00
2		S-1	3.5	SC		0/0	CLAY and F SAND layers; yellow-brn; damp	2.0	13.00
3			88%	CL		0/0	SILT, some clay; brown-gray & yellow-brown, trace black mottles; damp		
4	4.0					--		4.0	11.00
5						0/0	CLAY, trace silt; gray-brown & yellow-brown; mottled; damp		
6		S-2	3.3	CL		0/0			
7			83%			0/0			
8	8.0					--	some silt; gray; moist		
9						--			
10		S-3	2.2	CL		0/0	trace silt; gary; wet		
			55%			0/0	Match to Sheet 2		

DRILLING CO.: Vironex BAKER REP.: Mark DeJohn
DRILLER: Corey BORING NO.: SB17 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318
CTO NO.: CTO-0191 BORING NO.: SWMU318-SB17

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
11						Continued from Sheet 1	
12					--		
12.0			SM			F SAND, little silt, trace clay; gray; wet	11.5 3.50
13					0/0		
14	S-4	3.3 83%	SW	--	0/0	trace silt; light green-gray; wet	
15					0/0		
16					--		
16.0							
17					--		
18	S-5	2.4 60%	SW	--	0/0		
19					0/0		
20					--		
20.0							
21					--	trace silt; gray; wet	
22	S-6	2.5 63%	SW	--	0/0		
23					0/0		
24					--	green-gray	
24.0							24.0 -9.00
25						F SAND, some silt, trace to little clay; olive drab; moist	
26	S-7	4.0 100%	SM	--	0/0		
27							
28							
28.0							28.0 -13.00
29						BOH at 28.0-feet	
30							

DRILLING COMPANY: Vironex BAKER REP.: Mark DeJohn
DRILLER: Corey BORING NO.: SB17 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318
PROJ. NO.: CTO-0191 BORING NO.: SWMU318-SB18
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: 15.00

Rig: Geoprobe 5410	Macro Core	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1.5-in	--	--	--	6/25/04	0.0 - 28.0	M summy, low 80s	7.0
Length	4.0-ft	--	--	--				
Type	Stainless	--	--	--				
Hammer Wt.	--	--	--	--				
Fall	--	--	--	--				

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
1				FI		.1/.1	ASPHALT, f/c sand sub base	
							1.0	14.00
				CL		.1/.1	CLAY, some silt; black; damp; sl fuel odor	
2		S-1	2.8					
			70%			.1/.1		
3								
						--	trace silt; dark gray; moist	
4	4.0							
						--		
5								
						.1/.1		
6		S-2	1.7	CL				
			43%			.1/.1	zones of little silt; gray	
7								
						--	wet	
8	8.0						7.9	7.10
				SM		--	F SAND, some silt, trace clay; gray; wet	
9								
						.1/.1		
10		S-3	3.5	SW			trace silt; gray; wet; sl fuel/solvent odor	
			88%			.5/.1	Match to Sheet 2	

DRILLING CO.: Vironex BAKER REP.: Mark DeJohn
DRILLER: Corey BORING NO.: SB18 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318
CTO NO.: CTO-0191 BORING NO.: SWMU318-SB18

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
11						Continued from Sheet 1	
12 12.0					2./.1		
13					0/0		
14	S-4	3.5 88%	SW	--	0/0	trace silt & clay; gray; wet; sl fuel/solvent odor	
15					0/0		
16 16.0					0/0		
17					--		
18	S-5	2.7 68%	SW	--	.7/.1		
19					.2/.1		
20 20.0					.4/.1		
21					0/0		
22	S-6	1.2 30%	SW	--	0/0		
23					0/0		
24 24.0					--	24.0	-9.00
25						F SAND, some silt, trace clay; olive drab; wet	
26	S-7	3.8 95%	SM	--	--		
27							
28 28.0						some silt, little clay & f gravel (fossil frag); olive drab; wet 28.0	-13.00
29						BOH at 28.0-feet	
30							

DRILLING COMPANY: Vironex BAKER REP.: Mark DeJohn
DRILLER: Corey BORING NO.: SB18 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318
PROJ. NO.: CTO-0191 BORING NO.: SWMU318-SB20
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: 15.00

Rig: Geoprobe 5410	Macro Core	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1.5-in	--	--	--	6/24/04	0.0 - 28.0	Cloudy, low 80s	7.0
Length	4.0-ft	--	--	--				
Type	Stainless	--	--	--				
Hammer Wt.	--	--	--	--				
Fall	--	--	--	--				

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
1				FI		0/0	ASPHALT and f sand, some gravel sub base	
							1.0	14.00
				SC		0/0	F SAND, trace silt; brown; damp	
2		S-1	3.3					
			83%			0/0	little silt; gray; damp	
3							2.8	12.20
4	4.0						CLAY, trace silt; gray-brown, trace yellow-brown mottles; damp	
5							moist	
						0/0		
6		S-2	2.1	CL				
			53%			0/0		
7							wet	
							some f sand 7.5	7.50
8	8.0							
						0/0	F SAND, trace silt & clay; green-gray;	
9							wet	
						0/0		
10		S-3	2.8	SW				
			70%			0/0	Match to Sheet 2	

DRILLING CO.: Vironex BAKER REP.: Mark DeJohn
DRILLER: Corey BORING NO.: SB20 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318
CTO NO.: CTO-0191 BORING NO.: SWMU318-SB20

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
11						Continued from Sheet 1	
12 12.0							
13					0/0		
14	S-4	2.5 63%	SW	--	0/0		
15					0/0		
16 16.0							
17					0/0		
18	S-5	2.4 60%	SW	--	0/0		
19					0/0		
20 20.0							
21							
22	S-4	1.1 28%	SW	--	--		
23						dark green-gray	
24 24.0						24.0	-9.00
25					0/0	F SAND, some silt, little clay, trace f gravel; dark green-gray; moist	
26	S-4	4 100%	SM	--	0/0	wet	
27					0/0		
28 28.0					0/0	27.3 F SAND, little silt, trace f gravel; tan; moist 28.0	-12.30 -13.00
29						BOH at 28.0-feet	
30							

DRILLING COMPANY: Vironex BAKER REP.: Mark DeJohn
DRILLER: Corey BORING NO.: SB20 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318
PROJ. NO.: CTO-0191 BORING NO.: SWMU318-SB25
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: 15.00

Rig: Geoprobe 5410	Macro Core	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1.5-in	--	--	--	6/25/04	0.0 - 32.0	M sunny, low 80s	7.5
Length	4.0-ft	--	--	--				
Type	Stainless	--	--	--				
Hammer Wt.	--	--	--	--				
Fall	--	--	--	--				

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description		Elevation (Ft. MSL)
1				FI		0/0	ASPHALT		
							F SAND, little f/c gravel, trace silt & clay; yellow-gray, dark gray, & gray layers; damp (FILL)	1.0	14.00
2		S-1	3.2			0/0			
			80%						
3						0/0			
4	4.0					--			
5						0/0			
						0/0			
6		S-2	3.3	FI			wet zone	6.0	9.00
			83%	CL		0/0	CLAY, trace silt; dark gray, gray, and yellow-brown, mottled; moist		
7									
						--			
8	8.0						wet		
9				CL		--		9.0	6.00
				SM		0/0	F SAND some silt, trace clay; dark gray; wet		
10		S-3	2.3						
			58%			0/0	Match to Sheet 2		

DRILLING CO.: Vironex BAKER REP.: Mark DeJohn
DRILLER: Corey BORING NO.: SB25 SHEET 1 OF 3

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318
CTO NO.: CTO-0191 BORING NO.: SWMU318-SB25

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
11							Continued from Sheet 1	
					--			
12	12.0			SW			F SAND, trace silt; gray; wet	
13						0/0		
						0/0		
14		S-4	2.9	SW	--			
			73%			0/0		
15								
						--	gray, trace green-gray zones; wet	
16	16.0							
						--		
17								
						0/0	little silt; gray; wet	
18		S-5	2.0	SW	--			
			50%			0/0		
19								
						--		
20	20.0							
						--		
21								
						0/0		
22		S-6	1.7	SW	--			
			43%			0/0		
23								
						--		
24	24.0							
							some silt, little clay; wet	
25								
26		S-7	0.5	SM	--	0/0		
			13%					
27								
28	28.0						28.0	-13.00
							F SAND, some silt and clay;	
29							olive drab; wet	
		S-8	0.5	SM	--	0/0		
30			13%					
							Continued on Sheet 3	

DRILLING COMPANY: Vironex BAKER REP.: Mark DeJohn
DRILLER: Corey BORING NO.: SB25 SHEET 2 OF 3

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318

CTO NO.: CTO-0191 BORING NO.: SWMU318-SB25

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
31						Continued from Sheet 1	
32	32.0					32.0	15.00
33						BOH at 32.0-feet	
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							

DRILLING COMPANY: Vironex BAKER REP.: Mark DeJohn

DRILLER: Corey BORING NO.: SB25 SHEET 3 OF 3

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318
PROJ. NO.: CTO-0191 BORING NO.: SWMU318-SB27A
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: 15.00

Rig: Geoprobe 5410	Macro Core	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1.5-in	--	--	--	6/25/04	0.0 - 28.0	M summy, low 80s	8.0
Length	4.0-ft	--	--	--				
Type	Stainless	--	--	--				
Hammer Wt.	--	--	--	--				
Fall	--	--	--	--				

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description		Elevation (Ft. MSL)
1						0/0	SILT, trace f sand; dark brown; damp		
				MH		0/0		1.5	13.50
2		S-1	3.2	SM			F SAND, little silt, trace clay; gray &		
			80%			0/0	gray-brown layers; damp		
3									
						--			
4	4.0								
						0/0			
5									
						0/0			
6		S-2	2.9						
			73%			0/0			
7									
						--	wet		
8	8.0							7.9	7.10
						--	CLAY, some f sand; dark gray & yellow-		
9							brwon; moist; zones of F SAND, some silt,		
						0/0	little clay; dk gray-brown; moist		
10		S-3	1.7	SC					
			43%			0/0	Match to Sheet 2		

DRILLING CO.: Vironex BAKER REP.: Mark DeJohn
DRILLER: Corey BORING NO.: SB27A SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318
CTO NO.: CTO-0191 BORING NO.: SWMU318-SB27A

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
11						Continued from Sheet 1	
12					--		
12.0							
13					0/0		
14	S-4	4.0		--	0/0	wet	
15		100%	SC		0/0		
14.6			SW				0.40
16					0/0	F SAND, trace silt & clay; lt green-gray; wet	
16.0							
17					0/0		
17			SM			little silt, trace clay; lt green-gray; wet	
18	S-5	2.7		--	0/0		
19		68%			1.2/0	slight "sewer" odor	
20					--		
20.0							
21					0/0		
21						some silt, trace clay; green-gray; wet	
22	S-6	2.9	SM	--	0/0		
23		73%			0/0		
23.0							-8.00
24					--	F SAND, some silt, little clay; lt green; moist	
24.0							
25						olive drab; moist	
26	S-7	3.8	SM	--	--		
27		95%					
27.8						F/C SAND (shell frag), trace clay;	-12.80
28						gray; wet	
28.0							-13.00
29						BOH at 28.0-feet	
30							

DRILLING COMPANY: Vironex BAKER REP.: Mark DeJohn
DRILLER: Corey BORING NO.: SB27A SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318
PROJ. NO.: CTO-0191 BORING NO.: SWMU318-SB30
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: 15.00

Rig: Geoprobe 5410	Macro Core	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1.5-in	--	--	--	6/25/04	0.0 - 28.0	M summy, low 80s	6.4
Length	4.0-ft	--	--	--				
Type	Stainless	--	--	--				
Hammer Wt.	--	--	--	--				
Fall	--	--	--	--				

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description		Elevation (Ft. MSL)
1				FI		0/0	ASPHALT, f sand & f/c gravel sub base	0.7	14.30
				CL		0/0	SILT, trace f sand; yellow-brown; damp	1.5	13.50
2		S-1	3.6						
			90%			0/0	CLAY, some silt; gray & orange-brown,		
3							mottled; damp		
						0/0			
4	4.0								
						0/0			
5									
						0/0			
6		S-2	3.5				SILT, some clay; yellow-brown; wet		
			88%	CL		0/0		6.4	8.60
7				SM			F SAND, little silt; tan; wet		
				SW		0/0	trace silt; gray; wet		
8	8.0								
						0/0			
9									
						0/0			
10		S-3	4.0	SW					
			100%			0/0	Match to Sheet 2		

DRILLING CO.: Vironex BAKER REP.: Mark DeJohn
DRILLER: Corey BORING NO.: SB30 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Characterization at Site 86/SWMU 318
CTO NO.: CTO-0191 BORING NO.: SWMU318-SB30

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	USCS Code	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
11						Continued from Sheet 1	
12					0/0		
12.0							
13					0/0		
14	S-4	4.0		--	0/0		
15		100%	SC SW		0/0		
16							
16.0							
17							
18	D-N	--	--	--	--		
19							
20							
20.0							
21							
22	S-6	1.6	SW	--	0/0		
23		40%					
24					--		
24.0							-9.00
25						F SAND, some silt, little clay; olive drab; moist	
26	S-7	2.4	SM	--	.1/.1		
27		60%					
27.0							-12.00
28						little silt, trace clay; tan; wet	
28.0							-13.00
29						BOH at 28.0-feet	
30							

DRILLING COMPANY: Vironex BAKER REP.: Mark DeJohn
DRILLER: Corey BORING NO.: SB30 SHEET 2 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	Well Name:	SWMU 318-MW01
COORDINATES: EAST:	2467136.330	NORTH:	355698.696
ELEVATION: SURFACE:	17.80	TOP OF PVC CASING:	17.53

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)			6.25 in.		3/30/2004	30		7.5
Length			5 ft.					
Type			HAS					
Hammer Wt.								
Fall								

Remarks: Lithology was used from 318 - GW08

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Description	Type	Diam. (in)	Top Depth (Ft.)	Bottom Depth (Ft.)
Well Casing	PVC, Schedule 40	2 inches	0.27	20
Well Screen	PVC, Schedule 40, 0.010 slot	2.0" OD	20	30

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	USCS CODES	PID (ppm) ps/bg	Visual Description	Well Detail	Bore Detail	Elevation (Ft. MSL)
1				FI	NA	CONCRETE			
2	M-1		-		13.1	GRAVEL, subbase			
3				MH	0.0	SILT, little clay,trace fine sand; dark brown and slightly yellow staining; damp			
4	4.0				0.0				
5				CL	0.0	CLAY; trace silt; grey and yellow brown; damp			
6	M-2	2.7 67.5%	-	MH	0.0	SILT, little clay; grey; moist			
7					0				
8	8.0			SM	NA	F. SAND, some silt, trace clay; brown - grey; wet at 7.5'			
9	M-3	3.1 77.5%	-	SM	NA 0.3	LITTLE SILT, trace clay; light green - grey; wet			
10									

DRILLING CO.:	Parratt Wolff	BAKER REP.:	David D. Schilling
DRILLER:	Steve Smith	BORING NO.:	SWMU 318-MW01 SHEET 1 OF 2

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-MW01

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	USCS CODES	PID (ppm) ps/bg	Visual Description	Well Detail	Bore Detail	Elevation (Ft. MSL)
11	M-3	3.1 77.5%	-	SM	0.0 NA	F. SAND, some silt, trace clay; brown - grey;			
12 – 12.0									
13	G-1	-	12-16	-	-	No Recovery Groundwater grab for MVOC's			
14									
15									
16 – 16.0									
17	M-4	3.1 77.5%	-	SM	0.0 0.0 0.0 NA	F. SAND, little silt, trace clay; grey; wet			
18									
19									
20 – 20.0									
21	M-5	2.7 67.5%	-	SM	0.0 0.0 0.0 0.0	F. SAND, little silt, trace clay; grey; wet			
22									
23									
24 – 24.0									
25	G-2	-	24-28	-	-	No Recovery Groundwater grab for MVOC's and SVOC's SWMU 318-GW08-01			
26									
27									
28 – 28.0									
29	M-6	2.5 62.5%	-	SM	0.0 0.0	SOME SILT, trace clay; grey; wet			
30									

DRILLING CO.: Parratt Wolff BAKER REP.: David D. Schilling
DRILLER: Steve Smith BORING NO.: SWMU 318-MW01 SHEET 2 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	Well Name:	SWMU 318-MW02
COORDINATES:	EAST: 2467294.882	NORTH:	355875.719
ELEVATION:	SURFACE: 17.80	TOP OF PVC CASING:	17.43

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)			6.25 in.		3/31/2004	30		6.9
Length			5 ft.					
Type			HAS					
Hammer Wt.								
Fall								

Remarks: Lithology was used from 318 - GW14

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Description	Type	Diam. (in)	Top Depth (Ft.)	Bottom Depth (Ft.)
Well Casing	PVC, Schedule 40	2 inches	0.37	20
Well Screen	PVC, Schedule 40, 0.010 slot	2.0" OD	20	30

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT	USCS CODES	PID (ppm) ps/bg	Visual Description	Well Detail	Bore Detail	Elevation (Ft. MSL)
1					SM		F. SAND, little silt, grass, roots; loose; moist; brown			
2		M-1	4.0 100.0%	-			F. SAND, little clay medium dense; damp dark brown			
3					CL		CLAY, little sand; firm; non-plastic; damp; dark brown			
4	4.0						CLAY, little sand; firm; non-plastic; damp; black; burnt debis			
5					CL		CLAY, little sand; firm; non-plastic; moist; dark grey			
6		M-2	4.0 100.0%	-						
7					SC		CLAY, some sand; firm; semi-plastic; moist dark brownish grey			
8	8.0				CL		F. SAND, little clay, roots; plastic; wet; dark brown			
9		M-3	2.5 62.5%	-	SM		CLAY, little sand, wood debris; soft; plastic wet; grey			
10							F. SAND, little silt; loose; wet; grey			

DRILLING CO.:	Parratt Wolff	BAKER REP.:	David D. Schilling
DRILLER:	Steve Smith	BORING NO.:	SWMU 318-MW02 SHEET 1 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-MW02

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	USCS CODES	PID (ppm) ps/bg	Visual Description	Well Detail	Bore Detail	Elevation (Ft. MSL)
11	M-3	2.5 62.5%	-	SM		F. SAND, little silt; loose; wet; grey			
12 / 12.0									
13									
14	M-4	3.7 92.5%	-	SM					
15	G-1	-	12-16		-	Groundwater grab for VOA SWMU 318-GW14			
16 / 16.0									
17									
18	M-5	4.0 100.0%	-	SM	9.0	slight Creosote odor			
19									
20 / 20.0									
21									
22	M-6	2.9 72.5%	-	SM	10.9	slight Creosote odor			
23									
24 / 24.0									
25						SILT, some sand; loose; wet; olive green; (Bell-grade); odor			
26	M-7	4.0 100.0%		ML	6.5				
27									
28 / 28.0	G-2	-	26-30	-	-	Groundwater grab for VOA's and SVOC's SWMU 318-GW13-01/MS/MSD			
29	M-8	3.6 90.0%	-	ML	30.1				
30									

DRILLING CO.: Parratt Wolff BAKER REP.: David D. Schilling
DRILLER: Steve Smith BORING NO.: SWMU 318-MW02 SHEET 2 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	RCRA Facility Investigation -CTO -0041		
PROJECT NO.:	102200	Well Name:	SWMU 318-MW03
COORDINATES: EAST:	2467048.061	NORTH:	356008.871
ELEVATION: SURFACE:	17.90	TOP OF PVC CASING:	17.57

Rig: INGERSOL RAND 300	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)			6.25 in.		3/21/2004	30		10.0'
Length			5 ft.					
Type			HAS					
Hammer Wt.								
Fall								

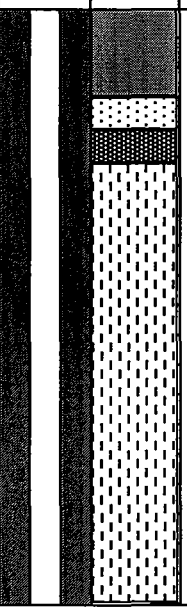
Remarks: Lithology was used from 318 - GW10

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Description	Type	Diam. (in)	Top Depth (Ft.)	Bottom Depth (Ft.)
Well Casing	PVC, Schedule 40	2 inches	0.33	20
Well Screen	PVC, Schedule 40, 0.010 slot	2.0" OD	20	30

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	USCS CODES	PID (ppm) ps/bg	Visual Description	Well Detail	Bore Detail	Elevation (Ft. MSL)
1				FI	1.6	SAND & GRAVEL, (subbase)			
2	M-1	3.8	-	SM	0.0	F. SAND, little silt; damp; medium dense,			
3		95.0%		SC	0.2	brown			
4	4.0			CL	0.0	SAND & CLAY; little silt; damp; medium dense dark brown			
5					NA	CLAY, trace sand; damp; semi-plastic; firm; brown			
6	M-2	0.1	-	CL	NA	F. SAND, little silt; moist, loose; grey			
7		2.5%			NA				
8	8.0				NA				
9	M-3	3.8	-	CL	0.0	CLAY; little sand; moist, plastic; firm; grey with orange staining			
10		95.0%		CL	0.0	CLAY & SAND, little silt; plastic; soft; dark grey			



DRILLING CO.:	Parratt Wolff	BAKER REP.:	David D. Schilling
DRILLER:	Steve Smith	BORING NO.:	SWMU 318-MW03 SHEET 1 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RCRA Facility Investigation -CTO -0041
PROJECT NO.: 102200 BORING NO.: SWMU 318-MW03

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	USCS CODES	PID (ppm) ps/bg	Visual Description	Well Detail	Bore Detail	Elevation (Ft. MSL)
11	M-3	3.8 95.0%	-	SM	0.6	F. SAND, trace silt; loose; wet; grey			
12 12.0	G-1				0	Groundwater grab for VOA's and SVOC's			
13					0.3				
14	M-4	3.8 95.0%	12-16	SM	1.1				
15					-				
16 16.0					1.2				
17					3.9				
18	M-5	3.2 80.0%	-	SM	5.5				
19					5.7				
20 20.0					NA	sight odor			
21									
22	M-6	1.7 42.5%	-	SM	-				
23									
24 24.0									
25						SILT, some sand, trace clay; loose; wet; olive drab			
26	M-7 G-2	2.9 72.5%	24-28	ML	-	Groundwater grab for VOA's SWMU 318-GW10-01			
27									
28 28.0									
29	A-N	0.0 0.0%	-	ML	-				
30									

DRILLING CO.: Parratt Wolff BAKER REP.: David D. Schilling
DRILLER: Steve Smith BORING NO.: SWMU 318-MW03 SHEET 2 OF 2

Baker

Michael Baker Jr., Inc.

APPENDIX A

Boring Logs 2005

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-SB14
SHEET 1 **OF** 1
DATE: START 2/5/2005
END 2/5/2005
O.G. ELEV. 17.408225

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355793.9014 **EAST:** 2467037.877
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 8.0 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			3.5	88				ASPHALT 0.2	EL. 17.3
1					2.5			SAND and GRAVEL (subbase) 1.4	EL. 16.0
2	DP-1				1.9	SC		SAND and CLAY, some silt; brown to gray; moist; (Fill)	Collected SWMU 318-SB14-00 (1. 4'-3')
3					1.7	CL		3.0	EL. 14.4
4	4.0		4	100	2.5			CLAY, little to some silt, trace vf sand; orangish brown; moist	Collected SWMU 318-SB14-02 (3'-5')
5					2.4				
6	DP-2				1.9				Collected SWMU 318-SB14-03 (5'-7')
7					3.3	SM		7.2	EL. 10.2
8	8.0		4	100	3.3			F. SAND, some silt, trace clay; gray; wet	
9					2.0				
10	DP-3				2.6				
11					2.6				
12	12.0				2.7			12.0	EL. 5.4
13								Bottom of Boring	
14									
15									
16									
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-SB15
SHEET 1 **OF** 1
DATE: START 2/5/2005
END 2/5/2005
O.G. ELEV. 17.300054

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355825.5681 **EAST:** 2467036.706
INSPECTOR (SIGNED) J. Rodzankas/ R. Sok **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 8 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			3.4	85				ASPHALT and GRAVEL/SAND SUBBASE	
1					4.5	SM		0.9 — F. SAND, little silt, trace clay; grayish brown, moist	EL. 16.4
2	DP-1				2.1				Collected SWMU 318-SB15-01 (1'-2')
3					2.7				
4	4.0		4	100	2.8	CL		3.4 — CLAY, little silt, trace to little f. sand; orangish gray; moist	Collected SWMU 318-SB15-02 (3'-4') EL. 13.9
5					2.1				
6	DP-2				1.9				Collected SWMU 318-SB15-03 (6'-7')
7					3.1	SM		7.2 — F. SAND, little silt, trace clay; gray; wet; orangish gray from 7.2' - 8.0'	EL. 10.1
8	8.0		1.2	30	2.6				
9					2.2				
10	DP-3								
11									
12	12.0							12.0 — Bottom of Boring	EL. 5.3
13									
14									
15									
16									
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-SB16
SHEET 1 **OF** 1
DATE: START 2/4/2005
END 2/4/2005
O.G. ELEV. 18.345401

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355830.6703 **EAST:** 2467058.947
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 8.0 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			4	100		SM		F. SAND, little silt, trace clay; dark brown; moist; (Topsoil/fill)	Collected SWMU 318-SB16-00 (0- 1')
1					0.0				
2	DP-1				0.0				
2.4									EL. 15.9
3					0.0	CL		CLAY, little to some silt, trace f. sand; orangish gray to brown; moist	
4					0.0				
4.0			4	100					Collected SWMU 318-SB16-02 (3'-5')
5					0.0				
6	DP-2				0.0				Collected SWMU 318-SB16-03 (6'-7')
7					0.0				
8					0.0				
8.0			2	50		SM		F. SAND, little silt, trace clay; gray; wet	EL. 10.3 First sleeve = 0.5' recovery, second sleeve pushed and recovered 2.0'
9									
10	DP-3								
11									
12.0									EL. 6.3
12								Bottom of Boring	
13									
14									
15									
16									
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-SB17
SHEET 1 **OF** 1
DATE: START 2/5/2005
END 2/5/2005
O.G. ELEV. 16.174025

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355873.4562 **EAST:** 2467032.443
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 7.3 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			3.8	95				ASPHALT with SAND SUBBASE	
1					2.5				
2	DP-1				3.4			F. SAND, little silt, trace clay, trace gravel; tan to gray; moist	Collected SWMU 318-SB17-01 (1'-2') EL. 15.0
3					3.1	CL		2.9 — CLAY, little to some silt, trace f. sand; orangish gray; moist	EL. 13.3
4	4.0				2.7				
5			3	75	3.4				Collected SWMU 318-SB17-02 (4'-5')
6	DP-2				1.9				
7					2.0				Collected SWMU 318-SB17-03 (6'-7')
8	8.0				2.8	SM		7.3 — F. SAND, little silt, trace clay; orangish gray; wet	EL. 8.9 EL. 8.2
9								8.0 — Bottom of Boring	
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-SB18
SHEET 1 **OF** 1
DATE: START 2/7/2005
END 2/7/2005
O.G. ELEV. 16.935828

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355905.3948 **EAST:** 2467065.109
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 7.7 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			4	100				ASPHALT with SAND SUBBASE; tan; moist	
1					<1.0	CL		0.7	Collected SWMU 318-SB18-00 (0- 1') EL. 16.2
2	DP-1				1.4			CLAY, little silt; orangish gray turning dark gray with depth; moist	
3					5.5				Collected SWMU 318-SB18-01 and TOC (1'-3')
4	4.0				<1.0				
5			4	100	14.4				Collected SWMU 318-SB18-02 (4'-5')
6	DP-2				0.0			6.3	
7					0.0	SM		F. SAND, little silt, trace clay; moist, wet at 7. 7'	Collected SWMU 318-SB18-03 (5'-6') EL. 10.6
8	8.0				1.5			8.0	EL. 8.9
9								Bottom of Boring	
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-SB19
SHEET 1 **OF** 1
DATE: START 2/4/2005
END 2/4/2005
O.G. ELEV. 18.237379

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355804.2809 **EAST:** 2467288.09
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 11.4 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			4	100		ML		SILT, some clay, little to some sand; tan to dark brown; moist; (Fill)	
1					0.0				Collected SWMU 318-SB19-00 (0- 1')
2	DP-1				<1.0				
3					0.0				
						CL		3.2	EL. 15.0
4	4.0				0.0			CLAY, little to some silt, trace f. sand; dark brown with areas of orange and gray from 5.5' - 8'; moist	
			4	100					Collected SWMU 318-SB19-02 (3'-5')
5					<1.0				
6	DP-2				0.0				
7					0.0				
8	8.0				0.0				
			4	100					
9					0.0				
						ML		9.3	EL. 8.9
10	DP-3				0.0			SILT, little sand, trace clay, sand content increases with depth; gray; moist	Collected SWMU 318-SB19-05 (9'-11')
11					0.0				
						SM		11.4	EL. 6.8
12	12.0				0.0			F. SAND, trace to little silt; gray; wet	
								12.0	EL. 6.2
								Bottom of Boring	
13									
14									
15									
16									
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-SB20
SHEET 1 **OF** 1
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 17.623387

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355844.2629 **EAST:** 2467329.351
INSPECTOR (SIGNED) Dan Tomczak **DRILLERS NAME/COMPANY** Layne Pech/ Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			3.5	88		SP		F. SAND, some clay and silt, organics; stiff; dk. brown;	
1					0.0				Collected SWMU 318-SB20-00 (0- 1')
2	DP-1				0.0			2.0	EL. 15.6
3					0.0			F. SAND, some silt; med. density; tan; moist	
4	4.0				0.0	MH		3.7	Collected SWMU 318-SB20-02 (3'-5')
			1.8	45				F. SILT, trace clay and f. sand; stiff; black	EL. 13.9
5					0.0			5.3	EL. 12.4
6	DP-2				0.0	CH		F. CLAY, some silt, v. stiff, some plasticity; gray to brown	
7						CL		6.3	EL. 11.4
8	8.0		4	100				CLAY, some sand; high plasticity; gray and orange to brown; moist to wet	Collected SWMU 318-SB20-04 (7'-9')
9								9.0	EL. 8.6
10	DP-3							CLAY, some sand; high plasticity; gray; moist	
11								11.0	EL. 6.6
12	12.0							F-M SAND, some silt; med. dense; greenish gray; moist to wet	EL. 5.6
								12.0	
13								Bottom of Boring	
14									
15									
16									
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-SB21
SHEET 1 **OF** 1
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 18.56611

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355806.5885 **EAST:** 2467400.972
INSPECTOR (SIGNED) Dan Tomczak **DRILLERS NAME/COMPANY** Layne Pech/ Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			2	50				ASPHALT	
					0.0	SW		0.5	EL. 18.1
1						SP		F-M SAND, some gravel; dk brown	Collected SWMU 318-SB21-00 (0- 1')
								1.0	
2	DP-1				0.0			F. SAND; med. dense; orange brown; (fill)	EL. 17.6
3									
								3.5	EL. 15.1
4	4.0					MH		F. SILT, some f. sand, trace clay; stiff; dark brown	
			2	50					Collected SWMU 318-SB21-02 (3'-5')
5						CH		4.5	EL. 14.1
								F. SAND, some silt; med. dense; gray brown	
6	DP-2								
								7.0	EL. 11.6
7						CL		CLAY, some silt; some plasticity; dark brown; moist	
	8.0								
8			4	100					Collected SWMU 318-SB21-04 (7'-9')
								9.0	EL. 9.6
9								F. CLAY, some f. sand and silt; high plasticity; gray; moist to wet	
10	DP-3								
								11.0	EL. 7.6
11								F-M SAND, some silt; med. dense; greenish gray; moist to wet	
	12.0							12.0	EL. 6.6
12								Bottom of Boring	
13									
14									
15									
16									
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-SB22
SHEET 1 **OF** 1
DATE: START 2/7/2005
END 2/7/2005
O.G. ELEV. 18.012189

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355866.5831 **EAST:** 2467397.316
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 11.5 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			2.7	68				ASPHALT with SAND SUBBASE	
					0.0	ML		0.5 SILT, little f. sand, trace clay; yellowish gray; moist	EL. 17.5 Collected SWMU 318-SB22-00 (0. 5'-1')
1									
2	DP-1				0.0				
3					0.0				
4	4.0		3.5	88					
5					0.0				
6	DP-2				0.0			6.1	
						CL		CLAY, little silt; dark brown; moist	Collected SWMU 318-SB22-03 (5'-7') EL. 11.9
7					0.0				
8	8.0		3	75					Collected SWMU 318-SB22-04 (9'-11')
9					0.0				
					0.0	SM		9.5 F. SAND, little silt, trace clay; gray; moist	EL. 8.5
10	DP-3								
11					0.0				
								wet at 11.5'	EL. 6.5
12	12.0							12.0 Bottom of Boring	EL. 6.0
13									
14									
15									
16									
17									
18									
19									

Baker
Michael Baker Jr., Inc.

TEST BORING RECORD

PROJECT: RCRA FACILITY INVESTIGATIONS at SWMUs 336 and 303/318 — 2-3-05
CTO NO.: CTO - 0091 — BORING NO.: 318-SB23
COORDINATES: EAST: — NORTH:
ELEVATION: SURFACE:

Rig:	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)					2-3-05			
Length					8:10			
Type								
Hammer Wt.								
Fall								

Remarks: Collected sample for TOC at 318-SB23-02
Collected VOCs for fixed base lab at 318-SB23-02

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
DP = Direct Push P = Piston
N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description
VOCs SVOCs 1				318-SB23-00	0.0	Dark brown f sand (SP); some silt; organic material; med dense
2		2'		0825	0.0	Dark brown f silt (MH); some clay; fill material; stiff
3		(50%)				No recovery
4						
VOCs 5					0.0	Dark brown f sand (SP); trace silt and clay
Encores SVOCs 6		2'		318-SB23-02	0.0	Gray and orange brown f sand (SP); some clay; stiff; organic and fill material
Metals TOC 7		(50%)		0840		No recovery
8						
9		4'		318-SB23-04	0.0	
VOCs Metals 10		(100%)		0900	0.0	Dk gray f clay (CL); some silt; high plasticity; moist

Match to Sheet 2

DRILLING CO.: Parratt-Wolff — GEOLOGIST: Dan Tomczak
DRILLER: Layne Peck / Jolaan Price — BORING NO.: _____ SHEET 1 OF 2

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-SB24
SHEET 1 **OF** 1
DATE: START 2/7/2005
END 2/7/2005
O.G. ELEV. 17.707288

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355887.8727 **EAST:** 2467344.063
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 11.5 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			4	100				F. SAND and SILT, little clay; tan to dark brown; moist; (Fill)	
1					0.0				Collected SWMU 318-SB24-00 (0- 1') EL. 16.5
						ML		1.2	
2	DP-1				0.0			SILT, little f. sand, trace clay; orangish tan; moist	
3					0.0	CL		2.8	EL. 14.9
								CLAY, little silt; dark gray to brown; moist	
4	4.0				0.0				
			3.1	78					
5					0.0				
6	DP-2				0.0				Collected SWMU 318-SB24-03, TOC, and TOD (5'-7')
7					0.0				
								turns light gray	EL. 10.4
8	8.0				0.0				
			3.9	98					
9					0.0				
10	DP-3				0.0				
								10.2	
11					0.0			F. SAND, little silt; gray; moist	Collected SWMU 318-SB24-05 (9'-11') EL. 7.5
								wet at 11.5'	EL. 6.2
12	12.0				0.0			12.0	EL. 5.7
								Bottom of Boring	
13									
14									
15									
16									
17									
18									
19									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO.	318-SB25
SHEET	1 OF 1
DATE: START	2/8/2005
END	2/8/2005
O.G. ELEV.	17.438571

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355880.2465 **EAST:** 2467289.38
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			3	75		ML		SILT, some F. Sand, trace clay, orangish tan to gray, moist, (Fill)	Collected SWMU 318-SB25-00 (0- 1')
1					0.0				
2	DP-1				0.0				
								2.3	EL. 15.1
3					0.0			SILT, trace clay, orangish tan, moist	
4	4.0		3.7	92					Collected SWMU 318-SB25-02, SB25-02D, SB25-02MS, SB25-02MSD (3'-5')
5					0.0	CL			
								5.0	EL. 12.4
6	DP-2				1.0			CLAY, little silt; gray to brown, moist	Collected SWMU 318-SB25-03, SB25-03D, SB25-03MS, SB25-MSD, (5'-7')
7					0.0				
8	8.0				0.0	SM			
								7.8	EL. 9.6
								F. SAND, little silt, trace clay; gray; wet	EL. 9.4
								8.0	
9								Bottom of Boring	
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-SB26
SHEET 1 **OF** 1
DATE: START 2/4/2005
END 2/4/2005
O.G. ELEV. 16.0979

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356032.9231 **EAST:** 2467332.151
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Macrocore
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 6.0 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			2.8	70		SW		F. SAND, some silt and gravel; tan, gray, black; moist; (Fill)	Collected SWMU 318-SB26-00 (0- 1')
1					0.0				
2	DP-1				0.0	CL		2.0 — CLAY, some silt, trace f. sand; gray w/ orange streaking; moist	EL. 14.1 Collected SWMU 318-SB26-01 (1'-3')
3					0.0				
4	4.0		4	100					Collected SWMU 318-SB26-02
5					0.0				
6	DP-2				0.0	SM		6.0 — F. SAND, little silt, trace clay; gray; wet	EL. 10.1
7					0.0				
8	8.0		1.2	30	0.0				
9					1.4				
10	DP-3								
11									
12	12.0							12.0 — Bottom of Boring	EL. 4.1
13									
14									
15									
16									
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-SB27
SHEET 1 **OF** 1
DATE: START 2/7/2005
END 2/7/2005
O.G. ELEV. 15.680351

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356032.9693 **EAST:** 2467358.76
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 7.8 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			2	50				ASPHALT, sand subbase	
1					0.0	ML		0.9	Collected SWMU 318-SB27-00 (0- 1') EL. 14.8
2	DP-1				0.0			SILT, little sand; orangish gray; moist	
3						CL		2.7 — CLAY, little silt; orangish gray and tan; moist, moisture increases with depth	EL. 13.0
4	4.0		3.5	88					Collected SWMU 318-SB27-02, SB27-02D
5					0.0				
6	DP-2				0.0				Collected SWMU 318-SB27-03 (5'-7')
7					0.0				
8	8.0				0.0	SM		7.8 — F. SAND, little silt, trace clay; gray; wet	EL. 7.9 EL. 7.7
9								8.0 — Bottom of Boring	
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-SB28
SHEET 1 **OF** 1
DATE: START 2/8/2005
END 2/8/2005
O.G. ELEV. 16.388671

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356077.2179 **EAST:** 2467323.206
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Macrocore
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 7.8 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			2.6	65		ML		SILT, little sand, trace gravels; orange to brown; moist; (Fill)	
1					0.0				Collected SWMU 318-SB28-00 (0- 1') EL. 15.1
								1.3	
2	DP-1				0.0			SILT, little clay, trace sand; orange to tan; wet, water from parking lot runoff	
3					0.0				
4	4.0		3.5	88					Collected SWMU 318-SB28-02, SB28-02D, SB28-02MS, SB28-02MSD, (3'-5') EL. 11.3
5					0.0	CL		5.1	
6	DP-2				0.0			CLAY, little silt; gray to brown with orange streaking; moist	Collected SWMU 318-SB28-03, SB28-03D, SB28-03MS, SB28-03MSD, (5'-7') EL. 8.6
7					0.0				
8	8.0				0.0	SM		7.8	EL. 8.4
								F. SAND, little silt, trace clay; gray; wet	
9								8.0	
								Bottom of Boring	
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW31
SHEET 1 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 18.895489

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355913.3494 **EAST:** 2466386.859
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0									
1									
2									
3									
4									
5									
6	X-1								
7									
8									
9									
10									
11									
12								Slightly turbid, sulfury smell	EL. 6.9 Purged approx. 1.0 gal. Collected SWMU 318-GW31 and VOA's for fixed base lab Collected SWMU 318-GW31 (12' 16')
13									
14	F-1								
15									
16									
17									
18									
19									

12.0
16.0

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW31
SHEET 2 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 18.895489

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355913.3494 **EAST:** 2466386.859
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20	X-2								
21									
22									
23									
24.0									
24								Slightly turbid, slow recharge	EL. -5.1 Purged approx. 0.25 gal. Collected SWMU 318-GW31-01
25									
26	F-2								Collected SWMU 318-GW31-01 (24'-28')
27									
28.0									
28									
29									
30									
31									
32									
33									
34	X-3								
35									
36									
37									
38									
39									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW31
SHEET 3 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 18.895489

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355913.3494 **EAST:** 2466386.859
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)*	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Very turbid	EL. -21.1 Purged approx 1.5 gal. Collected SWMU 318-GW31-02
	F-3								Collected SWMU 318-GW31-02 (40'-44')
44.0								44.0	EL. -25.1
								Bottom of Boring	

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW32
SHEET 1 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 18.204122

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355697.0684 **EAST:** 2466496.647
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)*	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0									
1									
2									
3									
4									
5									
6	X-1								
7									
8									
9									
10									
11									
12	12.0							Slightly turbid	EL. 6.2 Purged approx. 0.5 gal. Collected SWMU 318-GW32 (12' 16')
13									
14	F-1								
15									
16	16.0								
17									
18									
19									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW32
SHEET 2 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 18.204122

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355697.0684 **EAST:** 2466496.647
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20	X-2								
21									
22									
23									
24.0									
24								Clear, very slow recharge	EL. -5.8 Purged approx. 0.25 gal. Collected SWMU 318-GW32-01 (24'-28')
25									
26	F-2								
27									
28.0									
28								28.0	
29									
30									
31									
32								Dense material encountered	EL. -13.8
33									
34	X-3								
35									
36									
37									
38									
39									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW32
SHEET 3 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 18.204122

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355697.0684 **EAST:** 2466496.647
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Turbid	EL. -21.8 Purged approx 0.5 gal. Collected SWMU 318-GW32-02 (40'-44')
	F-3								
44.0								44.0 Bottom of Boring	EL. -25.8

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW33
SHEET 1 **OF** 3
DATE: START 2/4/2005
END 2/4/2005
O.G. ELEV. 18.572913

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356102.0088 **EAST:** 2466510.85
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0									
1									
2									
3									
4									
5									
6	X-1								
7									
8									
9									
10									
11									
12	12.0							Slightly turbid	EL. 6.6 Purged approx. 0.5 gal. Collected SWMU 318-GW33
13									
14	F-1								
15									
16	16.0								
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW33
SHEET 2 **OF** 3
DATE: START 2/4/2005
END 2/4/2005
O.G. ELEV. 18.572913

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356102.0088 **EAST:** 2466510.85
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)* .	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20	X-2								
21									
22									
23									
24								Slightly turbid, slow to recharge	EL. -5.4 Purged approx. 0.25 gal. Collected SWMU 318-GW33-01
25									
26	F-2								
27									
28								28.0	
29									
30								Dense material encountered, possible Castlehane	EL. -11.4
31									
32									
33									
34	X-3								
35									
36									
37									
38									
39									

24.0
28.0

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW33
SHEET 3 **OF** 3
DATE: START 2/4/2005
END 2/4/2005
O.G. ELEV. 18.572913

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356102.0088 **EAST:** 2466510.85
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Slightly turbid	EL. -21.4 Purged approx. 0.5 gal. Collected SWMU 318-GW32-02
	F-3								
44.0								44.0 Bottom of Boring	EL. -25.4

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW35
SHEET 1 **OF** 3
DATE: START 2/5/2005
END 2/5/2005
O.G. ELEV. 18.582347

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355803.2292 **EAST:** 2466818.244
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 8 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or FID (ppm)	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			3.9	98				Concrete	
					1.5				
1								1.0	EL. 17.6
								SAND, some silt, trace to little clay; (Subbase)	
					5.2				Collected SWMU-SB35-01 (1'-3')
2	DP-1					CL		2.0	EL. 16.6
					6.2			CLAY, some silt, trace v.f. sand; tan to gray; moist	
3									
					5.5				Collected SWMU 318 SB35-02 (3'-4')
4	4.0		2.6	65					
					1.5				
5									Collected SWMU 318-SB35-03 (5'-7')
					11.2				
6	DP-2								
					1.7			Sand content increases	EL. 12.0
7								7.4	EL. 11.2
	8.0					SM		F. SAND, little silt, trace clay; gray; wet; strong sulphur/ petro smell	
8			3.2	80					
					6.2				
9									
					6.5				
10	DP-3								
					7.4				
11									
	12.0							Slightly turbid, strong sulphur smell	EL. 6.6 Purged approx. 1.0 gal. Collected SWMU 318-GW35 (12'- 16')
12									
13									
14	F-1								
15									
	16.0								
16			4	100					
					6.8				
17									
					13.1				
18	DP-4							Strong sulphur/petro odor	EL. 0.6
					10.1				
19									
					15.2				

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW35
SHEET 2 **OF** 3
DATE: START 2/5/2005
END 2/5/2005
O.G. ELEV. 18.582347

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355803.2292 **EAST:** 2466818.244
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 8 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ..... RQD (FT.)	RECOVERY (%) ..... RQD (%)	PID (ppm) or *FID (ppm)*	USCS ..... AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20.0			3.2	80					
					9.3				
21									
					11.3				
22	DP-5							Strong sulphur/petro odor	EL. -3.4
					23.0				
23									
24.0								Clear, strong sulphur/petro smell	EL. -5.4
24									Purged approx 0.5 gal.
25									
26	F-2								Collected SWMU 318-GW35-01 and samples for fixed lab (24'-28')
27									
28.0									
28			2.5	62					
29					2.5				
					2.5				
30	DP-6							High clay content, dark green	EL. -11.4
					3.0	CL		30.5	EL. -11.9
31								CLAY, some silt, little sand, shell fragments; greenish gray; wet; sand content increases with depth	Inferred contact of Belgrade formation
32.0									EL. -12.8
32			4	100				Very wet to 32'	
					2.1				
33								Color changes to dark gray	EL. -14.2
					2.1				
34	DP-7					GM		34.0	EL. -15.4
					2.4			GRAVELY SAND and SHELL FRAGMENTS, little silt, trace clay; gray; wet	
35									
					3.7				
36.0									
36									
37									
38	X-NS								No Sample collected
39									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW35
SHEET 3 **OF** 3
DATE: START 2/5/2005
END 2/5/2005
O.G. ELEV. 18.582347

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355803.2292 **EAST:** 2466818.244
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 8 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Turbid, strong sulphur smell	EL. -21.4 Purged approx. 1.0 gal
	F-3								Collected SWMU 318-GW35-02 (40'-44')
44.0								44.0	EL. -25.4
								Bottom of Boring	

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW36
SHEET 1 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: **EAST:**
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0									
1									
2									
3									
4									
5									
6	X-1								
7									
8									
9									
10									
11									
12	12.0							Slightly turbid, sulphury smell	EL. -12.0 Purged approx. 0.5 gal. Collected SWMU 318-GW36 (12' 16')
13									
14	F-1								
15									
16	16.0								
17									
18									
19									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW36
SHEET 2 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: **EAST:**
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20	X-2								
21									
22									
23									
24.0									EL. -24.0
24								Slightly turbid	Purged approx. 0.5 gal.
25									Collected SWMU 318-GW36-01 (24'-28')
26	F-2								
27									
28.0									
28								28.0	
29									
30									
31									
32									
33									
34	X-3								
35								Dense material encountered, possible Castlehane	EL. -35.0
36									
37									
38									
39									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW36
SHEET 3 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: **EAST:**
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0	F-3							Slightly turbid	EL. -40.0 Purged approx. 0.5 gal. Collected SWMU 318-GW36-02 and GW36-02D (40'-44')
44.0								44.0 Bottom of Boring	EL. -44.0

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW37
SHEET 1 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: **EAST:**
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0									
1									
2									
3									
4									
5									
6	X-1								
7									
8									
9									
10									
11									
12	12.0							Slightly turbid, sulphury smell	EL. -12.0 Purged approx. 0.5 gal. Collected SWMU 318-GW37 (12'16')
13									
14	F-1								
15									
16	16.0								
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW37
SHEET 2 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. _____

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: _____ **EAST:** _____
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20	X-2								
21									
22									
23									
24.0									EL. -24.0
24								Slightly turbid	Purged approx. 0.5 gal.
25									Collected SWMU 318-GW37-01 (24'-28)
26	F-2								
27									
28.0									
28								28.0	
29									
30									
31									
32								Dense material encountered, possible Castlehane	EL. -32.0
33									
34	X-3								
35									
36									
37									
38									
39									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW37
SHEET 3 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: **EAST:**
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)* .	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0	F-3							Slightly turbid	EL. -40.0 Purged approx. 0.5 gal. Collected SWMU 318-GW37-02 (40'-44')
44.0								44.0 Bottom of Boring	EL. -44.0

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW38
SHEET 1 **OF** 3
DATE: START 2/2/2005
END 2/2/2005
O.G. ELEV. 18.527721

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356129.9633 **EAST:** 2466739.061
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 6 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			4	100				SILT, F. SAND, GRAVEL; Grey to Yellow and brown; moist; (Fill)	
1					0.0				
2	DP-1				0.0			Clay from 1.2 to 2.2; yellowish brown	EL. 17.3
3					0.0				
4	4.0				0.0			4.0	EL. 14.5
5			2.8	70	0.0	ML		SILT, little to some clay, trace to little f. sand; orangish brown; moist	
6	DP-2				0.0	SM		6.0	EL. 12.5
7					0.0			F. SAND, little to some silt, trace clay; gray; wet, water at 6.0'	
8	8.0		3.2	80					
9					0.0			little silt from about 9.0'; color changes to ligh t gray/green	EL. 9.5
10	DP-3				0.0				
11					0.0				
12	12.0								Purged approx. 0.75 gal.
13									
14	F-1							Clear	EL. 4.5 Collected SWMU 318-GW38 (12'- 16')
15									
16	16.0		0	0					Tip from water sample jammed in shoe of Macrocore
17									
18	DP-4								
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW38
SHEET 2 **OF** 3
DATE: START 2/2/2005
END 2/2/2005
O.G. ELEV. 18.527721

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356129.9633 **EAST:** 2466739.061
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 6 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)*	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20.0			1.3	32					
21					0.0				
22	DP-5								
23									
24.0									Purged approx. 0.25 gal. Collected SWMU 318-GW38-01, GW38-01D (24'-28')
25									
26	F-2							Cear	EL. -7.5
27									
28.0									
28			0	0					Tip from water sample jammed in shoe of Macrocore
29									
30	DP-6								
31									
32.0									
32			4	100				F. to MED. SAND and SHELL FRAGMENTS, little to some silt, trace clay; light gray; wet	EL. -13.5
33					0.0				
34	DP-7				0.0				
35					0.0				
36.0					0.0				
36									No Sample
37									
38	X-NS								
39									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW38
SHEET 3 **OF** 3
DATE: START 2/2/2005
END 2/2/2005
O.G. ELEV. 18.527721

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356129.9633 **EAST:** 2466739.061
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 6 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)*	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Slightly turbid	EL. -21.5 Purged approx. 0.5 gal. Collected SWMU 318-GW38-02 (40'-44')
	F-3								
44.0								44.0 Bottom of Boring	EL. -25.5

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW39
SHEET 1 **OF** 3
DATE: START 2/2/2005
END 2/2/2005
O.G. ELEV. 18.271226

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356265.1191 **EAST:** 2466840.691
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)*	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0									
1									
2									
3									
4									
5									
6	X-1								
7									
8									
9									
10									
11									
12	12.0							Clear	EL. 6.3 Purged approx. 0.5 gal. Collected SWMU 318-GW39 (12'16')
13									
14	F-1								
15									
16	16.0								
17									
18									
19									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW39
SHEET 2 **OF** 3
DATE: START 2/2/2005
END 2/2/2005
O.G. ELEV. 18.271226

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356265.1191 **EAST:** 2466840.691
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)* .	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20	X-2								
21									
22									
23									
24.0									
24								Clear, slow to recharge	EL. -5.7 Purged approx. 0.25 gal. Collected SWMU 318-GW39-01 (24'-28)
25									
26	F-2								
27									
28.0									
28								28.0	
29									
30									
31									
32									
33									
34	X-3							Dense material encountered, possible Castlehane	EL. -15.7
35									
36									
37									
38									
39									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW39
SHEET 3 **OF** 3
DATE: START 2/2/2005
END 2/2/2005
O.G. ELEV. 18.271226

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356265.1191 **EAST:** 2466840.691
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Slightly turbid	EL. -21.7 Purged approx. 0.5 gal. Collected SWMU 318-GW39-02 (40'-44')
	F-3								
44.0								44.0 Bottom of Boring	EL. -25.7

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW41
SHEET 1 **OF** 3
DATE: START 2/1/2005
END 2/1/2005
O.G. ELEV. 19.164071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355846.6895 **EAST:** 2467644.532
INSPECTOR (SIGNED) Dan Tomczak **DRILLERS NAME/COMPANY** Lane Pech/ Parratt-Wolff
EQUIPMENT USED _____
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			3.2	80		SW		F-M SAND, some gravel, organics; light gray	EL. 18.7
0.5					0.0			F. SILT, trace f. sand and clay; stiff; black brown	
2	DP-1				0.0				
2.5					0.0	CL		F. CLAY with F-M SAND; some plasticity; mottled gray and orange brown	EL. 16.7
4.0					0.0				
4			2	50					
6.0	DP-2					OL		F. ORGANIC SILT, trace clay, wood debris; black brown	EL. 13.2
7.0					0.0	CL		F. CLAY, some silt; stiff; plastic; gray	EL. 12.2
8.0					0.0			soft, very plastic; moist	EL. 11.2
8			4	100					
	DP-3				0.1				
					0.0				
					0.4				
11.5					0.2	SW		F-M SAND, trace clay; gray; moist to wet	EL. 7.7
12.0									
12									
	F-1								Groundwater grab sample for VOC's 318-GW41 from 12'-16' bgs
16.0									
16.0			3.2	80				F-M SAND; med. density; greenish gray; moist to wet	EL. 3.2
					0.1				
	DP-4				0.5				
					0.3				
					0.5				

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW41
SHEET 2 **OF** 3
DATE: START 2/1/2005
END 2/1/2005
O.G. ELEV. 19.164071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355846.6895 **EAST:** 2467644.532
INSPECTOR (SIGNED) Dan Tomczak **DRILLERS NAME/COMPANY** Lane Pech/ Parratt-Wolff
EQUIPMENT USED _____
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20.0			3	75				loose to med. density; wet	EL. -1.3
22.0	DP-5								
24.0	F-2		0	0				No Recovery	Groundwater grab sample for VOC's 318-GW41-01 22'-26' bgs EL. -5.8
	DP-6								
28.0						SP		F. SAND with SILT, trace clay; olive gray; moist to wet (28.0)	EL. -8.8
	DP-7								
						SW		F-C SAND, some shell fragments and fossils, trace clay; dense; some weak cementation; gray; moist to wet (31.0)	EL. -11.8
32.0			4	100					
	DP-8								
36.0			0	0					
	DP-9							No Recovery	EL. -18.8

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW41
SHEET 3 **OF** 3
DATE: START 2/1/2005
END 2/1/2005
O.G. ELEV. 19.164071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355846.6895 **EAST:** 2467644.532
INSPECTOR (SIGNED) Dan Tomczak **DRILLERS NAME/COMPANY** Lane Pech/ Parratt-Wolff
EQUIPMENT USED _____
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0	F-3							Groundwater grab sample for VOC's 318-GW41-02 from 40 ft to 44 ft bgs	EL. -22.8
44.0								44.0 Terminated borehole at 44ft bgs	EL. -24.8

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW42
SHEET 1 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 20.73278533

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355720.4429 **EAST:** 2467804.588
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0									
1									
2									
3									
4									
5									
6	X-1								
7									
8									
9									
10									
11									
12	12.0							Slightly turbid, sulphury smell	EL. 8.7 Purged approx. 0.75 gal. Collected SWMU 318-GW42 (12'16')
13									
14	F-1								
15									
16	16.0								
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW42
SHEET 2 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 20.73278533

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355720.4429 **EAST:** 2467804.588
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20	X-2								
21									
22									
23									
24.0								Turbid (gray)	EL. -3.3 Purged approx. 1.25 gal. Collected SWMU 318-GW42-01 (24'-28)
25									
26	F-2								
27									
28.0								28.0	
29									
30									
31									
32									
33									
34	X-3							Dense material encountered, possible Castlehane	EL. -13.3
35									
36									
37									
38									
39									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW42
SHEET 3 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 20.73278533

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355720.4429 **EAST:** 2467804.588
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Less turbid than above sample	EL. -19.3 Purged approx. 0.5 gal. Collected SWMU 318-GW42-02 (40'-44')
	F-3								
44.0								44.0 Bottom of Boring	EL. -23.3

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW44
SHEET 1 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 17.697072

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355983.5515 **EAST:** 2467841.261
INSPECTOR (SIGNED) Dan Tomczak **DRILLERS NAME/COMPANY** Layne Pech/ Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0								No Sample	
1									
2	X-1								
3									
4	4.0							No Sample	EL. 13.7
5									
6	X-2								
7									
8	8.0							No Sample	EL. 9.7
9									
10	X-3								
11									
12	12.0							Collected grab groundwater samples for VOC's 318 GW44 from 12' to 16' bgs at 1505	EL. 5.7
13									
14	F-1								
15									
16	16.0							No Sample	EL. 1.7
17									
18									
19	X-4								

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW44
SHEET 2 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 17.697072

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355983.5515 **EAST:** 2467841.261
INSPECTOR (SIGNED) Dan Tomczak **DRILLERS NAME/COMPANY** Layne Pech/ Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
22.0								Collected grab groundwater samples for VOC's 318 GW44-01 from 22' to 26' bgs at 1520	EL. -4.3
	F-2								
26.0								No Sample	EL. -8.3
	X-5								
30.0								No Sample	EL. -12.3
	X-6								
34.0								No Sample	EL. -16.3
	X-7								

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW44
SHEET 3 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 17.697072

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355983.5515 **EAST:** 2467841.261
INSPECTOR (SIGNED) Dan Tomczak **DRILLERS NAME/COMPANY** Layne Pech/ Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0	F-3							Collect grab groundwater samples for VOC's 318-GW44-02 from 40' to 44' bgs at 1540	EL. -22.3
44.0								44.0 Bottom of Boring	EL. -26.3

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW45
SHEET 1 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 17.490425

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355972.4686 **EAST:** 2467952.603
INSPECTOR (SIGNED) Dan Tomczak **DRILLERS NAME/COMPANY** Layne Pech/ Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0								No Sample	
1									
2	X-1								
3									
4	4.0							No Sample	EL. 13.5
5									
6	X-2								
7									
8	8.0							No Sample	EL. 9.5
9									
10	X-3								
11									
12	12.0							Collected grab groundwater samples for VOC's 318 GW45 from 12' to 16' bgs at 1505	EL. 5.5
13									
14	F-1								
15									
16	16.0							No Sample	EL. 1.5
17									
18									
19	X-4								

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW45
SHEET 2 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 17.490425

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355972.4686 **EAST:** 2467952.603
INSPECTOR (SIGNED) Dan Tomczak **DRILLERS NAME/COMPANY** Layne Pech/ Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
22.0								Collected grab groundwater samples for VOC's 318 GW45-01 from 22' to 26' bgs at 1520	EL. -4.5
	F-2								
26.0								No Sample	EL. -8.5
	X-5								
30.0								No Sample	EL. -12.5
	X-6								
34.0								No Sample	EL. -16.5
	X-7								

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW45
SHEET 3 **OF** 3
DATE: START 2/3/2005
END 2/3/2005
O.G. ELEV. 17.490425

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355972.4686 **EAST:** 2467952.603
INSPECTOR (SIGNED) Dan Tomczak **DRILLERS NAME/COMPANY** Layne Pech/ Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Collect grab groundwater samples for VOC's 318-GW45-02 from 40' to 44' bgs at 1540	EL. -22.5
	F-3								
44.0								44.0 Bottom of Boring	EL. -26.5

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW46
SHEET 1 **OF** 3
DATE: START 2/6/2005
END 2/6/2005
O.G. ELEV. 16.713069

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356074.0969 **EAST:** 2468143.109
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 11.5 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			2.6	65				ASPHALT with GRAVEL and SAND (Subbase)	
1					0.0	ML		1.0	EL. 15.7
2	DP-1				0.0			SILT, little to some clay, trace f. sand; gray; moist	
3					0.0				
4	4.0		4	100					
5					0.0			5.1	EL. 11.6
6	DP-2				0.0			Silt, some f. sand, trace clay; orangish tan; moist	
7					0.0	CL		7.1	EL. 9.6
8	8.0		3.1	78	0.0			Clay, some silt, trace f. sand; dk gray; moist	
9					0.0				
10	DP-3				0.0				
11					0.0				
12	12.0					SM		11.5	EL. 5.2
13								F. SAND, little silt, trace clay; gray; wet	Purged approx. 1.5 gal.
14	F-1							Slightly turbid, slight sulphur odor	EL. 2.7 Purged approx. 1.5 gal. Collected SWMU 318-GW46 (12'- 16')
15									
16	16.0		4	100					
17					<1.0				
18	DP-4				<1.0				
19					<1.0			Same as above Color change to greenish gray at 19'	EL. -1.8
					<1.0				

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW46
SHEET 2 **OF** 3
DATE: START 2/6/2005
END 2/6/2005
O.G. ELEV. 16.713069

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356074.0969 **EAST:** 2468143.109
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 11.5 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20.0			4	100					
					<1.0				
	DP-5				2.9			Same as above	EL. -5.3
					<1.0				
24.0					1.6				Purged approx. 0.75 gal. Collected SWMU 318-GW46-01 (24'-28')
	F-2							Slightly turbid, sliight sulphur smell	EL. -9.3
28.0								28.0	EL. -11.3
			2.8	70		CL		CLAY, little silt, trace sand; dk green; wet	
					<1.0				
	DP-6				<1.0				
					<1.0				
32.0								Shell fragments	EL. -15.1
			4	100				32.7	EL. -16.0
								GRAVELLY CLAY, little f. sand, trace silt; lt. gray; wet	
	DP-7								
36.0									No Sample
	X-NS								

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW46
SHEET 3 **OF** 3
DATE: START 2/6/2005
END 2/6/2005
O.G. ELEV. 16.713069

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356074.0969 **EAST:** 2468143.109
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** 11.5 **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)*	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Turbid	EL. -23.3 Purged approx. 0.5 gal. Collected SWMU 318-GW46-02 (40'-44')
	F-3								
44.0								44.0	EL. -27.3
								Bottom of Boring	

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW47
SHEET 1 **OF** 3
DATE: START 2/6/2005
END 2/6/2005
O.G. ELEV. 19.721166

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355833.436 **EAST:** 2468166.709
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)* .	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0									
1									
2									
3									
4									
5									
6	X-1								
7									
8									
9									
10									
11									
12	12.0							Slightly turbid, slight sulphury smell	EL. 7.7 Purged approx. 0.5 gal. Collected SWMU 318-GW47 (12'16')
13									
14	F-1								
15									
16	16.0								
17									
18									
19									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW47
SHEET 2 **OF** 3
DATE: START 2/6/2005
END 2/6/2005
O.G. ELEV. 19.721166

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355833.436 **EAST:** 2468166.709
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20	X-2								
21									
22									
23									
24.0									EL. -4.3
24								Slightly turbid, sulphury smell	Purged approx. 1.0 gal.
25									Collected SWMU 318-GW47-01 (24'-28)
26	F-2								
27									
28.0									
28								28.0	
29									
30									
31									
32									
33									
34	X-3								
35									
36									
37									
38									
39									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW47
SHEET 3 **OF** 3
DATE: START 2/6/2005
END 2/6/2005
O.G. ELEV. 19.721166

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355833.436 **EAST:** 2468166.709
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Very turbid	EL. -20.3 Purged approx. 1.0 gal. Collected SWMU 318-GW47-02 (40'-44')
	F-3								
44.0								44.0 Bottom of Boring	EL. -24.3

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW48
SHEET 1 **OF** 3
DATE: START 2/5/2005
END 2/5/2005
O.G. ELEV. 18.469627

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355574.4672 **EAST:** 2466360.511
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0									
1									
2									
3									
4									
5									
6	X-1								
7									
8									
9									
10									
11									
12	12.0							Slightly turbid, slight sulphury smell	EL. 6.5 Purged approx. 0.5 gal. Collected SWMU 318-GW48 (12'16')
13									
14	F-1								
15									
16	16.0								
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW48
SHEET 2 **OF** 3
DATE: START 2/5/2005
END 2/5/2005
O.G. ELEV. 18.469627

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355574.4672 **EAST:** 2466360.511
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)* .	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20	X-2								
21									
22									
23									
24.0									
24								Slightly turbid	EL. -5.5 Purged approx. 0.5 gal. Collected SWMU 318-GW48-01 (24'-28)
25									
26	F-2							Dense material encountered	EL. -7.5
27									
28.0									
28								28.0	
29									
30									
31									
32									
33									
34	X-3								
35									
36									
37									
38									
39									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW48
SHEET 3 **OF** 3
DATE: START 2/5/2005
END 2/5/2005
O.G. ELEV. 18.469627

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355574.4672 **EAST:** 2466360.511
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Slightly turbid	EL. -21.5 Purged approx. 1.0 gal. Collected SWMU 318-GW48-02 (40'-44')
	F-3								
44.0								44.0 Bottom of Boring	EL. -25.5

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW49
SHEET 1 **OF** 3
DATE: START 2/6/2005
END 2/6/2005
O.G. ELEV. 19.363859

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355962.1895 **EAST:** 2466246.985
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)* .	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0									
1									
2									
3									
4									
5									
6	X-1								
7									
8									
9									
10									
11									
12	12.0							Slightly turbid	EL. 7.4 Purged approx. 0.25 gal. Collected SWMU 318-GW49 (12'16')
13									
14	F-1								
15									
16	16.0								
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW49
SHEET 2 **OF** 3
DATE: START 2/6/2005
END 2/6/2005
O.G. ELEV. 19.363859

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355962.1895 **EAST:** 2466246.985
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20	X-2								
21									
22									
23									
24.0									
24								Slightly turbid	EL. -4.6 Purged approx. 0.5 gal. Collected SWMU 318-GW49-01, GW49-01D (24'-28)
25									
26	F-2								
27									
28.0									
28								28.0	
29									
30									
31									
32									
33									
34	X-3								
35									
36									
37									
38									
39									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW49
SHEET 3 **OF** 3
DATE: START 2/6/2005
END 2/6/2005
O.G. ELEV. 19.363859

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355962.1895 **EAST:** 2466246.985
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)* .	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Slightly turbid	EL. -20.6 Purged approx. 0.5 gal. Collected SWMU 318-GW49-02 (40'-44')
	F-3								
44.0								44.0 Bottom of Boring	EL. -24.6

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW50
SHEET 1 **OF** 3
DATE: START 2/6/2005
END 2/6/2005
O.G. ELEV. 19.84558

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356088.991 **EAST:** 2466313.142
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)* .	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0									
1									
2									
3									
4									
5									
6	X-1								
7									
8									
9									
10									
11									
12	12.0							Slightly turbid	EL. 7.8 Purged approx. 0.5 gal. Collected SWMU 318-GW50 (12'16')
13									
14	F-1								
15									
16	16.0								
17									
18									
19									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW50
SHEET 2 **OF** 3
DATE: START 2/6/2005
END 2/6/2005
O.G. ELEV. 19.84558

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356088.991 **EAST:** 2466313.142
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *F/D (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20	X-2								
21									
22									
23									
24.0									
24								Clear	EL. -4.2 Purged approx. 0.5 gal. Collected SWMU 318-GW50-01, (24'-28)
25									
26	F-2								
27									
28.0									
28								28.0	
29									
30									
31									
32									
33									
34	X-3								
35									
36									
37									
38									
39									

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318-GW50
SHEET 3 **OF** 3
DATE: START 2/6/2005
END 2/6/2005
O.G. ELEV. 19.84558

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 356088.991 **EAST:** 2466313.142
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip LeFever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0								Turbid	EL. -20.2 Purged approx. 0.5 gal. Collected SWMU 318-GW50-02 (40'-44')
	F-3								
44.0								44.0 Bottom of Boring	EL. -24.2

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW51
SHEET 1 **OF** 3
DATE: START 2/7/2005
END 2/7/2005
O.G. ELEV. 17.869535

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355775.3969 **EAST:** 2466316.885
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)* .	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
12.0	F-1								Purged approx. 0.5 gal - turbid, flow very low

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW51
SHEET 2 **OF** 3
DATE: START 2/7/2005
END 2/7/2005
O.G. ELEV. 17.869535

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355775.3969 **EAST:** 2466316.885
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20									
21									
22									
23									
24	24.0								Purged approx. 0.5 gal, slightly turbid
25									
26	F-2								
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-GW51
SHEET 3 **OF** 3
DATE: START 2/7/2005
END 2/7/2005
O.G. ELEV. 17.869535

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355775.3969 **EAST:** 2466316.885
INSPECTOR (SIGNED) J. Rodzankas **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED Ingersoll-Rand A300
DRILLING METHODS Direct Push
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40.0									Purged approx. 1.0 gal., slightly turbid
	F-3								
44.0								44.0	EL. -26.1
								Bottom of Boring	

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW04
SHEET 1 **OF** 2
DATE: START 2/14/2005
END 2/14/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356090.2324 **EAST:** 2466727.811
INSPECTOR (SIGNED) J. Frank (CH2MHill) **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	0	0.00	8" x 7.5" Manhole cover
		-0.1	0.10	
		-0.2	0.20	Johnson 10' section, 0.010 screen,
		-0.3	0.30	
		-0.6	0.60	2" ID, Schedule 40 PVC
	3			Portland Type 1, 3 - 94 lb. bags + 19 lbs. of Hyield Bentonite powder
	6			
	9			
	12			
	15	-15	15.00	DSI Bentonite 3/8" chips, 3 - 50 lb. bags
	18	-18	18.00	DSI Filter sand #1, 11.5 - 50 lb. bags

EXTENDED READINGS

Well location in area of SWMU 318-GW38. For general geologic profile see boring log of 318-GW38

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW04
SHEET 2 **OF** 2
DATE: START 2/14/2005
END 2/14/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356090.2324 **EAST:** 2466727.811
INSPECTOR (SIGNED) J. Frank (CH2MHill) **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV / DEPTH	WELL NOTES	EXTENDED READINGS
	21	-20 / 20.00	Johnson 10' section, Schedule 40 PVC, 0.010", 2" ID	Well location in area of SWMU 318-GW38. For general geologic profile see boring log of 318-GW38
	24			
	27			
	30	30.00		WELL DEVELOPMENT
	33			
	36			
	39			

LEGEND

Symbol Description

Monitor Well Details

- Casing cap set in concrete
- Empty casing set in concrete
- Riser cap inside casing set in concrete
- Cased riser set in concrete
- Riser set in grout
- Riser backfilled with bentonite
- Riser backfilled with sand
- Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | MCB Camp Lejeune | Date 3/31/2005 | LD4 LEG11x17 (11/02)

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. MW04DW
SHEET 1 **OF** 3
DATE: START 2/17/2005
END 2/17/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356081.5433 **EAST:** 2468425.196
INSPECTOR (SIGNED) J. Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS Mud Rotary
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	0	0.00	8 x 7.5 Round Manhole
		-0.1	0.10	Schedule 40 PVC - 2" ID
		-0.2	0.20	Portland Type 1, 2 - 94 lb. bags + 10 lbs bentonite powder
		-0.3	0.30	
		-0.6	0.60	
	3			
	6			
	9			
	12			
	15			
	18			

EXTENDED READINGS

Well location in area of SWMU 318 GW46. For generalgeologic information see boring log of 318-GW46

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. MW04DW
SHEET 2 **OF** 3
DATE: START 2/17/2005
END 2/17/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356081.5433 **EAST:** 2468425.196
INSPECTOR (SIGNED) J. Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS Mud Rotary
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	21			
	24			
	27			
	30			
		-32	32.00	DSI 3/8" Bentonite chips. 1 - 50 lb. bag
	33			
	36			
		-38	38.00	DSI Filter Sand, 1.75 - 50 lb bags
	39			

EXTENDED READINGS

Well location in area of SWMU 318 GW46. For generalgeologic information see boring log of 318-GW46

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. MW04DW
SHEET 3 **OF** 3
DATE: START 2/17/2005
END 2/17/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356081.5433 **EAST:** 2468425.196
INSPECTOR (SIGNED) J. Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS Mud Rotary
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
		-40	40.00	Johnson 10' screen 0.010", Schedule 40 PVC - 2" ID
	42			
	45		45.00	
	48			
	51			
	54			
	57			

EXTENDED READINGS

Well location in area of SWMU 318 GW46. For generalgeologic information see boring log of 318-GW46

WELL DEVELOPMENT

LEGEND

Symbol Description

Monitor Well Details

Casing cap set in concrete

Empty casing set in concrete

Riser cap inside casing set in concrete

Cased riser set in concrete

Riser set in grout

Riser backfilled with bentonite

Riser backfilled with sand

Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | MCB Camp Lejeune | Date 3/31/2005 | LD4 LEG11x17 (11/02)

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW05
SHEET 1 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356199.9899 **EAST:** 2467048.629
INSPECTOR (SIGNED) J Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	0	0.00	8 x 7.5" round
		-0.1	0.10	Scheule 40 PVC, 2" ID
		-0.2	0.20	Portland Type 1, 3 - 94 lb bags + 10 lbs of Bentonite Powder
		-0.3	0.30	
		-0.6	0.60	
	3			
	6			
	9			
	12			
	15			
		-16	16.00	DSI 3/8" Bentonite Chips, 1.5 - 10 lb bags
	18	-18	18.00	DSI Filter Sand #1, 11 - 50 lb bags

EXTENDED READINGS

Well location in area of SWMU 318 GW25. For general geologic information see boring log for 318-GW25

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW05
SHEET 2 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356199.9899 **EAST:** 2467048.629
INSPECTOR (SIGNED) J Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV / DEPTH	WELL NOTES	EXTENDED READINGS
	21	-20 / 20.00	Johnson 10' section 0.010", schedule 40 PVC, 2" ID	Well location in area of SWMU 318 GW25. For general geologic information see boring log for 318-GW25
	24			
	27			
	30	30.00		WELL DEVELOPMENT
	33			
	36			
	39			

LEGEND

Symbol Description

Monitor Well Details

Casing cap set in concrete

Empty casing set in concrete

Riser cap inside casing set in concrete

Cased riser set in concrete

Riser set in grout

Riser backfilled with bentonite

Riser backfilled with sand

Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | MCB Camp Lejeune | Date 3/31/2005 | LD4 LEG11x17 (11/02)

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318MW05DW
SHEET 1 **OF** 3
DATE: START 2/18/2005
END 2/18/2005
O.G. ELEV. 19.182071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355728.6384 **EAST:** 2468226.918
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			2.5	62				CONCRETE	
1									
2	DP-1				0.2	SW		1.5 F-M SAND w/little silt; loose; gray and orange brown; dry	EL. 17.7
3					0.1	SP-SM		3.0 F. SAND with silt and little clay; stiff; orange brown and lt gray; dry	EL. 16.2
4	4.0		4	100	0.1			4.0 F-M SAND, trace silt; loose; med brown; dry	EL. 15.2 PID @ 4.0: hs=SW
5					0.3			5.0 F-M SAND, trace silt; loose; dk gray and brown; dry	EL. 14.2
6	DP-2				0.4			6.5 SILTY VF SAND, little clay; stiff; dk gray and dk brown; damp	EL. 12.7
7					0.5	SP			
8	8.0		3.5	88	0.3			trace wood debris; dk brown	EL. 11.2
9					0.4				
10	DP-3				0.5	CL		9.5 CLAY, trace silt; plasticity, stiff; gray w/ some orange; moist	EL. 9.7
11					0.5				
12	12.0		4	100	0.2				
13					0.6	SC		13.0 VF SAND, some clay (transitional fron above); gray; moist	EL. 6.2
14	DP-4				0.5				
15					0.3	SW		14.5 F-M SAND, trace silt; loose; lt gray to gray; wet	EL. 4.7
16	16.0		4	100	0.3				
17					0.5				
18	DP-5				0.5			saturated	EL. 1.2
19					0.5				
					0.5				

ENGINEERS FIELD BORING LOG

BKR_E_PID (LD4)
(02/05 Baker)

BORING NO. 318MW05DW
SHEET 2 **OF** 3
DATE: START 2/18/2005
END 2/18/2005
O.G. ELEV. 19.182071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION ____ **OFFSET** ____ **BASELINE** ____
COORDINATES: NORTH: 355728.6384 **EAST:** 2468226.918
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED ____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: ____ **DEPTH:** ____ **WATER: DEPTH:** ____ **TIME:** ____ **DATE:** ____
CHECKED BY: ____ **DATE:** ____ **DEPTH:** ____ **TIME:** ____ **DATE:** ____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** ____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20 — 20.0	DP-6		4	100	0.3				
21					0.4			21.0 F-M SAND; loose; lt green-gray; wet	EL. -1.8
22					0.4				
23					0.3				
24 — 24.0	DP-7		4	100	0.4			24.8 F-M SAND, trace to little silt; loose; olive green-gray; saturated	EL. -5.6
25					0.4				
26					0.4				
27					0.3				
28 — 28.0	DP-8		4	100		CL-SP		28.0 F-M SAND, some silt, trace clay; olive green-gray; moist	EL. -8.8
29									
30									Sampled TOD 318-MW05DW-15
31									
32									
33									
34									
35									
36									
37									
38									
39									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318MW05DW
SHEET 3 **OF** 3
DATE: START 2/18/2005
END 2/18/2005
O.G. ELEV. 19.182071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355728.6384 **EAST:** 2468226.918
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)* .	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40									
41									
42									
43									
44									
45	45.0							45.0	EL. -25.8
46									
47									
48									
49									
50									
51									
52									
53									
54									
55									
56									
57									
58									
59									

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318MW05DW
SHEET 1 **OF** 3
DATE: START 2/18/2005
END 2/18/2005
O.G. ELEV. 19.182071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355728.6384 **EAST:** 2468226.918
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES	EXTENDED READINGS
	0	9.1821	0.00	8" x 7.5" manhole cover	
		9.0821	0.10		
		8.9821	0.20	Portland Type 1, two - 94 lb bags & 10 lb bentonite powder	
		8.8821	0.30		
		8.5821	0.60		
	3				
	6				
	9				
	12				
	15				
	18				

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318MW05DW
SHEET 2 **OF** 3
DATE: START 2/18/2005
END 2/18/2005
O.G. ELEV. 19.182071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355728.6384 **EAST:** 2468226.918
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES	EXTENDED READINGS
	21				
	24				
	27				
	30				
	33	3.8179	33.00	DSI 3/8" bentonite, one - 50 lb bag	
	36				
	38	8.8179	38.00	Riser in sandpack	
	39				

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318MW05DW
SHEET 3 **OF** 3
DATE: START 2/18/2005
END 2/18/2005
O.G. ELEV. 19.182071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355728.6384 **EAST:** 2468226.918
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES	EXTENDED READINGS
	42	20.8179	40.00	Schedule 40 PVC. 0.01 slot, 2" id	
	45		45.00		
	48				
	51				WELL DEVELOPMENT
	54				
	57				

LEGEND

Symbol Description

STRATA SYMBOLS

- Concrete
- Well graded sand (SW)
- Poorly graded sand with silt (SP-SM)
- Poorly graded sand (SP)
- Low plasticity clay (CL)
- Clayey sand (SC)

Monitor Well Details

- Casing cap set in grout
- Empty casing set in concrete
- Riser cap inside casing set in grout
- Riser in empty hole
- Riser set in grout
- Riser backfilled with bentonite
- Riser backfilled with sand
- Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | MCB Camp Lejeune | Date 3/11/2005 | LD4 LEG11x17 (11/02)

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW06
SHEET 1 **OF** 2
DATE: START 2/16/2005
END 2/16/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 355717.6849 **EAST:** 2467635.079
INSPECTOR (SIGNED) J. Frank/ Ch2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	0	0.00	8 x 7.5" Round manhole
		-0.1	0.10	Schedule 40 PVC, 2" ID
		-0.2	0.20	Portland Type 1, 3 - 94 lb bags + 15 lbs of Bentonite Powder
		-0.3	0.30	
		-0.6	0.60	
	3			
	6			
	9			
	12			
	15			
		-16	16.00	DSI #/8" Bentonite Chips, 1 - 50 lb. bag
	18	-18	18.00	DSI Filter Sand #1, 10 - 50 lb bags

EXTENDED READINGS

Well location in area of SWMU 318 GW41. For general geologic information see boring log for 318-GW41

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW06
SHEET 2 **OF** 2
DATE: START 2/16/2005
END 2/16/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 355717.6849 **EAST:** 2467635.079
INSPECTOR (SIGNED) J. Frank/ Ch2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV / DEPTH	WELL NOTES	EXTENDED READINGS
		-20 / 20.00	Johnson 10' section, 0.010", Schedule 40 PVC, 2" ID	Well location in area of SWMU 318 GW41. For general geologic information see boring log for 318-GW41
	21			
	24			
	27			
	30	30.00		WELL DEVELOPMENT
	33			
	36			
	39			

LEGEND

Symbol Description

Monitor Well Details

- Casing cap set in concrete
- Empty casing set in concrete
- Riser cap inside casing set in concrete
- Cased riser set in concrete
- Riser set in grout
- Riser backfilled with bentonite
- Riser backfilled with sand
- Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | MCB Camp Lejeune | Date 3/31/2005 | LD4 LEG11x17 (11/02)

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. MW06DW
SHEET 1 **OF** 3
DATE: START
END
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: **EAST:**
INSPECTOR (SIGNED) **DRILLERS NAME/COMPANY**
EQUIPMENT USED
DRILLING METHODS
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	0	0.00	8 x 7.5" Round Manhole
		-0.1	0.10	Schedule 40 PVC, 2" ID
		-0.2	0.20	Portland Type 1 , 3 - 94lb bgs + 15 lbs Bentonite Powder
		-0.3	0.30	
		-0.6	0.60	
	3			
	6			
	9			
	12			
	15			
	18			

EXTENDED READINGS

Well location in area of SWMU 318 GW41. For general geologic information see boring log for 318-GW41.

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. MW06DW
SHEET 2 OF 3
DATE: START
END
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION OFFSET BASELINE
COORDINATES: NORTH: EAST:
INSPECTOR (SIGNED) DRILLERS NAME/COMPANY
EQUIPMENT USED
DRILLING METHODS
CASING: SIZE: DEPTH: WATER: DEPTH: TIME: DATE:
CHECKED BY: DATE: DEPTH: TIME: DATE:
S.O. NUMBER: 104559 FILE: Camp Lejeune NOT ENCOUNTERED ☐ INCLINATION (DEGREES):

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	21			
	24			
	27			
	30	-30	30.00	DSI 3/8" Bentonite Chips, 1 - 50 lb bag
	33			
	36			
	39	-37	37.00	DSI Filter Sand #1, 2 - 50 lb bags

EXTENDED READINGS

Well location in area of SWMU 318 GW41. For general geologic information see boring log for 318-GW41.

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. MW06DW
SHEET 3 **OF** 3
DATE: START
END
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: **EAST:**
INSPECTOR (SIGNED) **DRILLERS NAME/COMPANY**
EQUIPMENT USED
DRILLING METHODS
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
		-40	40.00	Johnson 10' section, 0.010", Schedule 40 PVC, 2" ID
	42			
	45		45.00	
	48			
	51			
	54			
	57			

EXTENDED READINGS

Well location in area of SWMU 318 GW41. For general geologic information see boring log for 318-GW41.

WELL DEVELOPMENT

LEGEND

Symbol Description

Monitor Well Details

- Casing cap set in concrete
- Empty casing set in concrete
- Riser cap inside casing set in concrete
- Cased riser set in concrete
- Riser set in grout
- Riser backfilled with bentonite
- Riser backfilled with sand
- Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | MCB Camp Lejeune | Date 3/31/2005 | LD4 LEG11x17 (11/02)

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-MW07
SHEET 1 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV. 17.321853

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355863.2735 **EAST:** 2466307.686
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			3.2	80				ASPHALT; black	
					0.0	SP		0.8	EL. 16.6
1								F-M SAND w/pebbles; loose; lt brown; dry	
					0.1				
2	DP-4					CL		2.0	EL. 15.3
					0.0			CLAY, some silt; plasticity, stiff; mottled gray to orange brown	
3									
					0.0				
4	4.0								
	4.0 X-1		3	75				No Recovery	EL. 13.3
5								Same as above	EL. 12.3
					0.0				
6	DP-2							6.0	EL. 11.3
					1.4	SW		ORGANIC LAYER; f. grained; black 6.5	EL. 10.8
7								F-M SAND, trace silt; loose; lt gray; wet 7.5	EL. 9.8
					0.8	SW-SP			
8	8.0		2	50				F-M SAND, little silt, areas of trace to little clay; loose; gray; wet	
					0.0				
9									
					0.0				
10	10.0 DP-3							No Recovery	EL. 7.3
11									
12	12.0 X-2		2	50					
13									
14	DP-4					SW		14.0	EL. 3.3
					0.0			M-C SAND; loose; dk gray; wet	
15						SM		15.0	EL. 2.3
					0.0	SW		SILTY SAND; stiff; green-gray; damp 15.5	EL. 1.8
16	16.0		4	100		SP		F-M SAND; loose; tan; wet to saturated 16.0	EL. 1.3
17					0.0			F-M SAND, trace silt; slightly dense; lt green-gray; wet	
					0.0				
18	DP-5					SM		18.0	EL. -0.7
					0.0			F-M SAND, some silt; med. dense; green-gray; moist to wet	
19						CL-SP		19.0	EL. -1.7
					0.0			F-M SAND, some silt, trace to little clay,	

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-MW07
SHEET 2 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV. 17.321853

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355863.2735 **EAST:** 2466307.686
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20.0			4	100				plasticity; olive green-gray; moist to wet	
21					0.0				
22	DP-6				0.0				Sample TOD 318-MW07-11 (21'-23')
23					0.0			F-M WEAK CEMENTED SAND, shell frags (grains are cemented in pebble size clumps; dense; lt gray; wet	EL. -5.7
24.0					0.0			24.0	EL. -6.7
								Bottom of Boring	

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW07
SHEET 1 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV. 17.321853

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355863.2735 **EAST:** 2466307.686
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	7.3219	0.00	8" x 7.5" manhole
		7.2219	0.10	
		7.1219	0.20	Portland Type 1, two - 94 lb. bags and 10 lbs of bentonite powder
		7.0219	0.30	
		6.7219	0.60	
	3			
	6			
	9	8.32185	9.00	DSI Bentonite 3/8" chips, 1.5 - 50 lb bags
		6.32185	11.00	Riser in sand pack
	12			
		4.32185	13.00	Johnson 10' section 0.01 slot, 2.0" id, Schedule 40 PVC
	15			
	18			

EXTENDED READINGS

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO.	318-MW07
SHEET	2 OF 2
DATE: START	2/15/2005
END	2/15/2005
O.G. ELEV.	17.321853

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355863.2735 **EAST:** 2466307.686
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV / DEPTH	WELL NOTES	EXTENDED READINGS
	21			
	24	24.00		
	27			
	30			WELL DEVELOPMENT
	33			
	36			
	39			

LEGEND

Symbol Description

STRATA SYMBOLS

Asphalt

Poorly graded sand (SP)

Low plasticity clay (CL)

Clay, Gravelly

Well graded sand (SW)

Interlayered well/ poorly graded sand (SW-SP)

Silty sand (SM)

Poorly graded silty fine sand (SM-ML)

Monitor Well Details

Casing cap set in grout

Empty casing set in concrete

Riser cap inside casing set in grout

Riser in empty hole

Riser set in grout

Riser backfilled with bentonite

Riser backfilled with sand

Screen backfilled with sand

● Test Boring Location
X Geologic Observation Location

BORING LOCATION PLAN

Baker

CTO-0091/ RFI SWMU 318

MCB Camp Lejeune

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | Date 3/11/2005 | LD4 LEG11x17 (11/02)

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW08
SHEET 1 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 355614.2137 **EAST:** 2466736.77
INSPECTOR (SIGNED) J. Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	0	0.00	8 x 7.5 Round manhole
		-0.1	0.10	
		-0.2	0.20	Schedule 40 PVC, 2" ID
		-0.3	0.30	Portland Type 1, 3 - 94 lb. bags + 10 lbs Bentonite Powder
		-0.6	0.60	
	3			
	6			
	9			
	12			
	15			
		-16	16.00	DSI 3/8" Bentonite Chips, 1 - 50 lb bag
	18	-17.9	17.90	DSI Filter Sand #1, 12 - 50 lb bags

EXTENDED READINGS

Well location in area of SWMU 318 GW35. For general geologic information see boring log for 318-GW35

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW08
SHEET 2 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 355614.2137 **EAST:** 2466736.77
INSPECTOR (SIGNED) J. Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES	EXTENDED READINGS
	21	-20	20.00	Johnson 10' section, Schedule 40 PVC, 0.010", 2" ID	Well location in area of SWMU 318 GW35. For general geologic information see boring log for 318-GW35
	24				
	27				
	30		30.00		WELL DEVELOPMENT
	33				
	36				
	39				

LEGEND

Symbol Description

Monitor Well Details

Casing cap set in concrete

Empty casing set in concrete

Riser cap inside casing set in concrete

Cased riser set in concrete

Riser set in grout

Riser backfilled with bentonite

Riser backfilled with sand

Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559	File: Camp Lejeune	MCB Camp Lejeune	Date 3/31/2005	LD4 LEG11x17 (11/02)

APPENDIX A

Well Construction Records

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEWIS LEFEVER CERTIFICATION # 2480

WELL CONTRACTOR COMPANY NAME PARRATT-WOLFF, INC. PHONE # (919) 644-2814

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ ASSOCIATED WQ PERMIT# (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐
   Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION:
   Nearest Town: JACKSONVILLE County ONSLOW
   MARINE CORPS BASE
   (Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

3. OWNER: US MARINE CORPS
   Address _____
   (Street or Route No.)
   JACKSONVILLE NC 28547
   City or Town State Zip Code
   (____)-_____
   Area code- Phone number

4. DATE DRILLED 3/30/04
5. TOTAL DEPTH: 30.0'
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 12.0 FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
   ***Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.**
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From 0	To 15	Ft.	2"	SCH 40	PVC
From	To	Ft.			
From	To	Ft.			

13. GROUT:

	Depth		Material	Method
From 0	To 15	Ft.	PORTLAND	TREMIE
From 15	To 17.5	Ft.	BENTONITE	TREMIE

14. SCREEN:

	Depth		Diameter	Slot Size	Material
From 15	To 30	Ft.	2 in.	.010 in.	PVC
From	To	Ft.	in.	in.	

15. SAND/GRAVEL PACK:

	Depth		Size	Material
From 17.5	To 30	Ft.	#1	SAND
From	To	Ft.		

16. REMARKS: MW-01 SEE MAP ON BACK

Topographic/Land setting
☐Ridge ☐Slope ☐Valley ☐Flat
(check appropriate box)
Latitude/longitude of well location
N34 44.651'/W77 25.039'
(degrees/minutes/seconds)
Latitude/longitude source: ☐GPS ☒Topographic map
(check box)

DEPTH From	To	DRILLING LOG Formation Description
NO SAMPLES TAKEN		

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

Lewis LeFever 5-3-04

SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days. GW-1 REV. 07/2001

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEWIS LEFEVER CERTIFICATION # 2480

WELL CONTRACTOR COMPANY NAME PARRATT-WOLFF, INC. PHONE # (919) 644-2814

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ ASSOCIATED WQ PERMIT# (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐
   Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION:
   Nearest Town: JACKSONVILLE County ONSLOW
   MARINE CORPS BASE
   (Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

3. OWNER: US MARINE CORPS
   Address _____
   (Street or Route No.)
   JACKSONVILLE NC 28547
   City or Town State Zip Code
   (____)-_____
   Area code- Phone number

4. DATE DRILLED 3/31/04
5. TOTAL DEPTH: 30.0'
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 12.0 FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
   ***Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.**
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From 0	To 20	Ft.	2"	SCH 40	PVC
From	To	Ft.			
From	To	Ft.			

13. GROUT:

	Depth		Material	Method
From 0	To 15	Ft.	PORTLAND	TREMIE
From 15	To 18	Ft.	BENTONITE	TREMIE

14. SCREEN:

	Depth		Diameter		Slot Size		Material
From 20	To 30	Ft.	2	in.	.010	in.	PVC
From	To	Ft.		in.		in.	

15. SAND/GRAVEL PACK:

	Depth		Size	Material
From 18	To 30	Ft.	#1	SAND
From	To	Ft.		

16. REMARKS: MW-02 SEE MAP ON BACK

Topographic/Land setting
☐Ridge ☐Slope ☐Valley ☐Flat
(check appropriate box)
Latitude/longitude of well location
N34 44.651'/W77 25.039'
(degrees/minutes/seconds)
Latitude/longitude source: ☐GPS ☒Topographic map
(check box)

DEPTH From	To	DRILLING LOG Formation Description
NO SAMPLES TAKEN		

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

_____ 5-3-04

SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEWIS LEFEVER **CERTIFICATION #** 2480

WELL CONTRACTOR COMPANY NAME PARRATT-WOLFF, INC. **PHONE #** (919) 644-2814

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ **ASSOCIATED WQ PERMIT#** (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐ Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION:
   Nearest Town: JACKSONVILLE County ONSLOW
   MARINE CORPS BASE
   (Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

3. OWNER: US MARINE CORPS
   Address _____
   (Street or Route No.)
   JACKSONVILLE NC 28547
   City or Town State Zip Code
   (____)-_____
   Area code- Phone number

4. DATE DRILLED 3/31/04
5. TOTAL DEPTH: 30.0'
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 12.0 FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
   ***Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.**
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From 0	To 20	Ft.	2"	SCH 40	PVC
From	To	Ft.			
From	To	Ft.			

13. GROUT:

	Depth		Material	Method
From 0	To 16	Ft.	PORTLAND	TREMIE
From 16	To 18	Ft.	BENTONITE	TREMIE

14. SCREEN:

	Depth		Diameter		Slot Size		Material
From 20	To 30	Ft.	2	in.	.010	in.	PVC
From	To	Ft.		in.		in.	

15. SAND/GRAVEL PACK:

	Depth		Size	Material
From 18	To 30	Ft.	#1	SAND
From	To	Ft.		

16. REMARKS: MW-03 SEE MAP ON BACK

Topographic/Land setting
☐Ridge ☐Slope ☐Valley ☐Flat
(check appropriate box)
Latitude/longitude of well location
N34 44.651'/W77 25.039'
(degrees/minutes/seconds)
Latitude/longitude source: ☐GPS ☒Topographic map
(check box)

DEPTH From	To	DRILLING LOG Formation Description
NO SAMPLES TAKEN		

LOCATION SKETCH

Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

[signature] 5-3-04

SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEWIS LEFEVER CERTIFICATION # 2480

WELL CONTRACTOR COMPANY NAME PARRATT-WOLFF, INC. PHONE # (919) 644-2814

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ ASSOCIATED WQ PERMIT# (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐ Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION:
   Nearest Town: JACKSONVILLE County ONSLOW
   MARINE CORPS AIR STATION - CAMP LEJEUNE
   (Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

3. OWNER: US MARINE CORPS
   Address _____
   (Street or Route No.)
   JACKSONVILLE NC 28547
   City or Town State Zip Code
   (___)-_____
   Area code- Phone number

4. DATE DRILLED 2/14/05
5. TOTAL DEPTH: 30.0'
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 11.0 FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
   ***Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.**
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From 0	To 20	Ft.	2"	SCH 40	PVC
From	To	Ft.			
From	To	Ft.			

13. GROUT:

	Depth		Material	Method
From 0	To 15	Ft.	PORTLAND	TREMIE
From 15	To 18	Ft.	BENTONITE	TREMIE

14. SCREEN:

	Depth		Diameter		Slot Size		Material
From 20	To 30	Ft.	2	in.	.010	in.	PVC
From	To	Ft.		in.		in.	

15. SAND/GRAVEL PACK:

	Depth		Size	Material
From 18	To 30	Ft.	#1	SAND
From	To	Ft.		

16. REMARKS: 318-MW04

Topographic/Land setting
☐Ridge ☐Slope ☐Valley ☐Flat
(check appropriate box)

Latitude/longitude of well location
N34 44.20'/W77 27.34'
(degrees/minutes/seconds)

Latitude/longitude source: ☐GPS ☐Topographic map
(check box)

DEPTH From	To	DRILLING LOG Formation Description
NO SAMPLES TAKEN		

LOCATION SKETCH

Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

Lewis J LeFever 3-2-05

SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days. GW-1 REV. 07/2001

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEWIS LEFEVER **CERTIFICATION #** 2480

WELL CONTRACTOR COMPANY NAME PARRATT-WOLFF, INC. **PHONE #** (919) 644-2814

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ **ASSOCIATED WQ PERMIT#** (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐ Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION:
   Nearest Town: JACKSONVILLE County ONSLOW
   MARINE CORPS AIR STATION - CAMP LEJEUNE
   (Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

3. OWNER: US MARINE CORPS
   Address _____
   (Street or Route No.)
   JACKSONVILLE NC 28547
   City or Town State Zip Code
   (___)-_____
   Area code- Phone number

4. DATE DRILLED 2/17/05
5. TOTAL DEPTH: 45.0'
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 10.0 FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
   ***Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.**
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From	0	To 40	Ft. 2"	SCH 40	PVC
From		To	Ft.		
From		To	Ft.		

13. GROUT:

	Depth		Material	Method
From	0	To 35	Ft. PORTLAND	TREMIE
From	35	To 38	Ft. BENTONITE	TREMIE

14. SCREEN:

	Depth		Diameter	Slot Size	Material
From	40	To 45	Ft. 2 in.	.010 in.	PVC
From		To	Ft. in.	in.	

15. SAND/GRAVEL PACK:

	Depth		Size	Material
From	38	To 45	Ft. #1	SAND
From		To	Ft.	

16. REMARKS: 318-MW[redacted] 04DW

Topographic/Land setting
☐Ridge ☐Slope ☐Valley ☐Flat
(check appropriate box)

Latitude/longitude of well location
N34 44.20'/W77 27.34'
(degrees/minutes/seconds)

Latitude/longitude source: ☐GPS ☐Topographic map
(check box)

DEPTH From	To	DRILLING LOG Formation Description
NO SAMPLES TAKEN		

LOCATION SKETCH

Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

James S Le Jr 3-2-05

SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEWIS LEFEVER CERTIFICATION # 2480

WELL CONTRACTOR COMPANY NAME PARRATT-WOLFF, INC. PHONE # (919) 644-2814

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ ASSOCIATED WQ PERMIT# (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐ Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION:
Nearest Town: JACKSONVILLE County ONSLOW
MARINE CORPS AIR STATION - CAMP LEJEUNE
(Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

3. OWNER: US MARINE CORPS
Address _____
(Street or Route No.)
JACKSONVILLE NC 28547
City or Town State Zip Code
(___)-_____
Area code- Phone number

4. DATE DRILLED 2/15/05
5. TOTAL DEPTH: 30.0'
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 12.0 FT.
(Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
***Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.**
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From 0	To 20	Ft.	2"	SCH 40	PVC
From	To	Ft.			
From	To	Ft.			

13. GROUT:

	Depth		Material	Method
From 0	To 16	Ft.	PORTLAND	TREMIE
From 16	To 18	Ft.	BENTONITE	TREMIE

14. SCREEN:

	Depth		Diameter		Slot Size		Material
From 20	To 30	Ft.	2	in.	.010	in.	PVC
From	To	Ft.		in.		in.	

15. SAND/GRAVEL PACK:

	Depth		Size	Material
From 18	To 30	Ft.	#1	SAND
From	To	Ft.		

16. REMARKS: 318-MW05

Topographic/Land setting
☐Ridge ☐Slope ☐Valley ☐Flat
(check appropriate box)
Latitude/longitude of well location
N34 44.20'/W77 27.34'
(degrees/minutes/seconds)
Latitude/longitude source: ☐GPS ☐Topographic map
(check box)

DEPTH From	To	DRILLING LOG Formation Description
NO SAMPLES TAKEN		

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

James S Lefever 3-2-05
SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEWIS LEFEVER CERTIFICATION # 2480

WELL CONTRACTOR COMPANY NAME PARRATT-WOLFF, INC. PHONE # (919) 644-2814

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ ASSOCIATED WQ PERMIT# (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐
   Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION:
   Nearest Town: JACKSONVILLE County ONSLOW
   MARINE CORPS AIR STATION - CAMP LEJEUNE
   (Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

   Topographic/Land setting
   ☐Ridge ☐Slope ☐Valley ☐Flat
   (check appropriate box)
   Latitude/longitude of well location
   N34 44.20'/W77 27.34'
   (degrees/minutes/seconds)
   Latitude/longitude source: ☐GPS ☐Topographic map
   (check box)

3. OWNER: US MARINE CORPS
   Address _____
   (Street or Route No.)
   JACKSONVILLE NC 28547
   City or Town State Zip Code
   (___)-_____
   Area code- Phone number

4. DATE DRILLED 2/18/05
5. TOTAL DEPTH: 45.0'
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 10.0 FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
   ***Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.**
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From 0	To 40	Ft.	2"	SCH 40	PVC
From	To	Ft.			
From	To	Ft.			

13. GROUT:

	Depth		Material	Method
From 0	To 33	Ft.	PORTLAND	TREMIE
From 33	To 38	Ft.	BENTONITE	TREMIE

14. SCREEN:

	Depth		Diameter		Slot Size		Material
From 40	To 45	Ft.	2	in.	.010	in.	PVC
From	To	Ft.		in.		in.	

15. SAND/GRAVEL PACK:

	Depth		Size	Material
From 38	To 45	Ft.	#1	SAND
From	To	Ft.		

16. REMARKS: 318-MW05DW

DEPTH From	DEPTH To	DRILLING LOG Formation Description
NO SAMPLES TAKEN		

LOCATION SKETCH

Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

SIGNATURE OF PERSON CONSTRUCTING THE WELL — DATE 3-2-05

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEWIS LEFEVER **CERTIFICATION #** 2480

WELL CONTRACTOR COMPANY NAME PARRATT-WOLFF, INC. **PHONE #** (919) 644-2814

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ **ASSOCIATED WQ PERMIT#** (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐
   Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION:
   Nearest Town: JACKSONVILLE County ONSLOW
   MARINE CORPS AIR STATION - CAMP LEJEUNE
   (Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

   Topographic/Land setting
   ☐Ridge ☐Slope ☐Valley ☐Flat
   (check appropriate box)
   Latitude/longitude of well location
   N34 44.20'/W77 27.34'
   (degrees/minutes/seconds)
   Latitude/longitude source: ☐GPS ☐Topographic map
   (check box)

3. OWNER: US MARINE CORPS
   Address _____
   (Street or Route No.)
   JACKSONVILLE NC 28547
   City or Town State Zip Code
   (___)-_____
   Area code- Phone number

4. DATE DRILLED 2/16/05
5. TOTAL DEPTH: 23.0'
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 10.0 FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
   ***Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.**
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A

DEPTH From	DEPTH To	DRILLING LOG Formation Description
NO SAMPLES TAKEN		

11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From 0	To 20	Ft.	2"	SCH 40	PVC
From	To	Ft.			
From	To	Ft.			

13. GROUT:

	Depth		Material	Method
From 0	To 16	Ft.	PORTLAND	TREMIE
From 16	To 18	Ft.	BENTONITE	TREMIE

14. SCREEN:

	Depth		Diameter		Slot Size		Material
From 20	To 30	Ft.	2	in.	.010	in.	PVC
From	To	Ft.		in.		in.	

15. SAND/GRAVEL PACK:

	Depth		Size	Material
From 18	To 30	Ft.	#1	SAND
From	To	Ft.		

LOCATION SKETCH

Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

16. REMARKS: 318-MW06S

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

_____ 3-2-05
SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEWIS LEFEVER CERTIFICATION # 2480

WELL CONTRACTOR COMPANY NAME PARRATT-WOLFF, INC. PHONE # (919) 644-2814

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ ASSOCIATED WQ PERMIT# (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐ Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION:
Nearest Town: JACKSONVILLE County ONSLOW
MARINE CORPS AIR STATION - CAMP LEJEUNE
(Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

3. OWNER: US MARINE CORPS
Address _____
(Street or Route No.)
JACKSONVILLE NC 28547
City or Town State Zip Code
(___)-_____
Area code- Phone number

4. DATE DRILLED 2/17/05
5. TOTAL DEPTH: 45.0'
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 10.0 FT.
(Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
***Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.**
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From 0	To 40	Ft.	2"	SCH 40	PVC
From	To	Ft.			
From	To	Ft.			

13. GROUT:

	Depth		Material	Method
From 0	To 30	Ft.	PORTLAND	TREMIE
From 30	To 36	Ft.	BENTONITE	TREMIE

14. SCREEN:

	Depth		Diameter		Slot Size		Material
From 40	To 45	Ft.	2	in.	.010	in.	PVC
From	To	Ft.		in.		in.	

15. SAND/GRAVEL PACK:

	Depth		Size	Material
From 36	To 45	Ft.	#1	SAND
From	To	Ft.		

16. REMARKS: 318-MW06DW

Topographic/Land setting
☐Ridge ☐Slope ☐Valley ☐Flat
(check appropriate box)
Latitude/longitude of well location
N34 44.20'/W77 27.34'
(degrees/minutes/seconds)
Latitude/longitude source: ☐GPS ☐Topographic map
(check box)

DEPTH From	To	DRILLING LOG Formation Description
NO SAMPLES TAKEN		

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

James S Lee 3-2-05
SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEWIS LEFEVER CERTIFICATION # 2480

WELL CONTRACTOR COMPANY NAME PARRATT-WOLFF, INC. PHONE # (919) 644-2814

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ ASSOCIATED WQ PERMIT# (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐
   Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION:
   Nearest Town: JACKSONVILLE County ONSLOW
   MARINE CORPS AIR STATION - CAMP LEJEUNE
   (Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

3. OWNER: US MARINE CORPS
   Address _____
   (Street or Route No.)
   JACKSONVILLE NC 28547
   City or Town State Zip Code
   (___)-_____
   Area code- Phone number

4. DATE DRILLED 2/16/05
5. TOTAL DEPTH: 23.0'
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 8.0 FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
   ***Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.**
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From 0	To 13	Ft.	2"	SCH 40	PVC
From	To	Ft.			
From	To	Ft.			

13. GROUT:

	Depth		Material	Method
From 0	To 9	Ft.	PORTLAND	TREMIE
From 9	To 11	Ft.	BENTONITE	TREMIE

14. SCREEN:

	Depth		Diameter		Slot Size		Material
From 13	To 23	Ft.	2	in.	.010	in.	PVC
From	To	Ft.		in.		in.	

15. SAND/GRAVEL PACK:

	Depth		Size	Material
From 11	To 23	Ft.	#1	SAND
From	To	Ft.		

16. REMARKS: 318-MW07

Topographic/Land setting
☐Ridge ☐Slope ☐Valley ☐Flat
(check appropriate box)

Latitude/longitude of well location
N34 44.20'/W77 27.34'
(degrees/minutes/seconds)

Latitude/longitude source: ☐GPS ☐Topographic map
(check box)

DEPTH From	To	DRILLING LOG Formation Description
NO SAMPLES TAKEN		

LOCATION SKETCH

Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

James S Lefever 3-2-05

SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEWIS LEFEVER **CERTIFICATION #** 2480

WELL CONTRACTOR COMPANY NAME PARRATT-WOLFF, INC. **PHONE #** (919) 644-2814

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ **ASSOCIATED WQ PERMIT#** (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐ Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION:
   Nearest Town: JACKSONVILLE County ONSLOW
   MARINE CORPS AIR STATION - CAMP LEJEUNE
   (Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

3. OWNER: US MARINE CORPS
   Address _____
   (Street or Route No.)
   JACKSONVILLE NC 28547
   City or Town State Zip Code
   (___)-_____
   Area code- Phone number

4. DATE DRILLED 2/15/05
5. TOTAL DEPTH: 30.0'
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 10.0 FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
   ***Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.**
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From 0	To 20	Ft.	2"	SCH 40	PVC
From	To	Ft.			
From	To	Ft.			

13. GROUT:

	Depth		Material	Method
From 0	To 16	Ft.	PORTLAND	TREMIE
From 16	To 18	Ft.	BENTONITE	TREMIE

14. SCREEN:

	Depth		Diameter		Slot Size		Material
From 20	To 30	Ft.	2	in.	.010	in.	PVC
From	To	Ft.		in.		in.	

15. SAND/GRAVEL PACK:

	Depth		Size	Material
From 18	To 30	Ft.	#1	SAND
From	To	Ft.		

16. REMARKS: 318-MW08

Topographic/Land setting
☐Ridge ☐Slope ☐Valley ☐Flat
(check appropriate box)
Latitude/longitude of well location
N34 44.20'/W77 27.34'
(degrees/minutes/seconds)
Latitude/longitude source: ☐GPS ☐Topographic map
(check box)

DEPTH From	To	DRILLING LOG Formation Description
NO SAMPLES TAKEN		

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

James S Lefever 3-2-05
SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

Baker

Michael Baker Jr., Inc.

APPENDIX A

Boring Logs 2005

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW04
SHEET 1 **OF** 2
DATE: START 2/14/2005
END 2/14/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356090.2324 **EAST:** 2466727.811
INSPECTOR (SIGNED) J. Frank (CH2MHill) **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	0	0.00	8" x 7.5" Manhole cover
		-0.1	0.10	
		-0.2	0.20	Johnson 10' section, 0.010 screen,
		-0.3	0.30	
		-0.6	0.60	2" ID, Schedule 40 PVC
	3			Portland Type 1, 3 - 94 lb. bags + 19 lbs. of Hyield Bentonite powder
	6			
	9			
	12			
	15	-15	15.00	DSI Bentonite 3/8" chips, 3 - 50 lb. bags
	18	-18	18.00	DSI Filter sand #1, 11.5 - 50 lb. bags

EXTENDED READINGS

Well location in area of SWMU 318-GW38. For general geologic profile see boring log of 318-GW38

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW04
SHEET 2 **OF** 2
DATE: START 2/14/2005
END 2/14/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356090.2324 **EAST:** 2466727.811
INSPECTOR (SIGNED) J. Frank (CH2MHill) **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV / DEPTH	WELL NOTES	EXTENDED READINGS
	21	-20 / 20.00	Johnson 10' section, Schedule 40 PVC, 0.010", 2" ID	Well location in area of SWMU 318-GW38. For general geologic profile see boring log of 318-GW38
	24			
	27			
	30	30.00		WELL DEVELOPMENT
	33			
	36			
	39			

LEGEND

Symbol Description

Monitor Well Details

- Casing cap set in concrete
- Empty casing set in concrete
- Riser cap inside casing set in concrete
- Cased riser set in concrete
- Riser set in grout
- Riser backfilled with bentonite
- Riser backfilled with sand
- Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | MCB Camp Lejeune | Date 3/31/2005 | LD4 LEG11x17 (11/02)

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. MW04DW
SHEET 1 **OF** 3
DATE: START 2/17/2005
END 2/17/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356081.5433 **EAST:** 2468425.196
INSPECTOR (SIGNED) J. Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS Mud Rotary
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	0	0.00	8 x 7.5 Round Manhole
		-0.1	0.10	Schedule 40 PVC - 2" ID
		-0.2	0.20	Portland Type 1, 2 - 94 lb. bags + 10 lbs bentonite powder
		-0.3	0.30	
		-0.6	0.60	
	3			
	6			
	9			
	12			
	15			
	18			

EXTENDED READINGS

Well location in area of SWMU 318 GW46. For generalgeologic information see boring log of 318-GW46

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. MW04DW
SHEET 2 **OF** 3
DATE: START 2/17/2005
END 2/17/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356081.5433 **EAST:** 2468425.196
INSPECTOR (SIGNED) J. Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS Mud Rotary
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	21			
	24			
	27			
	30			
		-32	32.00	DSI 3/8" Bentonite chips. 1 - 50 lb. bag
	33			
	36			
		-38	38.00	DSI Filter Sand, 1.75 - 50 lb bags
	39			

EXTENDED READINGS

Well location in area of SWMU 318 GW46. For generalgeologic information see boring log of 318-GW46

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. MW04DW
SHEET 3 **OF** 3
DATE: START 2/17/2005
END 2/17/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356081.5433 **EAST:** 2468425.196
INSPECTOR (SIGNED) J. Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS Mud Rotary
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
		-40	40.00	Johnson 10' screen 0.010", Schedule 40 PVC - 2" ID
	42			
	45		45.00	
	48			
	51			
	54			
	57			

EXTENDED READINGS

Well location in area of SWMU 318 GW46. For generalgeologic information see boring log of 318-GW46

WELL DEVELOPMENT

LEGEND

Symbol Description

Monitor Well Details

Casing cap set in concrete

Empty casing set in concrete

Riser cap inside casing set in concrete

Cased riser set in concrete

Riser set in grout

Riser backfilled with bentonite

Riser backfilled with sand

Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | MCB Camp Lejeune | Date 3/31/2005 | LD4 LEG11x17 (11/02)

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW05
SHEET 1 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356199.9899 **EAST:** 2467048.629
INSPECTOR (SIGNED) J Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	0	0.00	8 x 7.5" round
		-0.1	0.10	Scheule 40 PVC, 2" ID
		-0.2	0.20	Portland Type 1, 3 - 94 lb bags + 10 lbs of Bentonite Powder
		-0.3	0.30	
		-0.6	0.60	
	3			
	6			
	9			
	12			
	15			
		-16	16.00	DSI 3/8" Bentonite Chips, 1.5 - 10 lb bags
	18	-18	18.00	DSI Filter Sand #1, 11 - 50 lb bags

EXTENDED READINGS

Well location in area of SWMU 318 GW25. For general geologic information see boring log for 318-GW25

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW05
SHEET 2 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 356199.9899 **EAST:** 2467048.629
INSPECTOR (SIGNED) J Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV / DEPTH	WELL NOTES	EXTENDED READINGS
	21	-20 / 20.00	Johnson 10' section 0.010", schedule 40 PVC, 2" ID	Well location in area of SWMU 318 GW25. For general geologic information see boring log for 318-GW25
	24			
	27			
	30	30.00		WELL DEVELOPMENT
	33			
	36			
	39			

LEGEND

Symbol Description

Monitor Well Details

Casing cap set in concrete

Empty casing set in concrete

Riser cap inside casing set in concrete

Cased riser set in concrete

Riser set in grout

Riser backfilled with bentonite

Riser backfilled with sand

Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | MCB Camp Lejeune | Date 3/31/2005 | LD4 LEG11x17 (11/02)

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318MW05DW
SHEET 1 **OF** 3
DATE: START 2/18/2005
END 2/18/2005
O.G. ELEV. 19.182071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355728.6384 **EAST:** 2468226.918
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)* .	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			2.5	62				CONCRETE	
1									
2	DP-1				0.2	SW		1.5 F-M SAND w/little silt; loose; gray and orange brown; dry	EL. 17.7
3					0.1	SP-SM		3.0 F. SAND with silt and little clay; stiff; orange brown and lt gray; dry	EL. 16.2
4	4.0		4	100	0.1			4.0 F-M SAND, trace silt; loose; med brown; dry	EL. 15.2 PID @ 4.0: hs=SW
5					0.3			5.0 F-M SAND, trace silt; loose; dk gray and brown; dry	EL. 14.2
6	DP-2				0.4			6.5 SILTY VF SAND, little clay; stiff; dk gray and dk brown; damp	EL. 12.7
7					0.5	SP			
8	8.0		3.5	88	0.3			trace wood debris; dk brown	EL. 11.2
9					0.4				
10	DP-3				0.5	CL		9.5 CLAY, trace silt; plasticity, stiff; gray w/ some orange; moist	EL. 9.7
11					0.5				
12	12.0		4	100	0.2				
13					0.6	SC		13.0 VF SAND, some clay (transitional fron above); gray; moist	EL. 6.2
14	DP-4				0.5				
15					0.3	SW		14.5 F-M SAND, trace silt; loose; lt gray to gray; wet	EL. 4.7
16	16.0		4	100	0.3				
17					0.5				
18	DP-5				0.5			saturated	EL. 1.2
19					0.5				
					0.5				

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318MW05DW
SHEET 2 OF 3
DATE: START 2/18/2005
END 2/18/2005
O.G. ELEV. 19.182071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION ______ OFFSET ______ BASELINE ______
COORDINATES: NORTH: 355728.6384 EAST: 2468226.918
INSPECTOR (SIGNED) J. Frank/ CH2MHILL DRILLERS NAME/COMPANY Parratt Wolff
EQUIPMENT USED ______
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: ______ DEPTH: ______ WATER: DEPTH: ______ TIME: ______ DATE: ______
CHECKED BY: ______ DATE: ______ DEPTH: ______ TIME: ______ DATE: ______
S.O. NUMBER: 104559 FILE: Camp NOT ENCOUNTERED ☐ INCLINATION (DEGREES): ______

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or FID (ppm)	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20.0			4	100					
					0.3				
21								21.0 F-M SAND; loose; lt green-gray; wet	EL. -1.8
22	DP-6				0.4				
23					0.4				
24.0			4	100	0.3				
25					0.4			24.8 F-M SAND, trace to little silt; loose; olive green-gray; saturated	EL. -5.6
26	DP-7				0.4				
27					0.4				
28.0			4	100	0.3	CL-SP		28.0 F-M SAND, some silt, trace clay; olive green-gray; moist	EL. -8.8
29									
30	DP-8								Sampled TOD 318-MW05DW-15
31									
32									
33									
34									
35									
36									
37									
38									
39									

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318MW05DW
SHEET 3 **OF** 3
DATE: START 2/18/2005
END 2/18/2005
O.G. ELEV. 19.182071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355728.6384 **EAST:** 2468226.918
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) ---------- RQD (FT.)	RECOVERY (%) ---------- RQD (%)	PID (ppm) or *FID (ppm)* .	USCS ---------- AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
40									
41									
42									
43									
44									
45	45.0							45.0	EL. -25.8
46									
47									
48									
49									
50									
51									
52									
53									
54									
55									
56									
57									
58									
59									

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318MW05DW
SHEET 1 **OF** 3
DATE: START 2/18/2005
END 2/18/2005
O.G. ELEV. 19.182071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355728.6384 **EAST:** 2468226.918
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES	EXTENDED READINGS
	0	9.1821	0.00	8" x 7.5" manhole cover	
		9.0821	0.10		
		8.9821	0.20	Portland Type 1, two - 94 lb bags & 10 lb bentonite powder	
		8.8821	0.30		
		8.5821	0.60		
	3				
	6				
	9				
	12				
	15				
	18				

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318MW05DW
SHEET 2 **OF** 3
DATE: START 2/18/2005
END 2/18/2005
O.G. ELEV. 19.182071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355728.6384 **EAST:** 2468226.918
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES	EXTENDED READINGS
	21				
	24				
	27				
	30				
	33	3.8179	33.00	DSI 3/8" bentonite, one - 50 lb bag	
	36				
	38	8.8179	38.00	Riser in sandpack	
	39				

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318MW05DW
SHEET 3 **OF** 3
DATE: START 2/18/2005
END 2/18/2005
O.G. ELEV. 19.182071

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355728.6384 **EAST:** 2468226.918
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES	EXTENDED READINGS
	42	20.8179	40.00	Schedule 40 PVC. 0.01 slot, 2" id	
	45		45.00		
	48				
	51				WELL DEVELOPMENT
	54				
	57				

LEGEND

Symbol Description

STRATA SYMBOLS

- Concrete
- Well graded sand (SW)
- Poorly graded sand with silt (SP-SM)
- Poorly graded sand (SP)
- Low plasticity clay (CL)
- Clayey sand (SC)

Monitor Well Details

- Casing cap set in grout
- Empty casing set in concrete
- Riser cap inside casing set in grout
- Riser in empty hole
- Riser set in grout
- Riser backfilled with bentonite
- Riser backfilled with sand
- Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | MCB Camp Lejeune | Date 3/11/2005 | LD4 LEG11x17 (11/02)

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW06
SHEET 1 **OF** 2
DATE: START 2/16/2005
END 2/16/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 355717.6849 **EAST:** 2467635.079
INSPECTOR (SIGNED) J. Frank/ Ch2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	0	0.00	8 x 7.5" Round manhole
		-0.1	0.10	Schedule 40 PVC, 2" ID
		-0.2	0.20	Portland Type 1, 3 - 94 lb bags + 15 lbs of Bentonite Powder
		-0.3	0.30	
		-0.6	0.60	
	3			
	6			
	9			
	12			
	15			
		-16	16.00	DSI #/8" Bentonite Chips, 1 - 50 lb. bag
	18	-18	18.00	DSI Filter Sand #1, 10 - 50 lb bags

EXTENDED READINGS

Well location in area of SWMU 318 GW41. For general geologic information see boring log for 318-GW41

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW06
SHEET 2 **OF** 2
DATE: START 2/16/2005
END 2/16/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 355717.6849 **EAST:** 2467635.079
INSPECTOR (SIGNED) J. Frank/ Ch2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV / DEPTH	WELL NOTES	EXTENDED READINGS
		-20 / 20.00	Johnson 10' section, 0.010", Schedule 40 PVC, 2" ID	Well location in area of SWMU 318 GW41. For general geologic information see boring log for 318-GW41
	21			
	24			
	27			
	30	30.00		WELL DEVELOPMENT
	33			
	36			
	39			

LEGEND

Symbol Description

Monitor Well Details

- Casing cap set in concrete
- Empty casing set in concrete
- Riser cap inside casing set in concrete
- Cased riser set in concrete
- Riser set in grout
- Riser backfilled with bentonite
- Riser backfilled with sand
- Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | MCB Camp Lejeune | Date 3/31/2005 | LD4 LEG11x17 (11/02)

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. MW06DW
SHEET 1 **OF** 3
DATE: START
END
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: **EAST:**
INSPECTOR (SIGNED) **DRILLERS NAME/COMPANY**
EQUIPMENT USED
DRILLING METHODS
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	0	0.00	8 x 7.5" Round Manhole
		-0.1	0.10	Schedule 40 PVC, 2" ID
		-0.2	0.20	Portland Type 1 , 3 - 94lb bgs + 15 lbs Bentonite Powder
		-0.3	0.30	
		-0.6	0.60	
	3			
	6			
	9			
	12			
	15			
	18			

EXTENDED READINGS

Well location in area of SWMU 318 GW41. For general geologic information see boring log for 318-GW41.

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. MW06DW
SHEET 2 OF 3
DATE: START
END
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION OFFSET BASELINE
COORDINATES: NORTH: EAST:
INSPECTOR (SIGNED) DRILLERS NAME/COMPANY
EQUIPMENT USED
DRILLING METHODS
CASING: SIZE: DEPTH: WATER: DEPTH: TIME: DATE:
CHECKED BY: DATE: DEPTH: TIME: DATE:
S.O. NUMBER: 104559 FILE: Camp Lejeune NOT ENCOUNTERED ☐ INCLINATION (DEGREES):

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	21			
	24			
	27			
	30	-30	30.00	DSI 3/8" Bentonite Chips, 1 - 50 lb bag
	33			
	36			
	39	-37	37.00	DSI Filter Sand #1, 2 - 50 lb bags

EXTENDED READINGS

Well location in area of SWMU 318 GW41. For general geologic information see boring log for 318-GW41.

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. MW06DW
SHEET 3 **OF** 3
DATE: START
END
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: **EAST:**
INSPECTOR (SIGNED) **DRILLERS NAME/COMPANY**
EQUIPMENT USED
DRILLING METHODS
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
		-40	40.00	Johnson 10' section, 0.010", Schedule 40 PVC, 2" ID
	42			
	45		45.00	
	48			
	51			
	54			
	57			

EXTENDED READINGS

Well location in area of SWMU 318 GW41. For general geologic information see boring log for 318-GW41.

WELL DEVELOPMENT

LEGEND

Symbol Description

Monitor Well Details

- Casing cap set in concrete
- Empty casing set in concrete
- Riser cap inside casing set in concrete
- Cased riser set in concrete
- Riser set in grout
- Riser backfilled with bentonite
- Riser backfilled with sand
- Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | MCB Camp Lejeune | Date 3/31/2005 | LD4 LEG11x17 (11/02)

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-MW07
SHEET 1 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV. 17.321853

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355863.2735 **EAST:** 2466307.686
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
0			3.2	80				ASPHALT; black	
					0.0	SP		0.8	EL. 16.6
1								F-M SAND w/pebbles; loose; lt brown; dry	
					0.1				
2	DP-4					CL		2.0	EL. 15.3
					0.0			CLAY, some silt; plasticity, stiff; mottled gray to orange brown	
3									
					0.0				
4	4.0								
	4.0 X-1		3	75				No Recovery	EL. 13.3
5								Same as above	EL. 12.3
					0.0				
6	DP-2							6.0	EL. 11.3
					1.4	SW		ORGANIC LAYER; f. grained; black 6.5	EL. 10.8
7								F-M SAND, trace silt; loose; lt gray; wet 7.5	EL. 9.8
					0.8	SW-SP			
8	8.0		2	50				F-M SAND, little silt, areas of trace to little clay; loose; gray; wet	
					0.0				
9									
					0.0				
10	10.0 DP-3							No Recovery	EL. 7.3
11									
12	12.0 X-2		2	50					
13									
14	DP-4					SW		14.0	EL. 3.3
					0.0			M-C SAND; loose; dk gray; wet	
15						SM		15.0	EL. 2.3
					0.0	SW		SILTY SAND; stiff; green-gray; damp 15.5	EL. 1.8
16	16.0		4	100		SP		F-M SAND; loose; tan; wet to saturated 16.0	EL. 1.3
17					0.0			F-M SAND, trace silt; slightly dense; lt green-gray; wet	
					0.0				
18	DP-5					SM		18.0	EL. -0.7
					0.0			F-M SAND, some silt; med. dense; green-gray; moist to wet	
19						CL-SP		19.0	EL. -1.7
					0.0			F-M SAND, some silt, trace to little clay,	

BKR_E_PID (LD4)
(02/05 Baker)

ENGINEERS FIELD BORING LOG

BORING NO. 318-MW07
SHEET 2 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV. 17.321853

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION: MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355863.2735 **EAST:** 2466307.686
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

DEPTH (FT.)	SAMPLE NO. AND TYPE/CORE RUN	BLOWS/0.5 FT. ON SAMPLER	RECOVERY (FT.) / RQD (FT.)	RECOVERY (%) / RQD (%)	PID (ppm) or *FID (ppm)*	USCS / AASHTO	H_2O CONTENT	DESCRIPTION	REMARKS
20.0			4	100				plasticity; olive green-gray; moist to wet	
21					0.0				
22	DP-6				0.0				Sample TOD 318-MW07-11 (21'-23')
23					0.0			F-M WEAK CEMENTED SAND, shell frags (grains are cemented in pebble size clumps; dense; lt gray; wet	EL. -5.7
24.0					0.0			24.0	EL. -6.7
								Bottom of Boring	

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW07
SHEET 1 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV. 17.321853

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355863.2735 **EAST:** 2466307.686
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	7.3219	0.00	8" x 7.5" manhole
		7.2219	0.10	
		7.1219	0.20	Portland Type 1, two - 94 lb. bags and 10 lbs of bentonite powder
		7.0219	0.30	
		6.7219	0.60	
	3			
	6			
	9	8.32185	9.00	DSI Bentonite 3/8" chips, 1.5 - 50 lb bags
		6.32185	11.00	Riser in sand pack
	12			
		4.32185	13.00	Johnson 10' section 0.01 slot, 2.0" id, Schedule 40 PVC
	15			
	18			

EXTENDED READINGS

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO.	318-MW07
SHEET	2 OF 2
DATE: START	2/15/2005
END	2/15/2005
O.G. ELEV.	17.321853

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION _____ **OFFSET** _____ **BASELINE** _____
COORDINATES: NORTH: 355863.2735 **EAST:** 2466307.686
INSPECTOR (SIGNED) J. Frank/ CH2MHILL **DRILLERS NAME/COMPANY** Parratt Wolff
EQUIPMENT USED _____
DRILLING METHODS Macrocore by Geoprobe 3"x 4'
CASING: SIZE: _____ **DEPTH:** _____ **WATER: DEPTH:** _____ **TIME:** _____ **DATE:** _____
CHECKED BY: _____ **DATE:** _____ **DEPTH:** _____ **TIME:** _____ **DATE:** _____
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):** _____

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV / DEPTH	WELL NOTES	EXTENDED READINGS
	21			
	24	24.00		
	27			
	30			WELL DEVELOPMENT
	33			
	36			
	39			

LEGEND

Symbol Description

STRATA SYMBOLS

Asphalt

Poorly graded sand (SP)

Low plasticity clay (CL)

Clay, Gravelly

Well graded sand (SW)

Interlayered well/ poorly graded sand (SW-SP)

Silty sand (SM)

Poorly graded silty fine sand (SM-ML)

Monitor Well Details

Casing cap set in grout

Empty casing set in concrete

Riser cap inside casing set in grout

Riser in empty hole

Riser set in grout

Riser backfilled with bentonite

Riser backfilled with sand

Screen backfilled with sand

● Test Boring Location
X Geologic Observation Location

BORING LOCATION PLAN

Baker

CTO-0091/ RFI SWMU 318

MCB Camp Lejeune

BORING LOCATION PLAN AND LEGEND

S.O. 104559 | File: Camp Lejeune | Date 3/11/2005 | LD4 LEG11x17 (11/02)

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW08
SHEET 1 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 355614.2137 **EAST:** 2466736.77
INSPECTOR (SIGNED) J. Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES
	0	0	0.00	8 x 7.5 Round manhole
		-0.1	0.10	
		-0.2	0.20	Schedule 40 PVC, 2" ID
		-0.3	0.30	Portland Type 1, 3 - 94 lb. bags + 10 lbs Bentonite Powder
		-0.6	0.60	
	3			
	6			
	9			
	12			
	15			
		-16	16.00	DSI 3/8" Bentonite Chips, 1 - 50 lb bag
	18	-17.9	17.90	DSI Filter Sand #1, 12 - 50 lb bags

EXTENDED READINGS

Well location in area of SWMU 318 GW35. For general geologic information see boring log for 318-GW35

WELL DEVELOPMENT

ENGINEERS WELL INSTALLATION LOG

BKRWELLE (LD4)
(02/01 Baker)

BORING NO. 318-MW08
SHEET 2 **OF** 2
DATE: START 2/15/2005
END 2/15/2005
O.G. ELEV.

PROJECT NAME CTO-0091/ RFI SWMU 318
LOCATION MCB Camp Lejeune
STATION **OFFSET** **BASELINE**
COORDINATES: NORTH: 355614.2137 **EAST:** 2466736.77
INSPECTOR (SIGNED) J. Frank/ CH2MHill **DRILLERS NAME/COMPANY** Chip Lefever/ Parratt Wolff
EQUIPMENT USED
DRILLING METHODS HSA 6 5/8"
CASING: SIZE: **DEPTH:** **WATER: DEPTH:** **TIME:** **DATE:**
CHECKED BY: **DATE:** **DEPTH:** **TIME:** **DATE:**
S.O. NUMBER: 104559 **FILE:** Camp Lejeune **NOT ENCOUNTERED** ☐ **INCLINATION (DEGREES):**

PROFILE	DEPTH (FEET)	WELL DETAIL ELEV	WELL DETAIL DEPTH	WELL NOTES	EXTENDED READINGS
	21	-20	20.00	Johnson 10' section, Schedule 40 PVC, 0.010", 2" ID	Well location in area of SWMU 318 GW35. For general geologic information see boring log for 318-GW35
	24				
	27				
	30		30.00		WELL DEVELOPMENT
	33				
	36				
	39				

LEGEND

Symbol Description

Monitor Well Details

Casing cap set in concrete

Empty casing set in concrete

Riser cap inside casing set in concrete

Cased riser set in concrete

Riser set in grout

Riser backfilled with bentonite

Riser backfilled with sand

Screen backfilled with sand

BORING LOCATION PLAN

● Test Boring Location
X Geologic Observation Location

Baker

CTO-0091/ RFI SWMU 318

BORING LOCATION PLAN AND LEGEND

S.O. 104559	File: Camp Lejeune	MCB Camp Lejeune	Date 3/31/2005	LD4 LEG11x17 (11/02)

APPENDIX A

Well Development Forms

Baker

Baker Environmental

WELL DEVELOPMENT RECORD

Project: Camp Lejeune RCRA Program - SWMU 318

Project. No: CTO-041 Monitoring Well ID: 318-MW01

Date: 4/1/04

Depth to Water: 4.02 (Top/PVC) Well Diameter: 2 (inches)

Total Well Depth: 29.90 (Top/PVC) Gallons/foot: 0.163

Well Volume: 4.22 (Gallons) Avg. Flow Rate: 0.8 gpm

Time	Gallons Removed	Well Volume	Temperature (^{o}C)	Specific Conductance (µS)	pH (SU)	Turbidity (NTU)	Comments
1326	4.22	1.0	(1)	(1)	(1)	Er3[(2)]	
1334	8.44	2.0	(1)	(1)	(1)	Er3	
1343	12.66	3.0	(1)	(1)	(1)	Er3	
1405	25.32	6.0	(1)	(1)	(1)	Er3	
1420	33.76	8.0	(1)	(1)	(1)	Er3	
1436	42.2	10.0	(1)	(1)	(1)	Er3	
1450	50.64	12.0	(1)	(1)	(1)	Er2	
1505	59.08	14.0	(1)	(1)	(1)	Er2	
1520	67.52	16.0	(1)	(1)	(1)	919	
Raised tubing approx 4'							
1536	75.96	18.0	(1)	(1)	(1)	Er2	
1550	84.4	20.0				802	
1605	92.84	22.0	(1)	(1)	(1)	395	

Notes: [(1)] Measurements not taken; development based on turbidity and well volume

[(2)] Value is over range of instrument

Baker

Baker Environmental

WELL DEVELOPMENT RECORD

Project: Camp Lejeune RCRA Program - SWMU 318

Project. No: CTO-041 Monitoring Well ID: 318-MW02

Date: 4/1/04

Depth to Water: 5.20 (Top/PVC) Well Diameter: 2 (inches)

Total Well Depth: 29.65 (Top/PVC) Gallons/foot: 0.163

Well Volume: 3.99 (Gallons) Avg. Flow Rate: 0.8 gpm

Time	Gallons Removed	Well Volume	Temperature (^{o}C)	Specific Conductance (µS)	pH (SU)	Turbidity (NTU)	Comments
1330	-	-	(1)	(1)	(1)	<999	Dark grey
1340	5	1.3	(1)	(1)	(1)	<999	
1350	10	2.5	(1)	(1)	(1)	<999	
1355	15	3.8	(1)	(1)	(1)	<999	
1400	20	5.0	(1)	(1)	(1)	<1000	
1405	25	6.3	(1)	(1)	(1)	<750	
1410	30	7.5	(1)	(1)	(1)	<450	
1415	30	7.5	(1)	(1)	(1)	<350	
1420	35	8.8	(1)	(1)	(1)	<274	
1425	40	10.0	(1)	(1)	(1)	<255	
1430	50	12.5	(1)	(1)	(1)	<232	
1435	Moved tubing up 4'						
1440	55	13.8	(1)	(1)	(1)	1089	
1445	60	15.1	(1)	(1)	(1)	782	
1450	65	16.3	(1)	(1)	(1)	556	
1455	70	17.6	(1)	(1)	(1)	369	
1500	75	18.8	(1)	(1)	(1)	323	
1505	80	20.1	(1)	(1)	(1)	248	
1510	85	21.3	(1)	(1)	(1)	203	
1515	90	22.6	(1)	(1)	(1)	190	

Notes: (1) Measurements not taken; development based on turbidity and well volume

(2) Value is over range of instrument

Baker

Baker Environmental

WELL DEVELOPMENT RECORD

Project: Camp Lejeune RCRA Program - SWMU 318

Project. No: CTO-041 Monitoring Well ID: 318-MW03

Date: 4/2/04

Depth to Water: 4.84 (Top/PVC) Well Diameter: 2 (inches)

Total Well Depth: 29.46 (Top/PVC) Gallons/foot: 0.163

Well Volume: 4.01 (Gallons) Avg. Flow Rate: 0.8 gpm

Time	Gallons Removed	Well Volume	Temperature (^{o}C)	Specific Conductance (µS)	pH (SU)	Turbidity (NTU)	Comments
826	4.01	1.0	(1)	(1)	(1)	Er3[(2)]	Olive drab (silty)
832	8.02	2.0	(1)	(1)	(1)	Er3	
842	16.04	4.0	(1)	(1)	(1)	Er3	
853	24.06	6.0	(1)	(1)	(1)	Er3	
904	32.08	8.0	(1)	(1)	(1)	Er2	
914	40.1	10.0	(1)	(1)	(1)	756	
924	48.12	12.0	(1)	(1)	(1)	434	
934	56.14	14.0	(1)	(1)	(1)	281	
Raised tubing approx 4'							
948	64.16	16.0	(1)	(1)	(1)	Er3	
958	72.18	18.0	(1)	(1)	(1)	Er2	
1008	80.2	20.0	(1)	(1)	(1)	1035	
1018	88.22	22.0	(1)	(1)	(1)	767	

Notes: [(1)] Measurements not taken; development based on turbidity and well volume

[(2)] Value is over range of instrument

Baker

Baker Environmental

WELL DEVELOPMENT RECORD

Project: Camp Lejeune RCRA Program - SWMU 318

Project. No: CTO-041 Monitoring Well ID: IR86-MW25IW

Date: 4/2/04

Depth to Water: 3.62 (Top/PVC) Well Diameter: 2 (inches)

Total Well Depth: 29.62 (Top/PVC) Gallons/foot: 0.163

Well Volume: 4.24 (Gallons) Avg. Flow Rate: 0.8 gpm

Time	Gallons Removed	Well Volume	Temperature (^{o}C)	Specific Conductance (µS)	pH (SU)	Turbidity (NTU)	Comments
1234	4.24	1.0	(1)	(1)	(1)	Er3[2]	Plastic cuttings kept clogging
1237	8.48	2.0	(1)	(1)	(1)	Er3	foot valve
1245	16.96	4.0	(1)	(1)	(1)	1013	
1252	25.44	6.0	(1)	(1)	(1)	770	
1300	33.92	8.0	(1)	(1)	(1)	979	
1308	42.4	10.0	(1)	(1)	(1)	732	
1316	50.88	12.0	(1)	(1)	(1)	541	
Raised tubing approx 4'							
1335	59.36	14.0	(1)	(1)	(1)	Er3	
1344	67.84	16.0	(1)	(1)	(1)	1019	

Notes: [1] Measurements not taken; development based on turbidity and well volume

[2] Value is over range of instrument

Baker

Baker Environmental

WELL DEVELOPMENT RECORD

Project: Camp Lejeune RCRA Program - SWMU 318

Project. No: CTO-041 Monitoring Well ID: IR86-MW27

Date: 4/1/04

Depth to Water: 4.31 (Top/PVC) Well Diameter: 2 (inches)

Total Well Depth: 29.80 (Top/PVC) Gallons/foot: 0.163

Well Volume: 4.15 (Gallons) Avg. Flow Rate: 0.8 gpm

Time	Gallons Removed	Well Volume	Temperature (^{o}C)	Specific Conductance (µS)	pH (SU)	Turbidity (NTU)	Comments
1000	4.15	1.0	(1)	(1)	(1)	>1100	Olive drab
1005	8.3	2.0	(1)	(1)	(1)	>1000	
1009	12.45	3.0	(1)	(1)	(1)	813	
1013	16.6	4.0	(1)	(1)	(1)	465	
1017	20.75	5.0	(1)	(1)	(1)	347	
1021	24.9	6.0	(1)	(1)	(1)	305	Raised tubing approx 5'
1028	29.05	7.0	(1)	(1)	(1)	>1100	
1033	33.2	8.0	(1)	(1)	(1)	>1100	
1037	37.35	9.0	(1)	(1)	(1)	>1000	
1041	41.5	10.0	(1)	(1)	(1)	>1000	
1045	45.65	11.0	(1)	(1)	(1)	>1000	
1049	49.8	12.0	(1)	(1)	(1)	>1000	
1053	53.95	13.0	(1)	(1)	(1)	>1000	
1057	58.1	14.0	(1)	(1)	(1)	1063	

Notes: (1) Measurements not taken; development based on turbidity and well volume

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** SWMU 318 **Date:**
Well No.: SWMU318-MW04 **Weather:**
Groundwater Depth Before (feet below TOC): 6.12 **Total Well Depth:** 30 ft. **Saturated Depth:**
Groundwater Depth After (feet below TOC): 5.62 **Screen Length (ft):** 10
Casing Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: **Depth of Pump Intake:**
Date Installed: 2/14/2005 **Purge Start Time:**
Date Developed: 2/15/2005
Development Method:

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
4	1250	7 in	20.13	0.578	NA	5.74	sand, light odor discharge
17	1305	0 in	20.31	0.636	600	5.70	---
39	1329	0 in	20.40	0.641	130	5.75	clear, odor
52	1402	0 in	20.22	0.642	850	5.65	cloudy, odor
56	1422	0 in	20.24	0.641	130	5.69	clear, light odor
66	1440	1 in	20.05	0.616	NA	5.62	sheen, light odor
75	1454	0 in	19.73	0.637	450	5.60	cloudy, light odor
83	1505	0 in	19.78	0.640	95	5.59	clear

Comments/Observations:

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** SWMU 318 **Date:**
Well No.: SWMU318-MW04DW **Weather:**
Groundwater Depth Before (feet below TOC): 0 (full) **Total Well Depth:** 45 ft. **Saturated Depth:**
Groundwater Depth After (feet below TOC): 5.42 **Screen Length (ft):** 5
Casing Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: Waterra® **Depth of Pump Intake:**
Date Installed: 2/17/2005 **Purge Start Time:**
Date Developed: 2/18/2005
Development Method:

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
70 total	1620	1 in	17.13	0.765	550	7.09	
	1640		17.40	0.836	55	6.96	raised tubing 18 in.
	1700		15.16	0.840	107	6.87	raised tubing 18 in.
	1720		13.84	0.838	90	6.79	

Comments/Observations:

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** SWMU 318 **Date:**
Well No.: SWMU318-MW05 **Weather:**
Groundwater Depth Before (feet below TOC): 4 **Total Well Depth:** **Saturated Depth:**
Groundwater Depth After (feet below TOC): 5.5 **Screen Length (ft):**
Casing Diameter (inches): **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: **Depth of Pump Intake:**
Date Installed: **Purge Start Time:**
Date Developed:
Development Method:

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
2	1552	1 in	21.47	0.311	NA	4.50	cloudy, strong odor
8	1605	3 in	21.31	0.275	NA	4.14	cloudy, strong odor
20	1622	6 in	21.24	0.281	800	3.98	cloudy, strong odor, sediment
33	1634	0 in	21.24	0.272	650	3.84	clear/cloudy, strong odor
43	1646	0 in	21.12	0.258	428	3.72	clear/cloudy, strong odor
46	1657	0 in	21.01	0.258	900	3.85	cloudy, odor
50	1702	0 in	20.84	0.258	NA	4.67	

Comments/Observations:

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** SWMU 318 **Date:**
Well No.: SWMU318-MW05DW **Weather:**
Groundwater Depth Before (feet below TOC): 1.65 **Total Well Depth:** 45 ft. **Saturated Depth:**
Groundwater Depth After (feet below TOC): 7.93 **Screen Length (ft):** 5
Casing Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: Waterra® **Depth of Pump Intake:**
Date Installed: 2/18/2005 **Purge Start Time:**
Date Developed: 2/19/2005
Development Method:

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
0.0	818		---	---	415	---	brown tint (cloudy)
3.0	825		---	---	375	---	brown tint (cloudy)
6.5	830		---	---	313	---	brown tint (cloudy)
11.5	835		---	---	274	---	brown tint (cloudy)
14.0	840		---	---	208	---	tan tint (cloudy)
18.0	845		---	---	126	---	slightly cloudy
22.0	850		---	---	99.8	---	slightly cloudy
26.0	855		---	---	72.4	---	slightly cloudy
30.0	900		---	---	55.3	---	slightly cloudy
35.0	905		---	---	32.7	---	slightly cloudy
40.0	910		---	---	26.7	---	slightly cloudy
45.0	915		---	---	15.1	---	slightly cloudy
50.0	920		---	---	12.4	---	slightly cloudy
55.0	925		---	---	9.52	---	slightly cloudy

Comments/Observations:

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** SWMU 318 **Date:**
Well No.: SWMU318-MW06 **Weather:**
Groundwater Depth Before (feet below TOC): 5 in. from top **Total Well Depth:** 30 ft. **Saturated Depth:**
Groundwater Depth After (feet below TOC): 33.47 **Screen Length (ft):** 10
Casing Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: Waterra® **Depth of Pump Intake:**
Date Installed: 2/17/2005 **Purge Start Time:**
Date Developed: 2/18/2005
Development Method:

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
15	1130	6-7 in	20.63	0.793	800	7.29	slight odor
30	1145		20.59	0.685	220	7.25	raised tubing 24 in.
45	1205		21.02	0.639	300	7.19	
60	1215		20.67	0.627	350	7.19	
75	1240		21.40	0.613	400	7.18	
90	1305		21.09	0.613	170	6.99	

Comments/Observations:

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** SWMU 318 **Date:**
Well No.: SWMU318-MW06DW **Weather:**
Groundwater Depth Before (feet below TOC): 7.31 **Total Well Depth:** 45 **Saturated Depth:**
Groundwater Depth After (feet below TOC): **Screen Length (ft):** 5
Casing Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: Waterra® **Depth of Pump Intake:**
Date Installed: 2/17/2005 **Purge Start Time:**
Date Developed: 2/18/2005
Development Method:

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
15	1420	2 - 3 in	21.17	0.305	450	6.12	mild odor and turbid
30	1440		22.20	0.247	130	5.74	raised tubing 20 in.
45	1500		22.20	0.252	110	5.70	raised tubing 18 in.
60	1520		21.37	0.236	120	5.60	

Comments/Observations:

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** SWMU 318 **Date:**
Well No.: SWMU318-MW07 **Weather:**
Groundwater Depth Before (feet below TOC): 4.31 **Total Well Depth:** **Saturated Depth:**
Groundwater Depth After (feet below TOC): 31.78 **Screen Length (ft):**
Casing Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: Waterra® **Depth of Pump Intake:**
Date Installed: **Purge Start Time:**
Date Developed: 2/18/2005
Development Method:

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
10	855	4 in	17.40	0.509	250	5.98	very strong odor
25	915		17.99	0.475	290	5.86	raised tubing 12 in
40	930		18.21	0.505	450	5.87	raised tubing 8 in
45	1000		16.45	0.532	290	5.90	rasied tubing 12 in
65	1020		15.56	0.525	200	5.76	raised tubing 10 in
85	1045		17.17	0.480	160	5.80	

Comments/Observations:

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** SWMU 318 **Date:**
Well No.: SWMU318-MW08 **Weather:**
Groundwater Depth Before (feet below TOC): 5.28 **Total Well Depth:** **Saturated Depth:**
Groundwater Depth After (feet below TOC): 5.29 **Screen Length (ft):** 10
Casing Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: Waterra® **Depth of Pump Intake:**
Date Installed: 2/16/2005 **Purge Start Time:** 1250
Date Developed: 2/17/2005
Development Method: check valve/surge back

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
15	1310	~ 2 in	20.61	0.624	450	5.09	very cloudy, very dark grey
---	1315	---	---	---	---	---	stopped, raised tubing 2 ft, also pumped on well bottom by hand, PVC caught in check valve, removed tubing and cleared
---	1325	started purging again/water very cloudy (tan)					
30	1340		21.27	0.765	---		very cloudy, raised tubing 2 ft
40	1355		21.52	0.682	---		still cloudy
55	1405		21.53	0.693	680		still cloudy
Needed another drain, started purging again at 1415							
65	1430		21.35	0.691	390		
80	1445	stopped	21.37	0.693	170		clearing up

Comments/Observations:

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** IR86 **Date:**
Well No.: IR86-GW02IW **Weather:**
Groundwater Depth Before (feet below TOC): **Total Well Depth:** 30 ft. **Saturated Depth:**
Groundwater Depth After (feet below TOC): **Screen Length (ft):** 10
Casing Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: Watterra® **Depth of Pump Intake:**
Date Installed: **Purge Start Time:**
Date Developed: 2/14/2005
Development Method: Surge/Block

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
9	1550	3.5 in	19.32	0.339	355	4.69	
24	1605	0 in	19.40	0.310	130	4.61	
39	1620	0 in	19.24	0.448	111	4.82	
40	1640	0 in	19.37	0.479	34	4.79	

Comments/Observations:

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** IR86 **Date:**
Well No.: IR86-GW17IW **Weather:**
Groundwater Depth Before (feet below TOC): 4.47 **Total Well Depth:** 55 ft. **Saturated Depth:**
Groundwater Depth After (feet below TOC): **Screen Length (ft):** 10
Casing Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: Watterra® **Depth of Pump Intake:**
Date Installed: **Purge Start Time:**
Date Developed: 2/15/2005
Development Method: Surge/Block

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
6	1050	2.5 in	19.47	0.570	500	5.48	strong odor, sand color
22	1110	0 in	19.50	0.570	95	5.67	color clearing, raised tubing 10 in.
32	1125	0 in	19.84	0.559	180	5.69	
44	1140	0 in	19.89	0.560	80	5.72	
52	1155	0 in	19.86	0.559	120	5.71	

Comments/Observations:

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** IR86 **Date:**
Well No.: IR86-GW20IW **Weather:**
Groundwater Depth Before (feet below TOC): 4.3 **Total Well Depth:** 55 ft. **Saturated Depth:**
Groundwater Depth After (feet below TOC): 5.46 **Screen Length (ft):** 10
Casing Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: Watterra® **Depth of Pump Intake:**
Date Installed: **Purge Start Time:**
Date Developed: 2/15/2005
Development Method: Surge/Block

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
15	835	2 in	18.04	0.464	850	5.94	strong odor
30	845	0 in	18.70	0.448	210	5.98	
45	900	0 in	18.62	0.442	60	5.92	
52	915	0 in	18.67	0.440	72	5.94	

Comments/Observations:

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** IR86 **Date:**
Well No.: IR86-GW21IW **Weather:**
Groundwater Depth Before (feet below TOC): 5.9 **Total Well Depth:** 55 ft. **Saturated Depth:**
Groundwater Depth After (feet below TOC): 5.96 **Screen Length (ft):** 10
Casing Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: Watterra® **Depth of Pump Intake:**
Date Installed: **Purge Start Time:**
Date Developed: 2/15/2005
Development Method: Surge/Block

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
15	908	3 in	NR	NR	NR	NR	milky
23	913		NR	NR	NR	NR	milky
27	931		NR	NR	NR	NR	cloudy
35	944		NR	NR	NR	NR	milky
40	1010		NR	NR	NR	NR	milky
45	1025		NR	NR	NR	NR	milky
50	1051		NR	NR	NR	NR	cloudy
Break in purging							
55	1128		NR	NR	NR	NR	cloudy
58	1139		NR	NR	NR	NR	clear
67	1159		NR	NR	NR	NR	clear

Comments/Observations: Development based on volume and visual clarity

WELL DEVELOPMENT RECORD

Project: CTO-0091, SWMU 318 RFI **Site:** IR86 **Date:**
Well No.: IR86-GW22IW **Weather:**
Groundwater Depth Before (feet below TOC): 5.31 **Total Well Depth:** 64 ft. **Saturated Depth:**
Groundwater Depth After (feet below TOC): **Screen Length (ft):**
Casing Diameter (inches): **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: Watterra® **Depth of Pump Intake:**
Date Installed: **Purge Start Time:**
Date Developed: 2/16/2005
Development Method: Surge/Block

Cumulative Volume (gallons)	Time	Estimated Sediment Thickness	Temp. (oC)	Specific Conductance (ms/cm)	Turbidity (NTU)	pH	Comments
7	825	2 in	20.03	0.384	65	5.19	clear, odor
25	845	0 in	20.09	0.394	700	5.44	cloudy, odorless
40	855	0 in	20.25	0.391	55	5.62	clear, odorless
55	916	0 in	19.75	0.392	220	5.60	

Comments/Observations:

APPENDIX B

Summary of Groundwater Sampling Field Parameters

APPENDIX TABLE

SUMMARY OF GROUNDWATER SAMPLING FIELD PARAMETERS
SWMU 318
RCRA PHASE II CONFIRMATORY SAMPLING INVESTIGATION, CTO - 041
MCB, CAMP LEJEUNE, NORTH CAROLINA

Well Number	Sampling Date	Well Depth (ft)[1]	Depth to Water (ft)[1]	Purge Volume (gal)	Field Parameters					
					Well Volume	Specific Cond.[2] (ms/cm)	pH (SU)[3]	Temp. (deg. C)	Dissolved Oxygen (mg/l)	Turbidity (NTU)[4]
SWMU 318-MW01	4/3/2004	30	4.99	4.08	1	0.560	5.96	21.13	0.27	17.0
					2	0.602	5.99	21.10	0.16	11.6
					3	0.605	6.02	21.13	0.13	7.76
					4	0.605	6.03	21.14	0.14	3.37
					5	0.598	6.05	21.14	0.10	1.80
					6	***0.596***	***6.06***	***21.14***	***0.11***	***0.58***
SWMU 318-MW02	4/4/2004	29.73	5.28	3.98	1	0.294	4.53	18.93	0.33	20.0
					2	0.290	4.47	18.99	0.13	4.52
					3	***0.283***	***4.39***	***18.97***	***0.09***	***2.29***
SWMU 318-MW03	4/4/2004	29.46	4.90	4.00	1	0.266	5.12	21.02	0.49	8.38
					2	0.260	4.99	20.99	0.19	6.47
					3	***0.243***	***4.96***	***21.00***	***0.12***	***9.31***
IR86-MW25IW	4/4/2004	29.62	3.66	4.23	1	0.205	4.48	18.91	0.20	6.53
					2	0.257	4.69	19.00	0.21	2.34
					3	***0.279***	***4.77***	***19.06***	***0.19***	***0.59***
IR86-MW27	4/3/2004	29.8	4.38	4.14	1	0.636	5.31	20.74	0.26	5.37
					2	0.756	5.52	20.75	0.13	2.95
					3	***0.777***	***5.54***	***20.81***	***0.15***	***1.95***

Notes:

[1] - Measured from top of PVC Casing

[2] - Specific Conductance at 25 deg. C

[3] - SU = Standard Units

[4] - NTU = Nephelometric Turbidity Units

The bold and italicized parameters where taken immediately prior to sampling the well.

NR

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** SWMU 318 **Date:** 2/15/2005
Well No.: SWMU318-MW01 **Weather:** clear 55°
Groundwater Depth (feet below TOC): 4.99 **Total Well Depth:** 30 ft. **Saturated Depth:**
Well Diameter (inches): **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:**
Purge Start Time: 1450

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (°C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
-0.2	1450	6.05	20.69	0.865	61.9	1.16	-56.3	---	---	0.10 gpm
1.2	1500	6.05	20.56	0.859	42.4	0.94	-72.8	---	---	
2.0	1510	6.04	20.53	0.831	27.5	0.80	-60.7	---	---	
2.8	1520	6.01	20.20	0.818	20.1	0.72	-25.4	---	---	
3.2	1530	5.99	20.05	0.817	16.9	0.61	-37.9	---	---	
3.8	1540	5.99	19.99	0.814	13.8	0.59	-13.0	---	---	
4.2	1550	5.98	19.95	0.813	11.5	0.58	-20.0	---	---	

Total Volume Purged (gal.): **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: **Sample Date:** 2/15/2005 **Sample Time:** 1550
QA/QC Samples: **Sample Appearance:**

Comments/Observations:

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** SWMU 318 **Date:** 2/16/2005
Well No.: SWMU318-MW02 **Weather:** clear 55°
Groundwater Depth (feet below TOC): 4.65 **Total Well Depth:** 30 ft. **Saturated Depth:**
Well Diameter (inches): **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:**
Purge Start Time: 830

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (°C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
0.08	830	4.81	17.39	0.301	1.62	1.20	-112.5	---	---	0.08 gpm
0.50	840	4.92	16.98	0.304	1.22	0.60	-97.5	---	---	
0.94	850	4.83	16.81	0.303	1.34	0.62	-94.3	---	---	
1.30	900	4.82	16.86	0.301	1.47	0.59	-89.7	---	---	
1.75	910	4.81	16.95	0.300	1.52	0.57	-89.9	---	---	

Total Volume Purged (gal.): **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: **Sample Date:** 2/16/2005 **Sample Time:** 910
QA/QC Samples: **Sample Appearance:**

Comments/Observations: light odor

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** 86 **Date:** 2/16/2005
Well No.: SWMU318-MW03 **Weather:** clear 55°
Groundwater Depth (feet below TOC): 4.96 **Total Well Depth:** 30 ft. **Saturated Depth:**
Well Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:** 27 ft.
Purge Start Time: 1230

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (^{o}C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	1235	5.28	20.66	0.191	1.22	0.50	---	---	4.96	0.08 gpm
0.35	1245	5.25	20.71	0.176	1.02	0.21	---	---	---	
0.64	1255	5.20	20.82	0.172	0.44	0.15	---	---	---	
1.02	1305	5.19	20.84	0.169	0.28	0.13	---	---	---	
1.40	1315	5.16	20.93	0.167	0.20	0.11	---	---	4.53	

Total Volume Purged (gal.): **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: SWMU318-MW03-05A **Sample Date:** 2/16/2005 **Sample Time:** 1315
QA/QC Samples: Metals, VOC, SVOC, Diss Gases **Sample Appearance:**

Comments/Observations: strong odor

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** 86 **Date:** 2/17/2005
Well No.: SWMU318-MW04 **Weather:** sunny 55°
Groundwater Depth (feet below TOC): 5.31 **Total Well Depth:** 30 ft. **Saturated Depth:**
Well Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:** 27 ft.
Purge Start Time: 1230

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (^{o}C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	1235	6.66	17.52	0.867	2.9	1.21	---	---	5.31	0.08 gpm
0.35	1245	6.60	17.70	0.893	2.9	0.44	---	---	---	
0.64	1255	6.52	17.43	0.894	3.0	0.28	---	---	---	
1.02	1305	6.49	16.86	0.893	3.0	0.20	---	---	---	
1.40	1315	6.46	16.97	0.891	2.4	0.17	---	---	5.30	

Total Volume Purged (gal.): **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: SWMU318-MW04-05A, 05AD **Sample Date:** 2/17/2005 **Sample Time:** 1315
QA/QC Samples: **Sample Appearance:**

Comments/Observations: very strong odor

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** SWMU 318 **Date:** 2/19/2005
Well No.: SWMU318-MW04DW **Weather:** sunny 55°
Groundwater Depth (feet below TOC): 2.72 **Total Well Depth:** 45 ft **Saturated Depth:**
Well Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:** 42 ft
Purge Start Time: 1410

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (°C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	1415	6.81	18.05	0.768	6.57	1.23	---	---	2.72	
0.35	1425	6.80	18.38	0.822	2.44	0.45	---	---	---	
0.80	1435	6.81	18.25	0.827	1.60	0.50	---	---	---	
1.20	1445	6.80	18.24	0.830	2.14	0.47	---	---	---	
1.60	1455	6.79	18.12	0.831	2.27	0.53	---	---	2.75	

Total Volume Purged (gal.): **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: SWMU318-MW04DW-05A **Sample Date:** 2/19/2005 **Sample Time:** 1455
QA/QC Samples: **Sample Appearance:**

Comments/Observations:

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** 86 **Date:** 2/17/2005
Well No.: SWMU318-MW05 **Weather:** clear 50°
Groundwater Depth (feet below TOC): 4.95 **Total Well Depth:** 30 ft. **Saturated Depth:**
Well Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:**
Purge Start Time: 1625

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (^{o}C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	1630	5.54	19.67	0.419	8.9	0.88	---	---	4.95	0.8 gpm
0.35	1640	5.38	19.51	0.418	9.0	0.45	---	---	---	
0.64	1650	5.35	19.40	0.420	6.1	0.39	---	---	---	
1.02	1700	5.29	19.58	0.409	4.6	0.41	---	---	---	
1.40	1710	5.25	19.44	0.399	3.4	0.31	---	---	4.91	

Total Volume Purged (gal.): 2.1 **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: SWMU318-MW05-05A **Sample Date:** 2/17/2005 **Sample Time:** 1710
QA/QC Samples: **Sample Appearance:**

Comments/Observations:

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** SWMU 318 **Date:** 2/20/2005
Well No.: SWMU318-MW05DW **Weather:** cloudy 50°
Groundwater Depth (feet below TOC): 6.85 **Total Well Depth:** 45 ft **Saturated Depth:**
Well Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:** 42 ft
Purge Start Time: 805

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (°C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	845	7.26	19.25	0.552	7.40	1.59	---	---	6.85	
0.35	855	7.37	20.76	0.558	6.40	0.79	---	---	---	
0.80	905	7.35	21.25	0.563	5.32	0.42	---	---	---	
1.20	915	7.36	21.22	0.586	4.41	0.37	---	---	---	
1.60	925	7.37	21.20	0.564	3.70	0.29	---	---		

Total Volume Purged (gal.): 2.4 **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: SWMU318-MW04DW-05A, 05AD **Sample Date:** 2/20/2005 **Sample Time:** 915
QA/QC Samples: **Sample Appearance:**

Comments/Observations:

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** SWMU 318 **Date:** 2/19/2005
Well No.: SWMU318-MW06 **Weather:** sunny 55°
Groundwater Depth (feet below TOC): _____ **Total Well Depth:** 30 ft **Saturated Depth:** _____
Well Diameter (inches): 2 **Single Well Volume (gallons):** _____
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:** 27 ft
Purge Start Time: 1255

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (^{o}C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	1255	6.01	22.20	0.411	14.90	0.80	---	---	7.43	
0.35	1305	5.97	22.41	0.406	8.91	0.50	---	---	---	
0.80	1315	5.80	22.45	0.384	5.40	0.31	---	---	---	
1.20	1325	5.79	22.36	0.391	3.43	0.29	---	---	---	
1.60	1335	5.70	22.12	0.334	2.89	0.30	---	---	7.55	

Total Volume Purged (gal.): _____ **Number of Well Volumes:** _____ **Drawdown (feet):** _____

SAMPLE INFORMATION

Sample Number: SWMU318-MW06-05A **Sample Date:** 2/19/2005 **Sample Time:** 1335
QA/QC Samples: _____ **Sample Appearance:** _____

Comments/Observations: _____

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** SWMU 318 **Date:** 2/19/2005
Well No.: SWMU318-MW06DW **Weather:** sunny 50°
Groundwater Depth (feet below TOC): 7.24 **Total Well Depth:** 45 ft **Saturated Depth:**
Well Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:** 42 ft
Purge Start Time: 1150

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (°C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	1150	7.22	21.46	0.618	89	0.31	---	---	7.24	
0.35	1200	7.25	21.74	0.620	44.4	0.24	---	---	---	
0.80	1210	7.19	21.68	0.623	20.8	0.15	---	---	---	
1.20	1220	7.18	21.70	0.624	13.6	0.19	---	---	---	
1.60	1230	7.16	21.53	0.625	10.4	0.23	---	---	7.37	

Total Volume Purged (gal.): 2.2 **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: SWMU318-MW06DW-05A **Sample Date:** 2/19/2005 **Sample Time:** 1230
QA/QC Samples: **Sample Appearance:**

Comments/Observations:

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** SWMU 318 **Date:** 2/19/2005
Well No.: SWMU318-MW07 **Weather:** sunny 50°
Groundwater Depth (feet below TOC): 4.33 **Total Well Depth:** 23 ft **Saturated Depth:**
Well Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:** 20 ft
Purge Start Time: 1020

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (°C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	1030	5.90	17.66	0.436	6.77	0.96	---	---	4.33	0.50 gpm
0.35	1040	5.78	17.79	0.456	6.19	0.39	---	---	---	
0.80	1050	5.78	17.91	0.454	5.71	0.35	---	---	---	
1.20	1100	5.76	17.99	0.447	4.85	0.28	---	---	---	
1.60	1110	5.73	17.95	0.439	4.47	0.30	---	---	3.99	

Total Volume Purged (gal.): **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: SWMU318-MW07-05A **Sample Date:** 2/19/2005 **Sample Time:** 1110
QA/QC Samples: **Sample Appearance:**

Comments/Observations:

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** SWMU 318 **Date:** 2/19/2005
Well No.: SWMU318-MW08 **Weather** sunny 30°
Groundwater Depth (feet below TOC): 5.30 **Total Well Depth:** 30 ft **Saturated Depth:**
Well Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:** 27 ft
Purge Start Time: 815

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (°C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	820	7.17	19.44	0.934	182	0.48	---	---	5.3	0.08 gpm
0.35	830	7.16	19.20	0.941	160	0.33	---	---	---	0.08 gpm
0.80	840	7.12	18.90	0.928	96	0.37	---	---	---	0.08 gpm
1.20	850	7.12	18.99	0.913	45	0.22	---	---	---	0.08 gpm
1.45	900	7.14	19.17	0.899	32	0.25	---	---	---	0.08 gpm
1.69	910	7.15	19.35	0.897	19	0.23	---	---	---	0.08 gpm
1.90	920	7.14	18.96	0.898	11	0.22	---	---	5.22	0.08 gpm

Total Volume Purged (gal.): 2.5 **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: SWMU318-MW08-05A, 05AMS, 05AMSD **Sample Date:** 2/19/2005 **Sample Time:** 920
QA/QC Samples: **Sample Appearance:**

Comments/Observations:

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** IR 86 **Date:** 2/17/2005
Well No.: IR86GW-17IW **Weather:** clear 45°
Groundwater Depth (feet below TOC): 4.54 **Total Well Depth:** 55 ft. **Saturated Depth:**
Well Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:** 52 ft.
Purge Start Time: 810

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (°C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	815	6.70	16.25	0.575	10.91	2.32	---	---	4.54	0.08 gpm
0.35	825	6.65	16.28	0.706	10.75	1.03	---	---	---	
0.64	835	6.58	15.72	0.752	10.61	0.51	---	---	---	
1.02	845	6.53	15.53	0.760	10.67	0.38	---	---	---	
1.40	855	6.52	15.50	0.763	10.72	0.37	---	---	---	

Total Volume Purged (gal.): **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: 86-GW17IW-05A **Sample Date:** 2/17/2005 **Sample Time:** 855
QA/QC Samples: **Sample Appearance:**

Comments/Observations: light odor

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** IR 86 **Date:** 2/16/2005
Well No.: IR86GW-20IW **Weather:** sunny 55°
Groundwater Depth (feet below TOC): 5.62 **Total Well Depth:** 55 ft. **Saturated Depth:**
Well Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:** 52 ft.
Purge Start Time: 1540

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (°C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	1545	6.54	18.93	0.447	29.8	1.45	---	---	5.62	0.08 gpm
0.35	1555	6.44	19.07	0.444	24.0	1.10	---	---	---	
0.64	1605	6.46	19.10	0.442	20.6	0.69	---	---	---	
1.02	1615	6.47	19.15	0.439	18.2	0.50	---	---	---	
1.40	1625	6.49	19.17	0.434	15.7	0.39	---	---	---	
1.82	1635	6.50	19.14	0.433	13.9	0.30	---	---	5.24	
					11.1					
					9.7					

Total Volume Purged (gal.): **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: 86-GW20IW-05A **Sample Date:** 2/16/2005 **Sample Time:** 1635
QA/QC Samples: **Sample Appearance:**

Comments/Observations: Took all samples except metals until turbidity was < 10 NTU. Strong odor

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** IR 86 **Date:** 2/16/2005
Well No.: IR86-MW27 **Weather:** cloudy 50°
Groundwater Depth (feet below TOC): 3.44 **Total Well Depth:** 30 ft. **Saturated Depth:**
Well Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:** 27 ft.
Purge Start Time: 1035

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (°C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	1040	6.07	19.81	0.744	3.34	0.79	---	---	---	0.8
0.35	1050	6.01	19.57	0.775	2.77	0.55	---	---	---	0.8
0.64	1100	6.01	19.56	0.778	2.53	0.50	---	---	---	0.8
1.02	1110	6.02	19.67	0.790	1.76	0.48	---	---	---	0.8
1.40	1120	6.04	19.97	0.801	1.02	0.42	---	---	---	0.8
									3.38	

Total Volume Purged (gal.): 1.5 **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: 86-GW27IW-05A **Sample Date:** 2/16/2005 **Sample Time:** 1120
QA/QC Samples: **Sample Appearance:**

Comments/Observations:

GROUNDWATER SAMPLE COLLECTION RECORD

Project: CTO-0091 SWMU 318 RFI **Site:** IR 86 **Date:** 2/16/2005
Well No.: IR86-GW02IW **Weather:** sunny 55°
Groundwater Depth (feet below TOC): 6.39 **Total Well Depth:** 30 ft. **Saturated Depth:**
Well Diameter (inches): 2 **Single Well Volume (gallons):**
Well Purge Methodology/Equipment: slow / peristaltic pump **Depth of Pump Intake:** 27 ft.
Purge Start Time: 1410

Purge Volume (gallons)	Time	pH (S.U.)	Temp. (°C)	Specific Conductance (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Tot. Dis. Solids (mg/l)	Water Level (feet)	Pump Flow Rate (l/min)
---	1415	5.35	18.98	0.371	10.50	0.80	---	---	6.39	0.08 gpm
0.35	1425	5.30	18.94	0.371	10.09	0.46	---	---	---	
0.64	1435	5.29	18.96	0.368	9.81	0.30	---	---	---	
1.02	1445	5.27	18.94	0.361	9.99	0.28	---	---	---	
1.40	1455	5.29	19.00	0.359	10.10	0.26	---	---	6.83	

Total Volume Purged (gal.): **Number of Well Volumes:** **Drawdown (feet):**

SAMPLE INFORMATION

Sample Number: 86-GW02IW-05A **Sample Date:** 2/16/2005 **Sample Time:** 1455
QA/QC Samples: **Sample Appearance:**

Comments/Observations: strong odor

APPENDIX C

Chain-of-Custody Forms

MICHAEL BAKER JR., INC.

NUMBER OF COOLERS 1

CHAIN OF CUSTODY NUMBER: 01 **PAGE NUMBER:** 1 OF 1

CUSTOMER INFORMATION

Company: Michael Baker Jr., Inc.
Project Number: 102200 FI.SG
Address: Airside Business Park
100 Airside Drive
Moon Twp, PA 15108
Phone: 1-800-553-1153
Fax: (412)269-2002

Project Name: MCB Camp Lejeune: RCRA
Address Lot 203, Piney Green Road
Camp Lejeune, NC 28542
Contact: Michelle Joy
Phone Number: (412)269-6135
Fax Number: (412)269-6100

Sample Identification	Matrix	Sample Date	Sample Time	Number of Containers	TCL VOCs (OLMO 4.2)	TCL SVOCs (OLMO 4.2)	TCL Pesticides (OLMO 4.2)	RCRA Metals (ILMO 4.1)	pH (SW 846, Method 9045C)												COMMENTS/ PRECAUTIONS
SWMU318-SB01-00	SS	3/16/04	1401	1		X		X													
SWMU318-SB01-04	SU	3/16/04	1410	1		X		X													
SWMU318-SB02-00	SS	3/16/04	1445	3	X																
SWMU318-SB02-01	SU	3/16/04	1450	1		X		X													
SWMU318-SB02-01D	SU	3/16/04	1450	1		X		X													
SWMU318-SB03-01	SU	3/16/04	1551	1		X		X													
SWMU318-SB04-01	SS	3/16/04	1503	3	X																
SWMU318-SB04-02	SU	3/16/04	1510	1		X		X													
SWMU318-SB04-04	SU	3/16/04	1515	1		X		X													
SWMU318-SB06-00	SS	3/16/04	1600	3	X																
SWMU318-SB06-00 D	SS	3/16/04	1600	3	X																
TB01	LB	3/16/04	1630	3	X																
SWMU318-SB06-01	SU	3/16/04	1610	1		X		X													
SWMU318-SB06-01D	SU	3/16/04	1610	1		X															
SWMU318-SB06-02	SU	3/16/04	1625	1		X		X													
SWMU318-SB02-04	SU	3/16/04	1522	1		X		X													

Matrix: A - Air; SS - Surface Soil; SW - Surface Water; GW - Groundwater; SU - SubSurface Soil; W - Waste; LB - Lab Supplied Water (Trip or Field Blank)

N0TES:

FED EX TRACKING NUMBER: _____

1.) Relinquished By: Robert M. Sok II		2.) Relinquished By:		SPECIAL INSTRUCTIONS
Signature:	Date:	Signature:	Date:	
Company: Michael Baker Jr., Inc.	Time:	Company	Time:	
1.) Received By:		**2.) Received By:**		
Signature:	Date:	Signature:	Date:	
Company	Time:	Company	Time:	

MICHAEL BAKER JR., INC.

NUMBER OF COOLERS 2

CHAIN OF CUSTODY NUMBER: 02 **PAGE NUMBER:** 1 OF 1

CUSTOMER INFORMATION

Company: Michael Baker Jr., Inc.
Project Name: MCB Camp Lejeune: RCRA
Project Number: 102200 FI.SG
Address Lot 203, Piney Green Road
Address: Airside Business Park
Camp Lejeune, NC 28542
100 Airside Drive
Contact: Michelle Joy
Moon Twp, PA 15108
Phone: 1-800-553-1153
Phone Number: (412)269-6135
Fax: (412)269-2002
Fax Number: (412)269-6100

Sample Identification	Matrix	Sample Date	Sample Time	Number of Containers	TCL VOCs (OLMO 4.2)	TCL SVOCs (OLMO 4.2)	TCL Pesticides (OLMO 4.2)	RCRA Metals (ILMO 4.1)	pH (SW 846, Method 9045C)												COMMENTS/ PRECAUTIONS
SWMU318-GW05	GW	3/17/04	0955	2		X															
SWMU318-GW06-01	GW	3/17/04	1215	2		X															
SWMU318-GW02	GW	3/17/04	1810	2		X															
SWMU318-GW02 D	GW	3/17/04	1810	2		X															
SWMU318-GW08-01	GW	3/17/04	1620	2		X															
SWMU318-GW04	GW	3/18/04	0825	2		X															
SWMU318-GW04-01	GW	3/18/04	0915	3	X																
SWMU318-GW03	GW	3/18/04	1130	2		X															
SWMU318-GW07	GW	3/18/04	1525	3	X																
TB02	LB	3/18/04	NA	3	X																
SWMU318-GW07-01	GW	3/18/04	1545	2		X															
ER01	LB	3/18/04	1615	5	X	X															
SWMU318-SB05-02	SU	3/16/04	1650	1		X		X													
SWMU318-SB05-02D	SU	3/16/04	1650	1		X															
SWMU318-SB05-03	SU	3/16/04	1718	1		X		X													

Matrix: A - Air; SS - Surface Soil; SW - Surface Water; GW - Groundwater; SU - SubSurface Soil; W - Waste; LB - Lab Supplied Water (Trip or Field Blank)

N0TES:

FED EX TRACKING NUMBER: _____

1.) Relinquished By: Robert M. Sok II		2.) Relinquished By:		SPECIAL INSTRUCTIONS
Signature:	Date:	Signature:	Date:	
Company: Michael Baker Jr., Inc.	Time:	Company	Time:	
1.) Received By:		**2.) Received By:**		
Signature:	Date:	Signature:	Date:	
Company	Time:	Company	Time:	

MICHAEL BAKER JR., INC.

NUMBER OF COOLERS _____

CHAIN OF CUSTODY NUMBER: 03 **PAGE NUMBER:** 1 OF 2

CUSTOMER INFORMATION

Company: Michael Baker Jr., Inc.
Project Name: MCB Camp Lejeune: RCRA
Project Number: 102200 FI.SG
Address Lot 203, Piney Green Road
Address: Airside Business Park
Camp Lejeune, NC 28542
100 Airside Drive
Contact: Michelle Joy
Moon Twp, PA 15108
Phone: 1-800-553-1153
Phone Number: (412)269-6135
Fax: (412)269-2002
Fax Number: (412)269-6100

Sample Identification	Matrix	Sample Date	Sample Time	Number of Containers	TCL VOCs (OLMO 4.2)	TCL SVOCs (OLMO 4.2)	TCL Pesticides (OLMO 4.2)	RCRA Metals (ILMO 4.1)	pH (SW 846, Method 9045C)											COMMENTS/ PRECAUTIONS
SWMU318-GW01	GW	3/19/04	0905	5	X	X														
SWMU318-GW09-01	GW	3/19/04	1000	2		X														
SWMU269-GW16-01	GW	3/19/04	1710	3	X															
SWMU269-GW16-01 MS/MSD	GW	3/19/04	1710	6	X															
SWMU318-SB03-00	SS	3/17/04	1338	1		X		X												
SWMU318-GW10-01	GW	3/20/04	1215	3	X															
SWMU318-GW13	GW	3/20/04	1450	3	X															
SWMU318-GW12-01	GW	3/20/04	1530	2		X														
SWMU318-GW10	GW	3/20/04	1130	2		X														
SWMU318-GW13	GW	3/20/04	1450	2		X														
SWMU318-GW11-01	GW	3/20/04	1055	2		X														
ER02	GW	3/20/04	1650	5	X	X														
SWMU318-SB07-00	SS	3/20/04	0839	1		X														
SWMU318-SB07-02	SU	3/20/04	0841	1		X														
SWMU318-SB08-00	SS	3/20/04	0808	1		X														
SWMU318-SB08-04	SU	3/20/04	0815	1		X														
SWMU46-MW01	GW	3/21/04	1350					X												QUICK TURN SAMPLE
TB03	LB	3/19/04	NA	3	X															
ER03	LB	3/22/04	1010	6	X	X		X												
SWMU46-SB05-00	SS	3/22/04	0826	1				X												
SWMU46-SB05-04	SU	3/22/04	0829	1				X												
SWMU46-SB01-00	SS	3/22/04	0905	1				X												
SWMU46-SB01-03	SU	3/22/04	0908	1				X												

Matrix: A - Air; SS - Surface Soil; SW - Surface Water; GW - Groundwater; SU - SubSurface Soil; W - Waste; LB - Lab Supplied Water (Trip or Field Blank)

N0TES:

FED EX TRACKING NUMBER: _____

1.) Relinquished By: Robert M. Sok II		**2.) Relinquished By:**		**SPECIAL INSTRUCTIONS**
Signature:	Date:	Signature:	Date:	
Company: Michael Baker Jr., Inc.	Time:	Company	Time:	
1.) Received By:		**2.) Received By:**		
Signature:	Date:	Signature:	Date:	
Company	Time:	Company	Time:	

MICHAEL BAKER JR., INC.

NUMBER OF COOLERS _____

CHAIN OF CUSTODY NUMBER: 04 **PAGE NUMBER:** 2 OF 2

CUSTOMER INFORMATION

Company: Michael Baker Jr., Inc.
Project Name: MCB Camp Lejeune: RCRA
Project Number: 102200 FI.SG
Address Lot 203, Piney Green Road
Address: Airside Business Park
Camp Lejeune, NC 28542
100 Airside Drive
Contact: Michelle Joy
Moon Twp, PA 15108
Phone: 1-800-553-1153
Phone Number: (412)269-6135
Fax: (412)269-2002
Fax Number: (412)269-6100

Sample Identification	Matrix	Sample Date	Sample Time	Number of Containers	TCL VOCs (OLMO 4.2)	TCL SVOCs (OLMO 4.2)	TCL Pesticides (OLMO 4.2)	RCRA Metals (ILMO 4.1)	pH (SW 846, Method 9045C)												COMMENTS/ PRECAUTIONS
SWMU46-SB02-00	SS	3/22/04	0926	1				X													
SWMU46-SB02-00 MS/MSD	SS	3/22/04	0926	2				X													
SWMU46-SB02-04	SU	3/22/04	0927	1				X													
SWMU46-SB03-00	SS	3/22/04	1045	1				X													
SWMU46-SB03-00 D	SS	3/22/04	1045	1				X													
SWMU46-SB03-02	SU	3/22/04	1050	1				X													
SWMU46-SB04-00	SS	3/22/04	1055	1				X													
SWMU46-SB04-02	SU	3/22/04	1105	1				X													
SWMU318-GW15	GW	3/22/04	1410	2		X															
SWMU261-SS04	SS	3/21/04	1400	2				X	X												
SWMU261-SS05	SS	3/21/04	1410	2				X	X												
SWMU261-SS05 D	SS	3/21/04	1410	1				X													
SWMU318-SB09-00	SS	3/22/04	1613	4	X	X		X													
SWMU318-SB09-02	SU	3/22/04	1615	1		X		X													

Matrix: A - Air; SS - Surface Soil; SW - Surface Water; GW - Groundwater; SU - SubSurface Soil; W - Waste; LB - Lab Supplied Water (Trip or Field Blank)

N0TES:

FED EX TRACKING NUMBER: _____

1.) Relinquished By: Robert M. Sok II		**2.) Relinquished By:**		**SPECIAL INSTRUCTIONS**
Signature:	Date:	Signature:	Date:	
Company: Michael Baker Jr., Inc.	Time:	Company	Time:	
1.) Received By:		**2.) Received By:**		
Signature:	Date:	Signature:	Date:	
Company	Time:	Company	Time:	

MICHAEL BAKER JR., INC.

NUMBER OF COOLERS 2

CHAIN OF CUSTODY NUMBER: 05 **PAGE NUMBER:** 1 OF 1

CUSTOMER INFORMATION			
Company: Michael Baker Jr., Inc.	**Project Name:** MCB Camp Lejeune: RCRA		
Project Number: 102200 FI.SG	**Address** Lot 203, Piney Green Road		
Address: Airside Business Park	Camp Lejeune, NC 28542		
100 Airside Drive	**Contact:** Michelle Joy		
Moon Twp, PA 15108			
Phone: 1-800-553-1153	**Phone Number:** (412)269-6135		
Fax: (412)269-2002	**Fax Number:** (412)269-6100		

Sample Identification	Matrix	Sample Date	Sample Time	Number of Containers	TCL VOCs (OLMO 4.2)	TCL SVOCs (OLMO 4.2)	TCL Pesticides (OLMO 4.2)	RCRA Metals (ILMO 4.1)	pH (SW 846, Method 9045C)						% SOLIDS/MOISTURE						COMMENTS/ PRECAUTIONS
SWMU318-SB02-00	SS	3/16/04	1445	1											X						
SWMU318-SB02-00D	SS	3/16/04	1445	1											X						EXTRA VOLUME FOR % SOLIDS
SWMU318-SB04-01	SU	3/16/04	1503	1											X						
SWMU318-SB06-00	SS	3/16/04	1600	1											X						
SWMU318-SB10-00	SS	3/23/04	0732	1		X															
SWMU318-SB10-00 MS/MSD	SS	3/23/04	0732	2		X															
SWMU318-SB10-03	SU	3/23/04	0740	2		X															
FB01	LB	3/23/04	1030	6	X	X		X													
ER04	LB	3/23/04	1045	6	X	X		X													
TB04	LB	3/23/04	NA	3	X																
SWMU318-SB11-01	SU	3/23/04	1725	1		X		X													
SWMU318-SB11-03	SU	3/23/04	1735	1		X		X													
SWMU318-SB12-01	SU	3/23/04	1645	1		X		X													
SWMU318-SB12-04	SU	3/23/04	1650	1		X		X													
SWMU318-GW14-01	GW	3/23/04	1540	2		X															
SWMU318-GW14-01 MS/MSD	GW	3/23/04	1540	4		X															

Matrix: A - Air; SS - Surface Soil; SW - Surface Water; GW - Groundwater; SU - SubSurface Soil; W - Waste; LB - Lab Supplied Water (Trip or Field Blank)

N0TES:

FED EX TRACKING NUMBER: _____

1.) Relinquished By: Robert M. Sok II		2.) Relinquished By:		SPECIAL INSTRUCTIONS
Signature:	Date:	Signature:	Date:	
Company: Michael Baker Jr., Inc.	Time:	Company	Time:	
1.) Received By:		**2.) Received By:**		
Signature:	Date:	Signature:	Date:	
Company	Time:	Company	Time:	

MICHAEL BAKER JR., INC.

NUMBER OF COOLERS 1

CHAIN OF CUSTODY NUMBER: 07 **PAGE NUMBER:** 1 OF 1

CUSTOMER INFORMATION

Company: Michael Baker Jr., Inc.
Project Name: MCB Camp Lejeune: RCRA
Project Number: 102200 FI.SG
Address Lot 203, Piney Green Road
Address: Airside Business Park
Camp Lejeune, NC 28542
100 Airside Drive
Contact: Michelle Joy
Moon Twp, PA 15108
Phone: 1-800-553-1153
Phone Number: (412)269-6135
Fax: (412)269-2002
Fax Number: (412)269-6100

Sample Identification	Matrix	Sample Date	Sample Time	Number of Containers	TCL VOCs (OLMO 4.2)	TCL SVOCs (OLMO 4.2)	TCL Pesticides (OLMO 4.2)	RCRA Metals (ILMO 4.1)	pH (SW 846, Method 9045C)						% SOLIDS/MOISTURE						COMMENTS/ PRECAUTIONS
Copy from Baker COC																					
46-TT03-01	SB	4/2/04	0845	4	x	x	x	x													
46-TT03-02	SB	4/2/04	0900	4	x	x	x	x													
46-TT08-01	SB	4/2/04	1015	4	x	x	x	x													
46-TT08-01 MS	SB	4/2/04	1015	4	x	x	x	x													
46-TT08-01 MSD	SB	4/2/04	1015	4	x	x	x	x													
46-TT08-02	SB	4/2/04	1035	4	x	x	x	x													
TB06				3	x																
46-TT04-01	SB	4/2/04	1520	4	x	x	x	x													
46-TT04-02	SB	4/2/04	1530	4	x	x	x	x													

Matrix: A - Air; SS - Surface Soil; SW - Surface Water; GW - Groundwater; SU - SubSurface Soil; W - Waste; LB - Lab Supplied Water (Trip or Field Blank)

N0TES:

FED EX TRACKING NUMBER: _____

1.) Relinquished By: Robert M. Sok II		**2.) Relinquished By:**		**SPECIAL INSTRUCTIONS**
Signature:	Date:	Signature:	Date:	
Company: Michael Baker Jr., Inc.	Time:	Company	Time:	
1.) Received By:		**2.) Received By:**		
Signature:	Date:	Signature:	Date:	
Company	Time:	Company	Time:	

MICHAEL BAKER JR., INC.

NUMBER OF COOLERS 4

CHAIN OF CUSTODY NUMBER: 08 **PAGE NUMBER:** 1 OF 2

CUSTOMER INFORMATION

Company: Michael Baker Jr., Inc.
Project Name: MCB Camp Lejeune: RCRA
Project Number: 102200 FI.SG
Address Lot 203, Piney Green Road
Address: Airside Business Park
Camp Lejeune, NC 28542
100 Airside Drive
Contact: Michelle Joy
Moon Twp, PA 15108
Phone: 1-800-553-1153
Phone Number: (412)269-6135
Fax: (412)269-2002
Fax Number: (412)269-6100

Sample Identification	Matrix	Sample Date	Sample Time	Number of Containers	TCL VOCs (OLMO 4.2)	TCL SVOCs (OLMO 4.2)	TCL Pesticides (OLMO 4.2)	RCRA Metals (ILMO 4.1)	pH (SW 846, Method 9045C)					% SOLIDS/MOISTURE						COMMENTS/ PRECAUTIONS
SWMU261-MW01	GW	4/2/04	1610	1				X												
SWMU261-MW01D	GW	4/2/04	1610	1				X												
SWMU261-MW03	GW	4/2/04	1840	1				X												
IR86-MW27	GW	4/3/04	1650	5	X	X		X												
SWMU269-MW01	GW	4/3/04	1400	5	X	X														
SWMU269-MW02	GW	4/3/04	1255	5	X	X														
SWMU269-MW02 D	GW	4/3/04	1255	5	X	X														
SWMU269-MW03	GW	4/3/04	1150	5	X	X														
SWMU269-MW04	GW	4/3/04	1100	5	X	X														
SWMU318-MW01	GW	4/3/04	1605	6	X	X		X												
SWMU318-MW02	GW	4/4/04	1050	6	X	X		X												
SWMU318-MW02 D	GW	4/4/04	1050	6		X														
SWMU318-MW02 MS/MSD	GW	4/4/04	1050	6				X												
SWMU318-MW03	GW	4/4/04	1230	6	X	X		X												
FB02	WATER	4/4/04	1300	6	X	X		X												
SWMU46-DP01	SU	4/5/04	1115	1	X	X	X	X												
SWMU46-DP01 D	SU	4/5/04	1115	1		X		X												
SWMU46-SW01	SW	4/5/04	1315	8	X	X	X	X												
SWMU46-SD01	SD	4/5/04	1355	2	X	X	X	X												
SWMU46-TT05-01	SU	4/5/04	1310	4	X	X	X	X												
SWMU46-TT05-02	SU	4/5/04	1315	4	X	X	X	X												
SWMU46-TT06-01	SU	4/5/04	1105	4	X	X	X	X												
SWMU46-TT06-02	SU	4/5/04	1133	4	X	X	X	X												

Matrix: A - Air; SS - Surface Soil; SW - Surface Water; GW - Groundwater; SU - SubSurface Soil; W - Waste; LB - Lab Supplied Water (Trip or Field Blank)

N0TES:

FED EX TRACKING NUMBER: _____

1.) Relinquished By: Robert M. Sok II		**2.) Relinquished By:**		**SPECIAL INSTRUCTIONS**
Signature:	Date:	Signature:	Date:	
Company: Michael Baker Jr., Inc.	Time:	Company	Time:	
1.) Received By:		**2.) Received By:**		
Signature:	Date:	Signature:	Date:	
Company	Time:	Company	Time:	

MICHAEL BAKER JR., INC.

NUMBER OF COOLERS 1

CHAIN OF CUSTODY NUMBER: 06 **PAGE NUMBER:** 1 OF 1

CUSTOMER INFORMATION

Company: Michael Baker Jr., Inc.
Project Name: MCB Camp Lejeune: RCRA
Project Number: 102200 FI.SG
Address Lot 203, Piney Green Road
Address: Airside Business Park
Camp Lejeune, NC 28542
100 Airside Drive
Contact: Michelle Joy
Moon Twp, PA 15108
Phone: 1-800-553-1153
Phone Number: (412)269-6135
Fax: (412)269-2002
Fax Number: (412)269-6100

Sample Identification	Matrix	Sample Date	Sample Time	Number of Containers	TCL VOCs (OLMO 4.2)	TCL SVOCs (OLMO 4.2)	TCL Pesticides (OLMO 4.2)	RCRA Metals (ILMO 4.1)	pH (SW 846, Method 9045C)						% SOLIDS/MOISTURE						COMMENTS/ PRECAUTIONS
Copy from Baker COC																					
CDV01	SS	4/1/04	0930	1			x	x													
CDV02	SS	4/1/04	0940	1			x	x													
46-TT01-01	SB	4/1/04	1345	4	x	x	x	x													
46-TT02-01	SB	4/1/04	1515	4	x	x	x	x													
46-TT02-02	SB	4/1/04	1530	4	x	x	x	x													
TB05		4/1/04		3	x																

Matrix: A - Air; SS - Surface Soil; SW - Surface Water; GW - Groundwater; SU - SubSurface Soil; W - Waste; LB - Lab Supplied Water (Trip or Field Blank)

N0TES:

FED EX TRACKING NUMBER: _____

1.) Relinquished By: Robert M. Sok II		2.) Relinquished By:		SPECIAL INSTRUCTIONS
Signature:	Date:	Signature:	Date:	
Company: Michael Baker Jr., Inc.	Time:	Company	Time:	
1.) Received By:		**2.) Received By:**		
Signature:	Date:	Signature:	Date:	
Company	Time:	Company	Time:	

MICHAEL BAKER JR., INC.

NUMBER OF COOLERS 4

CHAIN OF CUSTODY NUMBER: 09 **PAGE NUMBER:** 2 OF 2

CUSTOMER INFORMATION

Company: Michael Baker Jr., Inc.
Project Name: MCB Camp Lejeune: RCRA
Project Number: 102200 FI.SG
Address Lot 203, Piney Green Road
Address: Airside Business Park
Camp Lejeune, NC 28542
100 Airside Drive
Contact: Michelle Joy
Moon Twp, PA 15108
Phone: 1-800-553-1153
Phone Number: (412)269-6135
Fax: (412)269-2002
Fax Number: (412)269-6100

Sample Identification	Matrix	Sample Date	Sample Time	Number of Containers	TCL VOCs (OLMO 4.2)	TCL SVOCs (OLMO 4.2)	TCL Pesticides (OLMO 4.2)	RCRA Metals (ILMO 4.1)	pH (SW 846, Method 9045C)											COMMENTS/ PRECAUTIONS
SWMU46-TT07-01	SU	4/5/04	1545	4	X	X	X	X												
SWMU46-TT07-02	SU	4/5/04	1555	4	X	X	X	X												
SWMU46-TT07-01 D	SU	4/5/04	1545	4	X	X	X	X												
TB07	LB	4/5/04	NA	3	X															
SWMU318-MW03 D	GW	4/4/04	1230	6	X															
IR86-MW25IW	GW				X	X		X												

Matrix: A - Air; SS - Surface Soil; SW - Surface Water; GW - Groundwater; SU - SubSurface Soil; W - Waste; LB - Lab Supplied Water (Trip or Field Blank)

N0TES:

FED EX TRACKING NUMBER: _____

1.) Relinquished By: Robert M. Sok II		2.) Relinquished By:		SPECIAL INSTRUCTIONS
Signature:	Date:	Signature:	Date:	
Company: Michael Baker Jr., Inc.	Time:	Company	Time:	
1.) Received By:		**2.) Received By:**		
Signature:	Date:	Signature:	Date:	
Company	Time:	Company	Time:	

MICHAEL BAKER JR., INC.

NUMBER OF COOLERS 2

CHAIN OF CUSTODY NUMBER: 10 **PAGE NUMBER:** 1 OF 1

CUSTOMER INFORMATION

Company: Michael Baker Jr., Inc.
Project Name: MCB Camp Lejeune: RCRA
Project Number: 102200 FI.SG
Address Lot 203, Piney Green Road
Address: Airside Business Park
Camp Lejeune, NC 28542
100 Airside Drive
Contact: Michelle Joy
Moon Twp, PA 15108
Phone: 1-800-553-1153
Phone Number: (412)269-6135
Fax: (412)269-2002
Fax Number: (412)269-6100

Sample Identification	Matrix	Sample Date	Sample Time	Number of Containers	TCL VOCs (OLMO 4.2)	TCL SVOCs (OLMO 4.2)	TCL Pesticides (OLMO 4.2)	RCRA Metals (ILMO 4.1)	pH (SW 846, Method 9045C)						% SOLIDS/MOISTURE						COMMENTS/ PRECAUTIONS
ER05	LB	4/6/04	0815	8	X	X	X	X													
ER06	LB	4/6/04	0830	8	X	X	X	X													
FB03	LB	4/6/04	0845	8	X	X	X	X													
TB08	LB	4/6/04	NA	3	X																
GDV-01	SS	4/6/04	1035	1			X	X													
GDV-02	SS	4/6/04	1040	1			X	X													
GDV-02D	SS	4/6/04	1040	1			X	X													
SWMU261-MW02	GW	4/5/04	2010	1				X													
SWMU261-MW02F	GW	4/5/04	2010					X													

Matrix: A - Air; SS - Surface Soil; SW - Surface Water; GW - Groundwater; SU - SubSurface Soil; W - Waste; LB - Lab Supplied Water (Trip or Field Blank)

N0TES:

FED EX TRACKING NUMBER: _____

1.) Relinquished By: Robert M. Sok II		**2.) Relinquished By:**		**SPECIAL INSTRUCTIONS**
Signature:	Date:	Signature:	Date:	
Company: Michael Baker Jr., Inc.	Time:	Company	Time:	
1.) Received By:		**2.) Received By:**		
Signature:	Date:	Signature:	Date:	
Company	Time:	Company	Time:	

SML 342 East St, Plainville, CT 06062 — Sentinel Mobile Labs. — (860)747-6181

~~BLA 355 Research Parkway, Meriden, CT 06450~~ — **~~BL ANALYTICAL~~** — Tel: ~~800-301-3077~~ Fax: ~~203-630-2615~~ — SML ~~BLA~~-QA/QC-appendix 34b

Date information entered on C.O.C.: 6/21/04 | **CHAIN OF CUSTODY (C.O.C.)** | Page 1 of 1

Client (Company): Baker Environmental | Project Name: SWMU316/Site 66 Addl Characterization | Project N°: 160426.F1 | Purchase Order N°:

Report To (Person): Mark DeJohn | Client Address: 100 Airside Drive Moon Twp., PA 15108 | Phone:

Invoice To (If different from above): | Billing Address (If different from above): | Fax:

Item N°	Sampling Information: Date	Time	Client Sample ID	Sample Type	PA UST Related Analysis: Leaded Gas, Av/Jet Fuel	Unleaded Gas	Kerosene, Fuel Oil # 1	Diesel Fuel, Fuel Oil # 2	Fuel # 4,5,6 Lube Oil	Used Motor Oil	Analysis Required: Cyanide Total									BLA Sample N°
	Samples collected By: _____ (Print)																			
1	6/21/04	1012	SWMU316-GW19	Groundwater							X									0406211238
2	"	1041	SWMU316-GW19-01	"							X									0406211230
3		1120	SWMU316-GW19-02								X									0406211231
4		1732	SWMU316-GW20								X									0406211452
5		1255	SWMU316-GW20-01								X									0406211451
6		1325	SWMU316-GW20-02								X									0406211453
7		1415	SWMU316-GW16								X									0406211611
8		1415	SWMU316-GW16D								X									0406211612
9		1425	SWMU316-EBW1-04B								X									0406211613
10		1442	SWMU316-GW16-01								X									0406211614
11		1510	SWMU316-GW16-02								X									0406211615
12		1613	SWMU316-GW16								X									0406211744
13	"	1640	SWMU316-GW16-01	"							X									0406211745
14	6/21/04	1711	SWMU316-GW16-02	Groundwater							X									0406211746
15																				
DUPLICATE																				
TRIP BLANK																				
EQUIP BLK																				

Custody Chain

Relinquished by (Client): _____

Date: 6/21/04 Time: ___:___

Received by: _____

Date: 6/21/04 Time: 1730 EM

Relinquished by: _____

Date: ___/___/___ Time: ___:___

Received By : _____

Date: ___/___/___ Time: ___:___

Containers given to laboratory

Type	Size	How Many	Preservative
Glass jar			
Glass bottle-clear			
Glass bottle-amber			
Plastic bottle		SW	
VOC vial	40 mL	14 x 2	HCL
Plastic tub			
Other			

Remarks/Special Instructions:

Note: By signing the Chain of Custody (COC), client agrees that COC constitutes a Purchase Order.

Turnaround Time Requested: ☐ 5 Working Days ☐ 4 Working Days ☐ 72 Hours ☐ 48 Hours ☐ 24 Hours ☒ Same Day

SML ~~BLA~~ Authorization Signature: _____

Location of samples (SML ~~BLA~~ USE ONLY) _____

Total Billable Amount (SML ~~BLA~~ USE ONLY)

SMC 342 East 2nd, Flemington, NJ 08822 — Sentinel Mobile Labs, 860 447 0081

~~BLA 355 Research Parkway, Meriden, CT 06450~~ — ~~BL ANALYTICAL~~ — Tel: ~~800 301 3077~~ Fax: ~~203 630 2615~~

SMC ~~BLA~~-QA/QC-appendix 34b

Date information entered on C.O.C.: 6/22/04	CHAIN OF CUSTODY (C.O.C.)		Page 1 of 1

Client (Company): Baker — Project Name: SWMU 38/Site 86 RI/FS Characterization — Project N°: 16026.FJ.ZZ — Purchase Order N°:

Report To (Person): Mark DeSalvo — Client Address: 100 A. Side Dr. Moon Twp., PA 15108 — Phone:

Invoice To (If different from above): — Billing Address (If different from above): — Fax:

Item N°	Sampling Information: Date	Time	Client Sample ID	Sample Type	PA UST Related Analysis: Leaded Gas, Av/Jet Fuel	Unleaded Gas	Kerosene, Fuel Oil # 1	Diesel Fuel, Fuel Oil # 2	Fuel # 4,5,6 Lube Oil	Used Motor Oil	Analysis Required: Client List									No	BLA Sample N° 1492 H
1	6/22/04	0750	SWMU38-GW21	Groundwater							X										0406220953
2		0750	SWMU38-GW21 DUP	Water							X										0406220954
3		~~0750~~	~~SWMU38-GW21-MS~~	~~MS~~							X									MS	~~0406220955~~
4		0820	SWMU38-GW21-01								X										0406220956
5		0855	SWMU38-GW21-02								X										0406220957
6		0940	SWMU38-GW29								X										0406221239
7		1026	SWMU38-GW29-01								X										0406221240
8		1100	SWMU38-GW29-02								X										0406221241
9		1215	SWMU38-GW22								X										0406221519
10		1245	SWMU38-GW22-01								X										0406221520
11		1313	SWMU38-GW22-02								X										0406221521
12		1413	SWMU38-GW24								X										0406221522
13		1435	SWMU38-GW24-01								X										0406221523
14	6/22/04	1600	SWMU38-GW24-02	Groundwater							X										0406221632
15																					
~~DUPLICATE~~ (MS/MSD)	6/22/04	1215	SWMU38-GW22	Groundwater																	
~~TRIP BLANK~~																					
~~EQUIP BLK~~																					

Custody Chain

Relinquished by (Client): [signature] — Date: 6/22/04 — Time: ___:___

Received by: [signature] — Date: 6/22/04 — Time: 16:15 PM

Relinquished by: ___ — Date: ___/___/___ — Time: ___:___

Received By: ___ — Date: ___/___/___ — Time: ___:___

Containers given to laboratory

Type	Size	How Many	Preservative
Glass jar			
Glass bottle-clear			
Glass bottle-amber			
Plastic bottle			
VOC vial	40mL	28 x	HCl
Plastic tub			
Other			

Remarks/Special Instructions:

Note: By signing the Chain of Custody (COC), client agrees that COC constitutes a Purchase Order.

Turnaround Time Requested: ☐ 5 Working Days ☐ 4 Working Days ☐ 72 Hours ☐ 48 Hours ☐ 24 Hours ☒ Same Day

~~BLA~~ SMC Authorization Signature: ___

Location of samples (~~BLA~~ SMC USE ONLY) ___

Total Billable Amount (~~BLA~~ SMC USE ONLY)

BLA 355 Research Parkway, Meriden, CT 06450

BL ANALYTICAL

Tel: 800-301-3077 Fax: 203-630-2615 BLA-QA/QC-appendix 34b

Date information entered on C.O.C.: 6/23/04

CHAIN OF CUSTODY (C.O.C.)

Page 1 of 1

Client (Company): Baker Environmental

Project Name: SWMU318/SWMU46 Addtl Characterization Project N°: 160426.FI.22

Purchase Order N°:

Report To (Person): Mark DeSalvo

Client Address: 100 Airside Dr. Moon Twp., PA 15108

Phone:

Invoice To (If different from above):

Billing Address (If different from above):

Fax:

Item N°	Sampling Information: Samples collected By: (Print) Date	Time	Client Sample ID	Sample Type	PA UST Related Analysis: Leaded Gas, Av/Jet Fuel	Unleaded Gas	Kerosene, Fuel Oil #1	Diesel Fuel, Fuel Oil #2	Fuel #4,5,6 Lube Oil	Used Motor Oil	Analysis Required: Client List										No 1493 H: BLA Sample N°
1	6/23/04	0710	SWMU318-GW17	Groundwater							X										040623094 6
2	"	0810	SWMU318-GW17-01	"							X										040623094 7
3	"	0840	SWMU318-GW17-02	"							X										040623094 8
4	"	0945	SWMU318-GW25	"							X										040623120 6
5	"	1015	SWMU318-GW25-01	"							X										040623120 7
6	"	1050	SWMU318-GW25-02	"							X										040623120 8
7	"	1050	SWMU318-GW25-02D	"							X										040623120 9
8	"	1705	SWMU318-GW23	"							X										040623135 1
9	"	1227	SWMU318-GW23-01	"							X										040623135 2
10	"	1300	SWMU318-GW23-02	"							X										040623135 3
11	"	1405	SWMU318-GW26-01	"							X										040623164 9
12	"	1440	SWMU318-GW26-02	"							X										040623165 0
13	↓	1544	SWMU318-GW27	↓							X										040623165 2
14	6/23/04	1618	SWMU318-GW27-01	Groundwater							X										040623165 3
15																					
DUPLICATE																					
TRIP BLANK																					
EQUIP BLK	6/23/04	1405	SWMU318-EBR02-04B	water							X										040623165 7

Custody Chain

Relinquished by (Client): [signature]

Date: 6/23/04 Time: [illegible]

Received by: [signature]

Date: 6/23/04 Time: 6:30 PM

Relinquished by:

Date: ___/___/___ Time: ___:___ ___

Received By :

Date: ___/___/___ Time: ___:___ ___

Containers given to laboratory

Type	Size	How Many	Preservative
Glass jar			
Glass bottle-clear			
Glass bottle-amber			
Plastic bottle			
VOC vial	40 mL	30 x	HCl
Plastic tub			
Other			

Remarks/Special Instructions:

Note: By signing the Chain of Custody (COC), client agrees that COC constitutes a Purchase Order.

Turnaround Time Requested: ☐ 5 Working Days ☐ 4 Working Days ☐ 72 Hours ☐ 48 Hours ☐ 24 Hours ☒ Same Day

BLA Authorization Signature:

Location of samples (BLA USE ONLY)

Total Billable Amount (BLA USE ONLY)

BLA 355 Research Parkway, Meriden, CT 06450 — **BL ANALYTICAL** — Tel: 800 301 3077 Fax: 203 630 2615 — BLA-QA/QC-appendix 34b

Date information entered on C.O.C.: 6/24/04	CHAIN OF CUSTODY (C.O.C.)		Page 1 of 1

Client (Company): Baker Environmental
Report To (Person): Mark DeJohn
Invoice To (If different from above):

Project Name: SWMU318/Site 86 Add'l Characterization
Project N°: 160426.FI.22
Client Address: 100 Airside Dr. Moon Twp., PA 15108
Billing Address (If different from above):

Purchase Order N°:
Phone:
Fax:

N° 1494 H

Sampling Information — Samples collected By: ______ (Print)

Item N°	Date	Time	Client Sample ID	Sample Type	Leaded Gas, Av/Jet Fuel	Unleaded Gas	Kerosene, Fuel Oil # 1	Diesel Fuel, Fuel Oil # 2	Fuel # 4,5,6 Lube Oil	Used Motor Oil	Client VOC list										BLA Sample N°
1	6/24/04	0920	SWMU318-GW20-02A	Groundwater							X										0406240959
2	6/24/04	1147	SWMU318-GW28	|							X										0406241216
3	|	1213	SWMU318-GW28-01	|							X										0406241317
4	|	1245	SWMU318-GW28-02	|							X										0406241319
5	|	1345	SWMU318-GW30-01	|							X										0406241517
6	|	1410	SWMU318-GW30-02	|							X										0106241519
7	6/24/04	1637	SWMU318-GW07A-01	Groundwater							X										0406241719
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					
DUPLICATE	6/24/04	1245	SWMU318-GW28-02D	Groundwater							X										0406241320
TRIP BLANK																					
EQUIP BLK	6/24/04	1415	SWMU318-ER05-04A	Groundwater							X										0106241520

Custody Chain	
Relinquished by (Client): [signature]	
Date: 6/24/04	Time: 6:00
Received by: [signature]	
Date: 6/24/04	Time: 6:00 pm
Relinquished by:	
Date: __/__/__	Time: __:__ __
Received By :	
Date: __/__/__	Time: __:__ __

Containers given to laboratory

Type	Size	How Many	Preservative
Glass jar			
Glass bottle-clear			
Glass bottle-amber			
Plastic bottle			
VOC vial			
Plastic tub			
Other			

Remarks/Special Instructions:

Note: By signing the Chain of Custody (COC), client agrees that COC constitutes a Purchase Order.

Turnaround Time Requested: ☐ 5 Working Days ☐ 4 Working Days ☐ 72 Hours ☐ 48 Hours ☐ 24 Hours ☒ Same Day

BLA Authorization Signature: ______

Location of samples (BLA USE ONLY) ______

Total Billable Amount (BLA USE ONLY)

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04092
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Page 1 of 1

Client	Contact	Phone #	Fax #
Baker Environmental, Inc.	Michelle Joy	(412) 269-6300	(412) 375-3996

Address	City	State	Zip Code
100 Airside Drive	Moon Twp.	PA	15108

Purchase Order #	Proj. Name / No.	Katahdin Quote #
	SWMU 318/Site 86	

Bill (if different than above)	Address

Sampler (Print / Sign)	Copies To:
Mark K. DeJohn / Mark K. DeJohn	Michelle Joy

LAB USE ONLY WORK ORDER #:

KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: ☒ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: 845909895755

TEMP°C _____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: TCL-VOA	Filt. ☐Y ☒N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	SWMU318-GW24-01	6/22/04 1935	GW	3	X										
	SWMU318-GW23-01	6/23/04 1227	GW	3	X										
	SWMU318-GW17	6/23/04 0748	GW	3	X										
	SWMU318-GW20-02A	6/24/04 0920	GW	3	X										
	SWMU318-TB01-04A	6/23/04	GW	2	X										
		/													
		/													
		/													
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		/													
		/													
		/													

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Mark K. DeJohn	6/25 1500				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

CUSTOMER COPY

LANDMARK®
LABORATORY & FIELD SERVICES DIVISION

CHAIN-OF-CUSTODY RECORD

02528

667 W. Main St. • Benton Harbor, MI 49023-1047 • Phone: 616-927-3004 • Fax: 616-927-3411

WORK ORDER NO.

Project Name	Project Location
CTO-0091 RCRA Camp Lejeune	
Project No.	**Client/Project Contact** / **Project Telephone No.**
	Baker / Rob Sak
	Project Fax No.

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Analysis Desired (Indicate separate containers) 8260	Remarks
1	SWMU 318-SB25-00	4/8/05	1020		✓		1	✓	05012-139
2	SWMU 318-SB25-02		1025		✓		1	✓	140
3	SWMU 318-SB25-04		1030		✓		1	✓	141
4	SWMU 318-SB28-00		1105		✓		1	✓	142
5	SWMU 318 SB28-02		1115		✓		1	✓	143
6	SWMU 318 SB28-04		1120		✓		1	✓	144
7	SWMU-318 SB16-00D	2/4/05	1155		✓			✓	145
8	SWMU 318-SB35-01D	2/5/05	1055		✓			✓	146
9	SWMU 318-SB27-03D	2/7/05	1445		✓			✓	147
10	SWMU 318-SB28-02D	2/8/05	1115		✓			✓	148

Due Date: ☐ Rush ☐ Standard

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-6	Jeffrey M. Rodgers		020805	1235
2	7-10			020805	1235
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature: Jeffrey M. Rodgers

Print Name:

Form FS1001 Field-Technical Services Rev.04/97

White: LANDMARK file copy • Yellow: Laboratory copy • Pink: Client copy

LANDMARK LABORATORY & FIELD SERVICES DIVISION — CHAIN-OF-CUSTODY RECORD

02527

667 W. Main St. • Benton Harbor, MI 49023-1047 • Phone: 616-927-3004 • Fax: 616-927-3411

WORK ORDER NO.

Project Name	Project Location	Due Date:
CTO-0091 RCRA Camp Lejeune		☐ Rush ☐ Standard
Project No.	**Client/Project Contact**	**Project Telephone No.**
104559	Baker/Rob Sok	
		Project Fax No.

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Analysis Desired (Indicate separate containers) 8260	Remarks
1	Swan 318 SB27-00	2/7/05	1430		✓		1	X	05012-137
2	Swan 318 SB27-02		1440		✓		1	X	134
3	Swan 318 SB27-03		1445		✓		1	X	135
4	Swan 318 SB24-00		1130		✓		1	X	136
5	Swan 318 SB24-03		1145		✓		1	X	137
6	Swan 318 SB24-05	2/7/05	1155		✓		1	X	138
7									
8									
9									
10									

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-6			2/7/05	1745
2					
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature

Print Name

Form FS1001 Field-Technical Services Rev.04/97

White: LANDMARK file copy • Yellow: Laboratory copy • Pink: Client copy

LANDMARK®
LABORATORY & FIELD SERVICES DIVISION

CHAIN-OF-CUSTODY RECORD

02526

667 W. Main St. • Benton Harbor, MI 49023-1047 • Phone: 616-927-3004 • Fax: 616-927-3411

WORK ORDER NO.

Project Name	Project Location	Project Telephone No.
CTO-0091 RCRA Camp Lejeune		
Project No.	**Client/Project Contact**	**Project Fax No.**
104559	Baker / Rob Sok	

Due Date: ☐ Rush ☐ Standard

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	6260	Remarks
1	SWMU 336-SB09-03D	2/2/05	0905		✓		1	+	05012-123
2	SWMU 318 GW51	2/7/05	1610		✓		3	X	124
3	SWMU 318 GW51-01		1635		✓		3	X	125
4	SWMU 318 GW51-02		1700		✓		3	X	126
5	SWMU 318 SB22-00		1335		✓		1	X	127
6	SWMU 318 SB22-03		1355		✓		1	X	128
7	SWMU 318 SB22-04		1350		✓		1	X	129
8	SWMU 318 SB18-00		1040		✓		1	X	130
9	SWMU 318 SB18-02		1045		✓		1	X	131
10	SWMU 318 SB18-03		1050		✓		1	X	132

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1		Burrell	020705	0800
2	2 - 10		Burrell	020705	1741
3					
4					

Remarks (Billing information or other instructions - please print)

* Hand Delivered

Sampler's Signature

Print Name

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CHAIN-OF-CUSTODY RECORD

02525

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WORK ORDER NO.

Project Name	Project Location	Number of Containers	Analysis Desired (Indicate separate containers)	Due Date:
CTO-0091 RCRA Camp Lejeune				☐ Rush ☐ Standard
Project No. 104559	Client/Project Contact: Baker / Rob Sok	Project Telephone No.		
		Project Fax No.		

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Analysis Desired	Remarks
1	SWMU318-GW49	2/6/05	1510		✓		3	X	05012-124
2	SWMU318-GW49-01	2/6/05	1520		✓		3	X	121
3	SWMU318-GW49-01D	2/6/05	1530		✓		3	X	121
4	SWMU318-GW49-02	2/6/05	1550		✓		3	X	122
5									
6									
7									
8									
9									
10									

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-4			2/8/05	1610
2					
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature

Print Name

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02524

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WORK ORDER NO.

Project Name	Project Location	Number of Containers	Analysis Desired (Indicate separate containers)	Due Date:
CTO-0091 RCRA, Camp Lejeune			8260	☐ Rush ☐ Standard
Project No. 104559	Client/Project Contact	Project Telephone No.		
		Project Fax No.		

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Analysis Desired (8260)	Remarks
1	SWMU 318 GW50	3/10/05	1355		✓		3	X	05012-110
2	SWMU 318 GW50-01		1415		✓		3	X	111
3	SWMU 318 GW50-02		1435		✓		3	X	112
4	SWMU 318 GW46		1110		✓		3	X	113
5	SWMU 318 GW46-01		1145		✓		3	X	114
6	SWMU 318 GW46-02		1230		✓		3	X	115
7	SWMU 318 GW47		910		✓		3	X	116
8	SWMU 318 GW47-01		930		✓		3	X	117
9	SWMU 318 GW47-02	↓	1000		✓		3	X	118
10									

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-9	Jeffrey M. Radtke		3/10/05	1545
2					
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature: Jeffrey M. Radtke

Print Name

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02523

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WORK ORDER NO.

Project Name	Project Location
CTO - 0091 RCRA CAMP LEJEUNE	

Project No.	Client/Project Contact	Project Telephone No.
~~014~~ 104559		
		Project Fax No.

Due Date: ☐ Rush ☐ Standard

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Analysis Desired (Indicate separate containers) 8260	Remarks
1	SWMU 318 SB14-01	2/5/05	1450		✓		1	X	05012-100
2	SWMU 318 SB14-02		1510		✓		1	X	101
3	SWMU 318 SB14-03		1505		✓		1	X	102
4	SWMU 318 SB15-01		1550		✓		1	X	103
5	SWMU 318 SB15-02		1555		✓		1	X	104
6	SWMU 318 SB15-02D		1555		✓		1	X	105
7	SWMU 318 SB15-03		1600		✓		1	X	106
8	SWMU 318 SB17-01		1630		✓		1	X	107
9	SWMU 318 SB17-02		1635		✓		1	X	108
10	SWMU 318 SB17-03		1610		✓		1	X	109

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-10			2/5/05	1730
2					
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature

Print Name

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02522

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WORK ORDER NO.

Project Name: CTO-0019 RCRA
Project Location: CAMP LeJeune
Project No.: 014559
Client/Project Contact:
Project Telephone No.:
Project Fax No.:

Due Date: ☐ Rush ☐ Standard

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Analysis Desired (Indicate separate containers) 8250	Remarks
1	SWMU 318 GW48	2/5/05	805		✓		3	X	05012-91
2	SWMU 318 GW48-01	2/5/05	825		✓		3	X	92
3	SWMU 318 GW48-02	2/5/05	850		✓		3	X	93
4	SWMU 318 GW35	2/5/05	1105		✓		3	X	91
5	SWMU 318 GW35-01	2/5/05	1120		✓		3	X	95
6	SWMU 318 GW35-02	2/5/05	1245		✓		3	X	96
7	SWMU 318 SB35-01	2/5/05	1055		✓		1	X	97
8	SWMU 318 SB35-02	2/5/05	1105	*	✓		1	X	98
9	SWMU 318 SB35-03	2/5/05	1100		✓		1	X	99
10									

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-3	Jeffrey M Rodgers	Kelly	020505	1010
2	4-9	Jeffrey M Rodgers	Kelly	020505	1715
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature: Jeffrey M. Rodgers
Print Name:

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02521

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WORK ORDER NO.

Project Name	Project Location	Project No.	Client/Project Contact	Project Telephone No.	Project Fax No.
CTO-0091 RIRA CAMP LEJEUNE		014559			

Analysis Desired (Indicate separate containers): 8260 (5035)

Due Date: ☐ Rush ☐ Standard

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Remarks
1	SWMU318-SB26-00	2/4/05	1015		✓		1	05012-82
2	SWMU318-SB26-01		1015		✓		1	83
3	SWMU318-SB26-02		1020		✓		1	84
4	SWMU318-SB16-00		1155		✓		1	85
5	SWMU318-SB16-02		1215		✓		1	86
6	SWMU318-SB16-03		1220		✓		1	87
7	SWMU 318-SB19-00	✓	1625		✓		1	88
8	SWMU 318 SB19-02		1635		✓		1	89
9	SWMU 318 SB19-05		1630		✓		1	90
10								

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-6			2/04/05	1620
2	7-9			2/04/05	1730
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature

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02520

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WORK ORDER NO.

Project Name	Project Location	Due Date:
CTO-0091 RCRA Camp Lejeune		☐ Rush ☐ Standard
Project No.	**Client/Project Contact**	**Project Telephone No.**
014559		
		Project Fax No.

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Analysis Desired (Indicate separate containers) 8260	Remarks
1	SWMU 318-GW33	2/4/05	840		✓		3		05012-73
2	SWMU 318-GW33-01	2/4/05	900		✓		3		74
3	SWMU 318-GW33-02	2/4/05	925		✓		3		75
4	SWMU 336-GW08	2/4/05	1500		✓		3		76
5	SWMU 336-GW08-01	2/4/05	1520		✓		3		77
6	SWMU 336-GW08-010	2/4/05	1520		✓		3		78
7	SWMU 336-GW10	2/4/05	1410		✓		3		79
8	SWMU 336-GW10-01	2/4/05	1430		✓		3		80
9	SWMU 336 GW10 D	2/4/05	1410		✓		3		81
10									

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-3	Jeffrey M. Hodgson	Ron Hall	020405	0950
2	4-9		Ron Hall	020405	1120
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature: Jeffrey M. Hodgson

Print Name:

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02519

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WORK ORDER NO.

Project Name	Project Location	Number of Containers	Analysis Desired (Indicate separate containers)	Due Date:
CTO-0091 RCRA/Camp Lejeune			BTEX	☐ Rush ☐ Standard
Project No.	**Client/Project Contact**	**Project Telephone No.**		
014559				
		Project Fax No.		

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Remarks
1	SWMU 318-GW32	2-3-05	1420		✓		3	05012-67
2	SWMU 318 GW32-01	2/3/05	1445		✓		3	68
3	SWMU 318 GW32-02	2/3/05	1510		✓		3	69
4	SWMU 318 GW31	2/3/05	1555		✓		3	70
5	SWMU 318 GW31-01	2/3/05	1615		✓		3	71
6	SWMU 318 GW31-02	2/3/05	1635		✓		3	72
7								
8								
9								
10								

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-6	Jeffrey M. Rodgers	R Wall	020305	1800
2					
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature: Jeffrey M. Rodgers

Print Name:

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02518

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WORK ORDER NO.

Project Name	Project Location	Project Telephone No.
CTO-0091 RCRA CAMP Lejeune		
Project No.	**Client/Project Contact**	**Project Fax No.**
014559		

Analysis Desired (Indicate separate containers): 8260

Due Date: ☐ Rush ☐ Standard

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Remarks
1	SWMU318-GW45	2/3/05	1335		✓	groundwater sample	3	05012-60
2	SWMU318-GW45-01	2/3/05	1355		✓		3	61
3	SWMU318-GW45-02	2/3/05	1430		✓		3	62
4	SWMU318-GW44	2/3/05	1505		✓		3	63
5	SWMU318-GW44-01	2/3/05	1520		✓		3	64
6	SWMU318-GW44-02	2/3/05	1540		✓		3	65
7	SWMU318-GW44-01D	2/3/05	1525		✓		3	66
8								
9								
10								

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-7	Dan Tamplet	[illegible]	02/04/05	1630
2					
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature: Dan Tamplet

Print Name

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02517

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WORK ORDER NO.

Project Name	Project Location	Project Telephone No.
CTO-0091 RCRA	CAMP Lejeune	
Project No.	**Client/Project Contact**	**Project Fax No.**
014559		

Due Date: ☐ Rush ☐ Standard

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	VOCs	SVOCs	Remarks
1	SWMU318-SB20-00	2/3/05	0930		✓		1	✓		05012-51
2	SWMU318-SB20-02	2/3/05	1000		✓		1	✓		52
3	SWMU318-SB20-04	2/3/05	0950		✓		1	✓		53
4	SWMU318-SB21-00	2/2/05	1040		✓		1	✓		54
5	SWMU318-SB21-02	2/3/05	1050		✓		1	✓		55
6	SWMU318-SB21-04	2/3/05	1105		✓		1	✓		56
7	SWMU318-SB23-00	2/3/05	0825		✓		1	✓		57
8	SWMU318-SB23-02	2/3/05	0840		✓		1	✓		58
9	SWMU318-SB23-04	2/3/05	0900		✓		1	✓		59
10										

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-9			020305	1420
2					
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature

Print Name

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02516

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WORK ORDER NO.

Project Name	Project Location	Number of Containers	Analysis Desired (Indicate separate containers)	Due Date:
CTO-0091 RCRA CAMP LeJeune			8260	☐ Rush ☐ Standard
Project No. 014559	Client/Project Contact	Project Telephone No.		
		Project Fax No.		

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Remarks
1	SWMU 318-GW37	2/3/05	0835		✓		05-012-41
2	SWMU 318-GW37-01	2/3/05	0850		✓		42
3	SWMU 318-GW37-02	2/3/05	0910		✓		43
4	SWMU 318-GW36		1010		✓		44
5	SWMU 318-GW36-01		1035		✓		45
6	SWMU 318 GW36-02		1100		✓		46
7	SWMU 318 GW36-02D		1100		✓		47
8	SWMU 318-GW42		1235		✓		48
9	SWMU 318-GW42-01		1250		✓		49
10	SWMU 318-GW42-02	↓	1315		✓		50

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-3			020305	1045
2	4-7			020305	1130
3	8-10			020305	1430
4					

Remarks (Billing information or other instructions - please print)

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Sampler's Signature

Print Name

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CHAIN-OF-CUSTODY RECORD

02515

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WORK ORDER NO.

Project Name	Project Location	Project Telephone No.
CTO-0091 RCRA Camp Lejeune		
Project No.	**Client/Project Contact**	**Project Fax No.**
014559		

Due Date: ☐ Rush ☐ Standard

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Analysis Desired (Indicate separate containers) 8260	Remarks
1	SWMU318-GW34	2/2/05	1405		✓	groundwater sample	3	✓	05012-34
2	SWMU318-GW34-01	2/2/05	1430		✓		3	✓	35
3	SWMU318-GW34-02	2/2/05	1515		✓		3	✓	36
4	SWMU318-GW95-01D	2/2/05	1435		✓		3	✓	37
5	SWMU318-GW39	2/2/05	1500		✓		3	✓	38
6	SWMU318-GW39-01	2/2/05	1515		✓		3	✓	39
7	SWMU318-GW39-02	2/2/05	1535		✓		3	✓	40
8									
9									
10									

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-4			020305	1545
2	5-7			020205	1550
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature

Print Name

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CHAIN-OF-CUSTODY RECORD

02514

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WORK ORDER NO.

Project Name	Project Location	Due Date:
CTO-0091 RCRA CAMP LeJeune		☐ Rush ☐ Standard
Project No.	**Client/Project Contact**	**Project Telephone No.**
104559		
		Project Fax No.

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Analysis Desired (Indicate separate containers) 8260	Remarks
1	SWMU318-GW43	2/2/05	1145		✓	groundwater	3		05012-27
2	SWMU318-GW43-01	2/2/05	1205		✓	groundwater	3		28
3	SWMU318-GW43-02	2/2/05	1230		✓	groundwater	3		29
4	SWMU318-GW38	2/2/05	1205		✓		3		30
5	SWMU318-GW38-01	2/2/05	1255		✓		3		31
6	SWMU318-GW38-010	2/2/05	1255		✓		3		32
7	SWMU318-GW38-02	2/2/05	1352		✓		3		33
8									
9									
10									

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-3	Dan Tumyk	Brad	020205	1340
2	4-6		Brad	020205	1350
3	7		Brad	020205	1445
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature: Dan Tumyk

Print Name

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02513

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WORK ORDER NO.

Project Name	Project Location
CTO-0091 RCRA CAMU Investigation	

Project No.	Client/Project Contact	Project Telephone No.
104559		
		Project Fax No.

Due Date: ☐ Rush ☐ Standard

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Analysis Desired (Indicate separate containers) 8260	Remarks
1	SWMU318-GW41-01	12/6/05	0830		X		3	X	0.5012-18
2	SWMU336-GW09		0930		X		3	X	19
3	SWMU336-GW09-01		1005		X		3	X	20
4	SWMU336-SB09-00		0900		X		1	X	21
5	SWMU336-SB09-03		0905		X		1	X	22
6	SWMU336-SB09-06		0910		X		1	X	23
7	SWMU318-GW40		0930				3	X	24
8	SWMU318-GW40-01		0950				3	X	25
9	SWMU318-GW40-02		1100				3	X	26
10						Hand Delivered			

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1	Dan Tomczak	Ben Hall	12/6/05	0840
2	2-6	Ben Hall	Ben Hall	12/6/05	1045
3	7-8	Ben Hall	Ben Hall	12/6/05	1100
4	9	Dan Tomczak	Ben Hall	12/6/05	1121

Remarks (Billing information or other instructions - please print)

Sampler's Signature: Dan Tomczak

Print Name: Dan Tomczak

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02512

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WORK ORDER NO.

Project Name	Project Location	Project Telephone No.
CTO-0091 RCRA CAMP Lejeune		
Project No.	**Client/Project Contact**	**Project Fax No.**
104559		

Due Date: ☐ Rush ☐ Standard

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Analysis Desired (Indicate separate containers) 8260 VOC	Remarks
1	SWMW336 SB05-01	2-1-05	1430				1		05012-10
2	SWMW336 SB05-02		1432				1		11
3	SWMW336 SB05-05		1440				1		12
4	SWMW336 GW05		1500				3		13
5	SWMW336 GW05-01		1550				3		14
6	SWMW336 GW04		1400				3		15
7	SWMW318-GW41		1525				3		16
8	SWMW318-GW41-02		1730				3		17
9									
10									

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-5			02/01/05	1600
2	6-7			02/01/05	1740
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature

Print Name

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02511

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WORK ORDER NO.

Project Name	Project Location	Project Telephone No.
CTO-0091 RCRA Camp Lejeune		
Project No.	**Client/Project Contact**	**Project Fax No.**
104559		

Due Date: ☐ Rush ☐ Standard

Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description (Include matrix and point of sample)	Number of Containers	Analysis Desired (Indicate separate containers)	Remarks
1	SWMU 336-GW01	02/01/05	1155				3	8260 VOC	05012-01
2	SWMU 336-GW01-01		1230				3		02
3	SWMU 336-GW04-01		1220				3		03
4	SWMU 336 SB01-00		1100				1		04
5	SWMU 336 SB01-02		1120				1		05
6	SWMU 336 SB01-04		1130				1		06
7	SWMU 336 SB04-00		1145				1		07
8	SWMU-336 SB04-02		1150				1		08
9	SWMU 336 SB04-04		1205				1		09
10									

Transfer Number	Item Number	Transfers Relinquished by	Transfers Accepted by	Date	Time
1	1-9				
2				02/01/05	1430
3					
4					

Remarks (Billing information or other instructions - please print)

Sampler's Signature

Print Name

White: LANDMARK file copy • Yellow: Laboratory copy • Pink: Client copy

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04092
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

6

Client: Baker Environmental Inc | Contact: Rob Sok | Phone #: (412) 897-1934 | Fax #: ( )

Address: 100 Airside Drive | City: Moon Twp. | State: PA | Zip Code: 15108

Purchase Order # | Proj. Name / No.: CTO-0091 RCRA-Camp Lejeune | Katahdin Quote #

Bill (if different than above): CH2M Hill | Address

Sampler (Print / Sign): Robert M. Sok II | Copies To: Adrienne Jones

LAB USE ONLY | WORK ORDER #: WU0458, WU0464 | KATAHDIN PROJECT NUMBER

REMARKS:

SHIPPING INFO: ☒ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: 8456 3095 3222

TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: TCL VOCs	RCRA metals	Filt. ☐Y ☐N (×10)
SWMU 336-SB01-00	2/1/05/ 1100	Soil	4	x	x	
SWMU 336-SB04-02	2/1/05/ 1150	Soil	4	x	x	
SWMU 336-SB05-02	2/1/05/ 1432	Soil	1		x	
SWMU 336-GW04-01	2/1/05/ 1320	Water	3	x		
TB01	2/1/05/ NA	Water	2	x		
	/					
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COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
[signature]	2/1/05 1700	[signature]		2/2/05 0905	[signature]
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000011

ORIGINAL

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04092
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
BAKER Environmental, Inc.	Rob SoK	(412) 897-1934	( )

Address	City	State	Zip Code
100 AIRSIDE Drive	Moon Township	PA	15108

Purchase Order #	Proj. Name / No.	Katahdin Quote #

Bill (if different than above) CH2M HILL — Address

Sampler (Print / Sign) Robert M SoK II — Copies To: ADRIENNE JONES

LAB USE ONLY — WORK ORDER #: WJ0525, WJ0514

KATAHDIN PROJECT NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE / PRESERVATIVES: TCL VOCs (Filt. ☐Y ☐N)	TCL SVOCs (Filt. ☐Y ☐N)	RCRA Metals (Filt. ☐Y ☐N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
TB02-020205	2-2-05/NA	water	2	X									
SWMW318-GW38	2-2-05/1205	water	2		X								
SWMW318-GW34	2-2-05/1405	water	2		X								
SWMW336-GW09-01	2-2-05/1005	water	3	X									
ER01-020205	2-2-05/1100	water	5	X	X								
SWMW336-SB09-06	2-2-05/0910	soil	1			X							
SWMW318-GW37	2-3-05/0855	water	5	X	X								
SWMW318-GW36	2-3-05/1010	water	2		X								
SWMW318-SB21-00	2-3-05/1040	soil	2		X	X							
SWMW318-SB21-02	2-3-05/1050	soil	4	X		X							
SWMW318-SB21-04	2-3-05/1050	soil	1		X								
SWMW318-SB23-00	2-3-05/825	soil	1		X								
SWMW318-SB23-02	2-3-05/840	soil	5	X	X	X							
SWMW318-SB23-04	2-3-05/900	soil	1			X							
SWMW318-SB20-00	2-3-05/930	soil	3	X									
SWMW318-SB20-02	2-3-05/1000	soil	2		X	X							
SWMW318-SB20-04	2-3-05/950	soil	2		X	X							

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
[signature]	2-3-05 1600	[signature] 2/4/05			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

000012

ORIGINAL

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04092
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client: Baker Environmental Inc. | Contact: Robert Sok | Phone #: (412) 897-1934 | Fax #: ( )

Address: 100 Airside Drive | City: Moon Twp | State: PA | Zip Code: 15108

Purchase Order # | Proj. Name / No.: GTO-0091 RCRA Camp Lejeune | Katahdin Quote #

Bill (if different than above): Adrienne Jones (Hill) | Address:

Sampler (Print / Sign): Robert M. Sok II | Copies To: Adrienne Jones

LAB USE ONLY | WORK ORDER #: WJ0527, WJ0528 | KATAHDIN PROJECT NUMBER

REMARKS:

SHIPPING INFO: ☒ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: 8456 3095 3174

TEMP °C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: Filt. ☐Y ☐N — TCL VOCs	TCL SVOCs	RCRA Metals	TOC
SWMU318-SB23-02	2/3/05/0840	Soil	1				X
SWMU318-GW31	2/3/05/1555	Water	3	X			
SWMU318-SB26-01	2/4/05/1015	Soil	2		X	X	
SWMU318-SB26-02	2/4/05/1020	Soil	5	X	X	X	
SWMU318-SB16-00	2/4/05/1155	Soil	5	X	X	X	
SWMU318-SB16-02	2/4/05/1215	Soil	2		X	X	
SWMU318-GW33-01	2/4/05/0900	Water	3	X			
SWMU318-GW32	2/3/05/1420	Water	2		X		
SWMU318-GW31	2/3/05/1555	Water	2		X		
SWMU318-GW33	2/4/05/0840	Water	2		X		
ER02 020405	2/4/05/1140	Water	6	X	X	X	
TB02 020405	2/4/05/NA	Water	2	X			

COMMENTS: Please take VOCs moisture from SVOC jars / will collect 2oz jar next time

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	2/4/05 1630				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

ORIGINAL

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04092
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

3-4

PLEASE PRINT IN PEN

Client: Baker Environmental Inc. | Contact: Robert Sak | Phone #: (412) 897-1934 | Fax #: ( )

Address: 100 Airside Drive | City: Moon Twp. | State: PA | Zip Code: 15108

Purchase Order # | Proj. Name / No.: RCRA Camp Lejeune CTO 0091 | Katahdin Quote #

Bill (if different than above): Cathy M. Hill | Address

Sampler (Print / Sign): Robert M. Sak | Copies To:

LAB USE ONLY | WORK ORDER #: WV0578, WV0580, WV0579

KATAHDIN PROJECT MANAGER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: TCL VOC (Filt. Y/N)	TCL SVOC (Filt. Y/N)	RCRA metals (Filt. Y/N)	TOC (Filt. Y/N)	Moisture (Filt. Y/N)	Filt. Y/N	Filt. Y/N	Filt. Y/N	Filt. Y/N	Filt. Y/N
	TB04 020805	2/8/05/	WATER	2	X									
	SWMU318-SB20-00D	0940	Soil	3 4	X				X					
	SWMU318-SB20-00 MS/MSD	0940	Soil	6	X									
	SWMU318-SB25-02	2/8/05/1025	Soil	2		X	X							
	SWMU318-SB25-02D	2/8/05/1025	Soil	2		X	X							
	SWMU318-SB25-04	2/8/05/1030	Soil	2		X	X							
	SWMU318-SB25-04D	2/8/05/1030	Soil	2		X	X							
	SWMU318-SB25-04 MS/MSD	2/8/05/1030	Soil	4		X								
	SWMU318-SB28-02	2/8/05/1115	Soil	2		X	X							
	SWMU318-SB28-02D	2/8/05/1115	Soil	2		X	X							
	SWMU318-SB28-04	2/8/05/1120	Soil	2		X	X							
	SWMU318-SB28-04D	2/8/05/1120	Soil	2		X	X							
	SWMU318-SB28-04 MS/MSD	2/8/05/1120	Soil	4		X								
	SWMU318-GW35-01	2/5/05/1140	Water	3	X									
	SWMU318-GW35	2/5/05/1105	Water	2		X								
	SWMU318-GW51-01	2/7/05/1635	Water	3	X									

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	2/8/05 1800				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04092
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client: Baker Environmental Inc | Contact: Robert Sok | Phone #: (412) 857-9134 | Fax #: ( )

Address: 100 Airside Drive | City: Moon Twp | State: PA | Zip Code: 15108

Purchase Order # | Proj. Name / No.: RCRA Camp Lejeune CTO-0091 | Katahdin Quote #

Bill (if different than above): CH2M Hill | Address

Sampler (Print / Sign): Robert M. Sok II | Copies To: Adrienna Jones

LAB USE ONLY | WORK ORDER #: WW0580, WW0581 | KATAHDIN PROJECT NUMBER: WW2589

REMARKS:

SHIPPING INFO: ☒ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: 8456 3095 3196

TEMP °C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: TCL VOCs	TCL SVOCs	RCRA Metals	TOC	Filt. ☐Y ☐N (4 more)
ER03 020605	2/6/05 / 1700	Water	6	X	X	X		
ER04 020805	2/8/05 / 1415	Water	6	X	X	X		
SWMU318-SB18-01	2/7/05 / 1055	Soil	1				X	
SWMU318-SB18-02	2/7/05 / 1045	Soil	2		X	X		
SWMU318-SB18-03	2/7/05 / 1050	Soil	2		X	X		
SWMU318-SB19-00	2/4/05 / 1625	Soil	2		X	X		
SWMU318-SB19-05	2/4/05 / 1630	Soil	2		X	X		
SWMU318-SB15-01	2/5/05 / 1550	Soil	2		X	X		
SWMU318-SB15-03	2/5/05 / 1600	Soil	2		X	X		
SWMU318-SB14-02	2/5/05 / 1510	Soil	2		X	X		
SWMU318-SB14-03	2/5/05 / 1505	Soil	2		X	X		
SWMU318-SB17-02	2/5/05 / 1635	Soil	2		X	X		
SWMU318-SB17-03	2/5/05 / 1640	Soil	2		X	X		
SWMU318-SB22-03	2/7/05 / 1355	Soil	2		X	X		
SWMU318-SB22-04	2/7/05 / 1350	Soil	2		X	X		
SWMU318-SB24-03	2/7/05 / 1145	Soil	1				X	

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
[signature]	2/8/05 1600	[signature] 2/9/05 0900			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000009

ORIGINAL

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04092
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE PRINT IN PEN

Client: Baker Environmental Inc | Contact: Rob Sok | Phone #: (412) 899-1934 | Fax #: ( )

Address: 100 Airside Drive | City: Moon Twp | State: PA | Zip Code: 15108

Purchase Order # | Proj. Name / No.: RCRA Camp Lejeune CTO-0091 | Katahdin Quote #

Bill (if different than above): CH2M Hill | Address

Sampler (Print / Sign): Robert M. Sok III | Copies To: Adrienne Jones

LAB USE ONLY | WORK ORDER #: J0058t | KATAHDIN PROJECT MANAGER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: Filt. Y N	TCL VOCs	TCL SVOCs	RCRA Metals
	SWMU38-5827-02	2/7/05/1440	Soil	2			X	X
	SWMU38-5827-02D	2/7/05/1510	Soil	1			X	
	SWMU38-5827-03	2/7/05/1445	Soil	2			X	X
	SWMU38-5829-00	2/7/05/1130	Soil	2			X	X
	SWMU38-5829-03	2/7/05/1145	Soil	2			X	X

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	2/8/05 1600		2/9/05 0905		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04092
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE PRINT IN PEN

Client: Baker Environmental Inc | Contact: Rob Sak | Phone #: (412) 837-1934 | Fax #: ( )

Address: 100 Airside Drive | City: Moon Twp. | State: PA | Zip Code: 15108

Purchase Order # | Proj. Name / No.: CTO-0071 RCRA-Camp Lejeune | Katahdin Quote #

Bill (if different than above): CH2M Hill | Address

Sampler (Print / Sign): Robert M. Sak II | Copies To: Adrienne Jones

LAB USE ONLY | WORK ORDER #: WV0749

KATAHDIN PROJECT MANAGER

REMARKS:

SHIPPING INFO: ☒ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: 8456 3095 2925

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	Filt. Y N TCL VOCs	Filt. Y N TCL SVOCs	Filt. Y N RCRA Metals	Filt. Y N Disp. Cases	Filt. Y N	Filt. Y N	Filt. Y N	Filt. Y N	Filt. Y N	Filt. Y N
	FB01-05A	2/15/05/1015	W	6	X	X	X							
	FB02-05A	2/18/05/1020	W	6	X	X	X							
	FB03-05A	2/15/05/1030	W	6	X	X	X							
	TB04-021805	2/18/05/NA	W	3	X									
	86-GW17IW-05A	2/17/05/0845	W	6	X	X	X	X						
	86-GW21IW-05A	2/17/05/1045	W	6	X	X	X	X						
	86-GW21IW-05A MS	2/17/05/1045	W	6	X	X	X							
	86-GW21IW-05A MSD	2/17/05/1045	W	6	X	X	X							
	318-MW04-05A	2/17/05/1315	W	6	X	X	X	X						
	318-MW04D-05A	2/17/05/1315	W	6	X	X	X							
	86-GW22IW-05A	2/17/05/1535	W	6	X	X	X	X						
	318-MW05-05A	2/17/05/1710	W	6	X	X	X	X						
	318-MW02-05A	2/18/05/0910	W	6	X	X	X	X						
	318-MW02D-05A	2/18/05/0910	W	6	X	X	X							
	86-GW27IW-05A	2/18/05/1120	W	6	X	X	X	X						
	318-MW03-05A	2/18/05/1315	W	6	X	X	X	X						

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	2/17/05 1730		2/18/05 1030		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04092
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE PRINT IN PEN

Client: Baker Environmental Inc. | Contact: Rob Sok | Phone #: (412) 837-1954 | Fax #: ( )

Address: 100 Airside Drive | City: Moon Twp. | State: PA | Zip Code: 15108

Purchase Order # | Proj. Name / No.: CTO-0091 RIFA Camp Lejeune | Katahdin Quote #

Bill (if different than above): CH2M Hill | Address

Sampler (Print / Sign): Robert M. Sok II | Copies To: Adrienne Jones

LAB USE ONLY | WORK ORDER #: W00749

KATAHDIN PROJECT MANAGER

REMARKS:

SHIPPING INFO: ☒ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: 8456 3095 2925

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: TCL VOCs (Filt. ☐Y ☐N)	TCL SVOCs (Filt. ☐Y ☐N)	RCRA Metals (Filt. ☐Y ☐N)	Diss. Gases (Filt. ☐Y ☐N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	816-GW02IW-05A	2/16/05/1455	W	6	X	X	X	X						
	816-GW20IW-05A	2/16/05/1625	W	6	X	X	X	X						
	318-MW01-05A	2/15/05/1550	W	6	X	X	X	X						
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COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	2/18/05 1730		2/19/05 1030		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

IMBOURCE INC. ☎ (207) 773-3311
IM # CHN-OF-CBTDY

ORIGINAL

MMMMS

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04092
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE PRINT IN PEN

Client: Baker Environmental Inc. | Contact: Rob Sok | Phone #: (412) 897-1934 | Fax #: ( )

Address: 100 Airside Drive | City: Moon Twp | State: PA | Zip Code: 15108

Purchase Order # | Proj. Name / No.: CTO-0091, RCRA-Camp Lejeune | Katahdin Quote #

Bill (If different than above): CH2M Hill | Address

Sampler (Print / Sign): Robert M. Sok II | Copies To: Adriene Jones

LAB USE ONLY | WORK ORDER #: WV0758

KATAHDIN PROJECT MANAGER

REMARKS:

SHIPPING INFO: ☒ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: 8456 3095 2958

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: TCL VOCs	TCL SVOCs	RCRA Metals	Diss. Gases	Filt. Y/N	Filt. Y/N	Filt. Y/N	Filt. Y/N	Filt. Y/N	Filt. Y/N	Filt. Y/N	Filt. Y/N
	SWMU318-MW08-05A	2/19/05/0920	W	8	X	X	X	X								
	SWMU318-MW08-05A MS	2/19/05/0920	W	5	X	X										
	SWMU318-MW08-05A MSD	2/19/05/0920	W	5	X	X										
	SWMU318-MW07-05A	2/19/05/1110	W	8	X	X	X	X								
	SWMU318-MW06DW-05A	2/19/05/1230	W	8	X	X	X	X								
	SWMU318-MW26-05A	2/19/05/1335	W	8	X	X	X	X								
	SWMU318-MW04DW-05A	2/19/05/1455	W	8	X	X	X	X								
	SWMU318-MW05DW-05A	2/20/05/0915	W	8	X	X	X	X								
	SWMU318-MW05DW-05AD	2/20/05/0915	W	6	X	X	X									
	ER05-05A	2/20/05/1515	W	6	X	X	X									
	TB05-022005	2/20/05/NA	W	2	X											
		/														
		/														
		/														
		/														
		/														

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	2/21/05 0830		2/22/05 0855		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

Katahdin ANALYTICAL SERVICES

340 County Road No. 5
P.O. Box 720
Westbrook, ME 04092
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE PRINT IN PEN

Client: Baker Environmental Inc	Contact: Rob Sok	Phone #: (412) 897-1934	Fax #: ( )
Address: 100 Airside Drive	City: Moon Twp	State: PA	Zip Code: 15108
Purchase Order #:	Proj. Name / No.: CTO-0091 RCRA		Katahdin Quote #:
Bill (if different than above): CH2M Hill	Address:		
Sampler (Print / Sign): Robert M Sok I			Copies To: Adrienne Jones

LAB USE ONLY

WORK ORDER #:

KATAHDIN PROJECT MANAGER

REMARKS:

SHIPPING INFO: ☒ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: 8456 3095 2947

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	TPD (Filt. ☐Y ☐N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	SWMU318-MW07-11	2/16/05 / 1630	Soil	1	X									
	SWMU318-MW05DW-15	2/18/05 /	Soil	1	X									
	SWMU318-SB20-14	2/19/05 / 0850	Soil	1	X									
		/												
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		/												
		/												

COMMENTS: Please verify shipment by calling Rob Sok (412) 897-1934 or Adrienne Jones (757) 671-8311 x442

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
[signature]	2/21/05 0830				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

CUSTOMER

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04092
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
Baker Environmental Inc	Robert Sak	(412) 897-1934	( )

Address 100 Airside Drive | City Moon Twp | State PA | Zip Code 15108

Purchase Order # | Proj. Name / No. CTO-0091 RI/FS Comp Lejeune | Katahdin Quote #

Bill (if different than above) Chem Hill (Louise Palmer) | Address

Sampler (Print / Sign) Robert M. Sak II | Copies To:

LAB USE ONLY | WORK ORDER #:

KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: ☑ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: 8456 3095 2914

TEMP°C _____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: SOIL	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	SWMU35B-SB18-01	9/2/05 / 1040	Soil	1	X										
	SWMU35B-SB24-03	9/2/05 / 1145	Soil	1	X										
		/													
		/													
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		/													

COMMENTS Please call Rob Sak (412) 897-1934 to confirm samples have been received.

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
[signature]	9/2/05 1700				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

CUSTOMER COPY

TriMatrix Laboratories, Inc.

5560 Corporate Exchange Court SE Grand Rapids, MI 49512
Phone (616) 975-4500 Fax (616) 942-7463
www.trimatrixlabs.com

Chain of Custody Record

COC No. NO 105349

Page 1 of 1

Analytical Environmental Services
c/o Tim Jarosch - Redox Tech

For Lab Use Only			
Cart			
VOA Rack/Tray	Client Name: Baker Environmental Inc.	Project Name: CTO-0091 RCRA Camp Lejeune	
Receipt Log No.	Address: 100 Airside Drive	Client Project No. / P.O. No.: 104559 FI.SG.	
Project Chemist	Moon Twp., PA 15108	Invoice To: ☐ Client ☒ Other (comments)	
Laboratory Project No.	Phone: (412) 897-1934	Contact/Report To: Robert Sok	
	Fax		

Analyses Requested

TOD

Container Type (corresponds to Container Packing List)

PRESERVATIVES
A NONE pH~7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

Test Group	Matrix Code	Laboratory Sample Number		Sample ID	Cooler ID	Sample Date	Sample Time	COMP	GRAB	Matrix	Number of Containers Submitted	Total	Sample Comments
			1	SWMU318-5820-02	—	2/3/05	1000		✓	Soil	1		
			2										
			3										
			4										
			5										
			6										
			7										
			8										
			9										
			10										

Any questions call ✓

Sampled By (print): Robert M. Sok II

Sampler's Signature:

Company: Baker Environmental Inc.

How Shipped? Hand Carrier FED EX

Tracking No. 8156 3095 3185

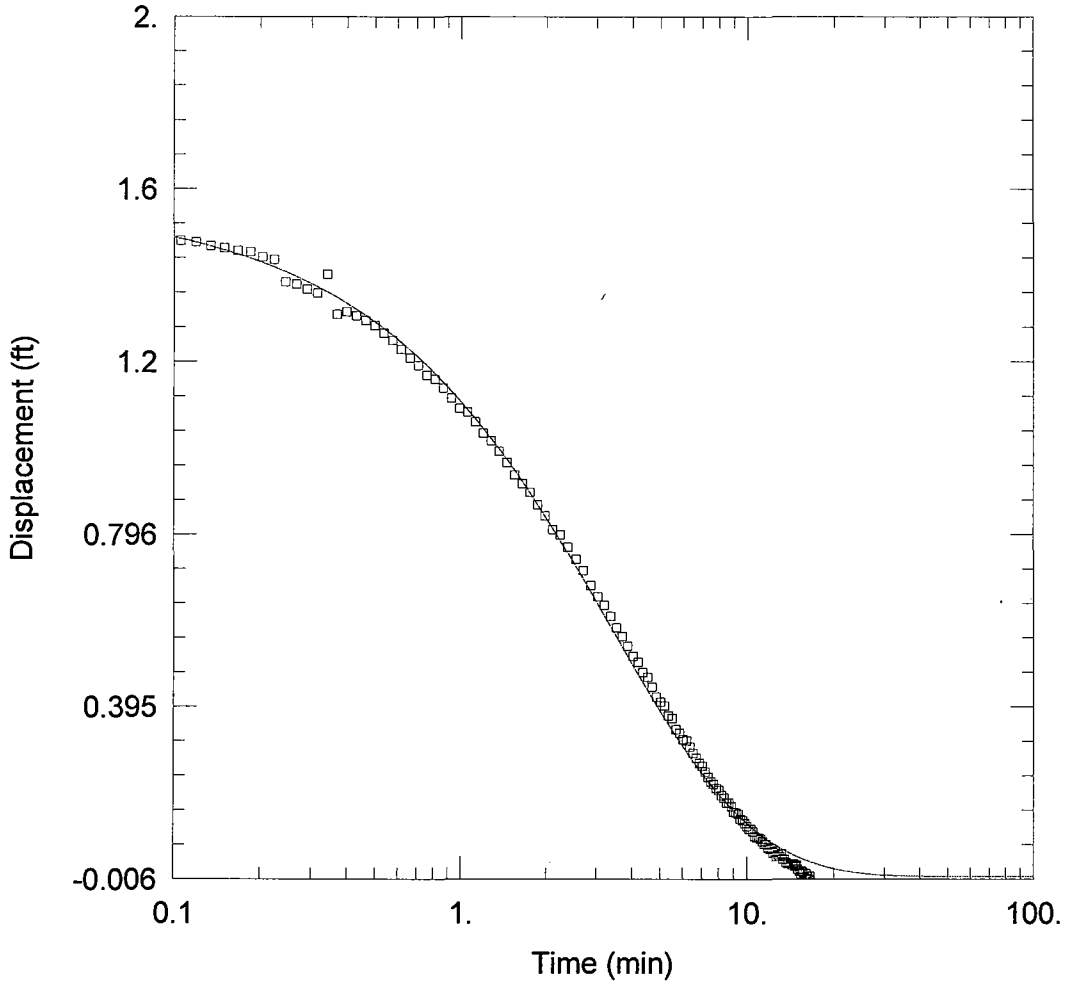
Comments: Please contact Robert Sok, we will need to discuss billing options. (cell) 412-897-1934 or Jim Culp (412) 269-2098

1. Relinquished By	Date	Time	2. Relinquished By	Date	Time	3. Relinquished By	Date	Time
	2/3/05	1430						
1. Received By	**Date**	**Time**	**2. Received By**	**Date**	**Time**	**3. Received For Lab By**	**Date**	**Time**

TriMatrixCOC -- COC WHITE COPY - REPORT YELLOW COPY - LABORATORY PINK COPY - FIELD

APPENDIX D

Slug Test Data



RISING HEAD TEST #1

Data Set: J:\...\318-MW01R1-kgs.aqt
Date: 08/01/05 Time: 09:59:40

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft

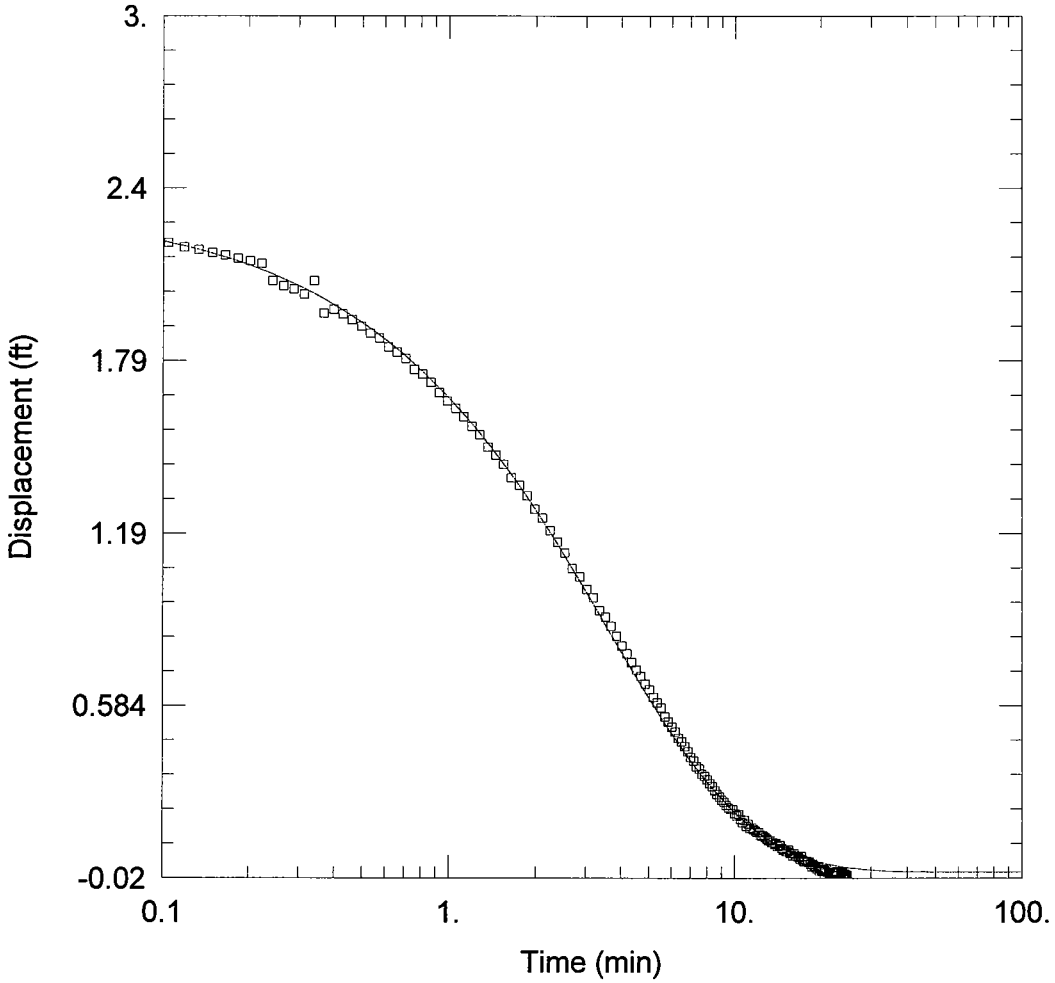
WELL DATA (318-MW01)

Initial Displacement: 1.573 ft
Total Well Penetration Depth: 24.9 ft
Casing Radius: 0.0833 ft
Well Skin Radius: 0.427 ft
Static Water Column Height: 24.9 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model w/skin

Kr = 0.3791 ft/day
Kz/Kr = 1.
Ss = 1.2E-05 ft^{-1}
Kr' = 0.05408 ft/day



RISING HEAD TEST #2

Data Set: J:\...\318-MW01R2-kgs.aqt
Date: 08/01/05 Time: 10:03:04

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft

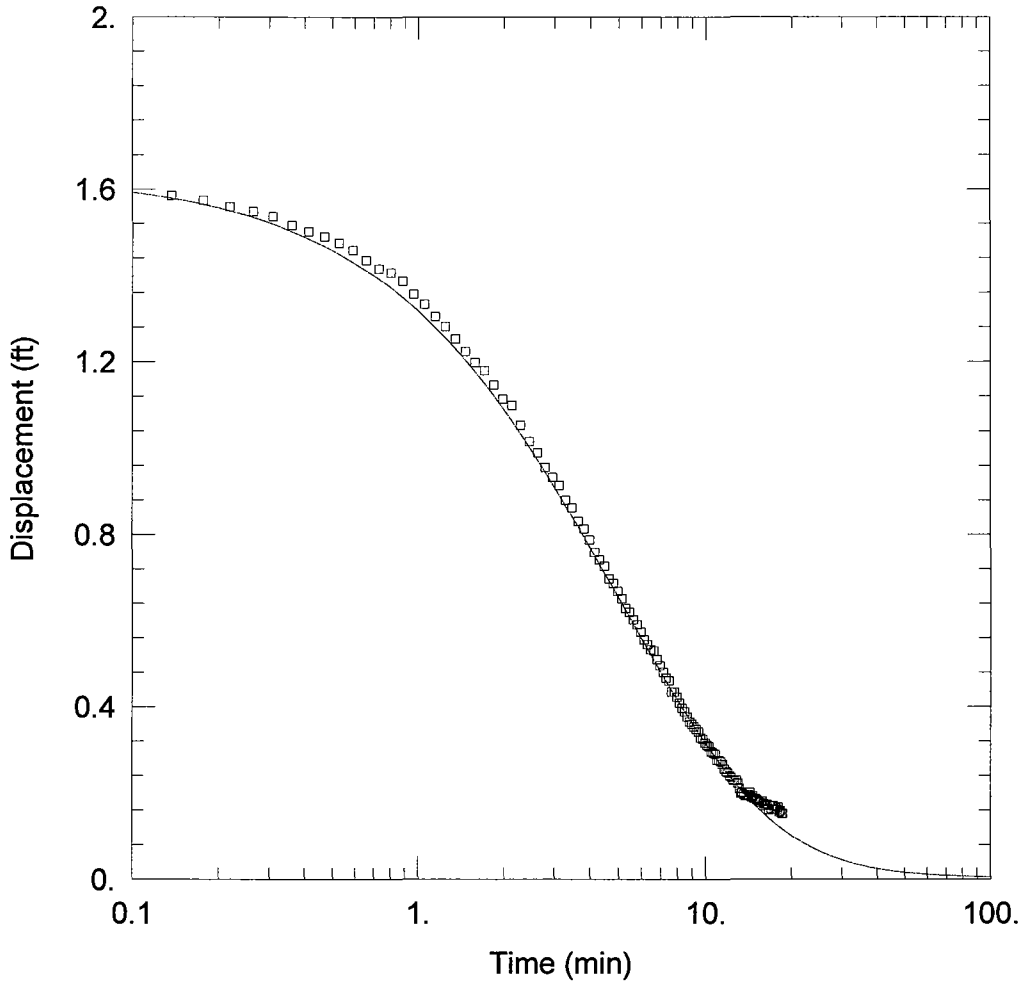
WELL DATA (318-MW01)

Initial Displacement: 2.339 ft
Total Well Penetration Depth: 24.9 ft
Casing Radius: 0.0833 ft
Well Skin Radius: 0.427 ft
Static Water Column Height: 24.9 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model w/skin

Kr = 0.356 ft/day
Kz/Kr = 1.
Ss = 1.435E-05 ft^{-1}
Kr' = 540.8 ft/day



FALLING HEAD TEST #2

Data Set: J:\...\318-MW01F2-kgs.aqt
Date: 08/01/05 Time: 10:03:22

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft

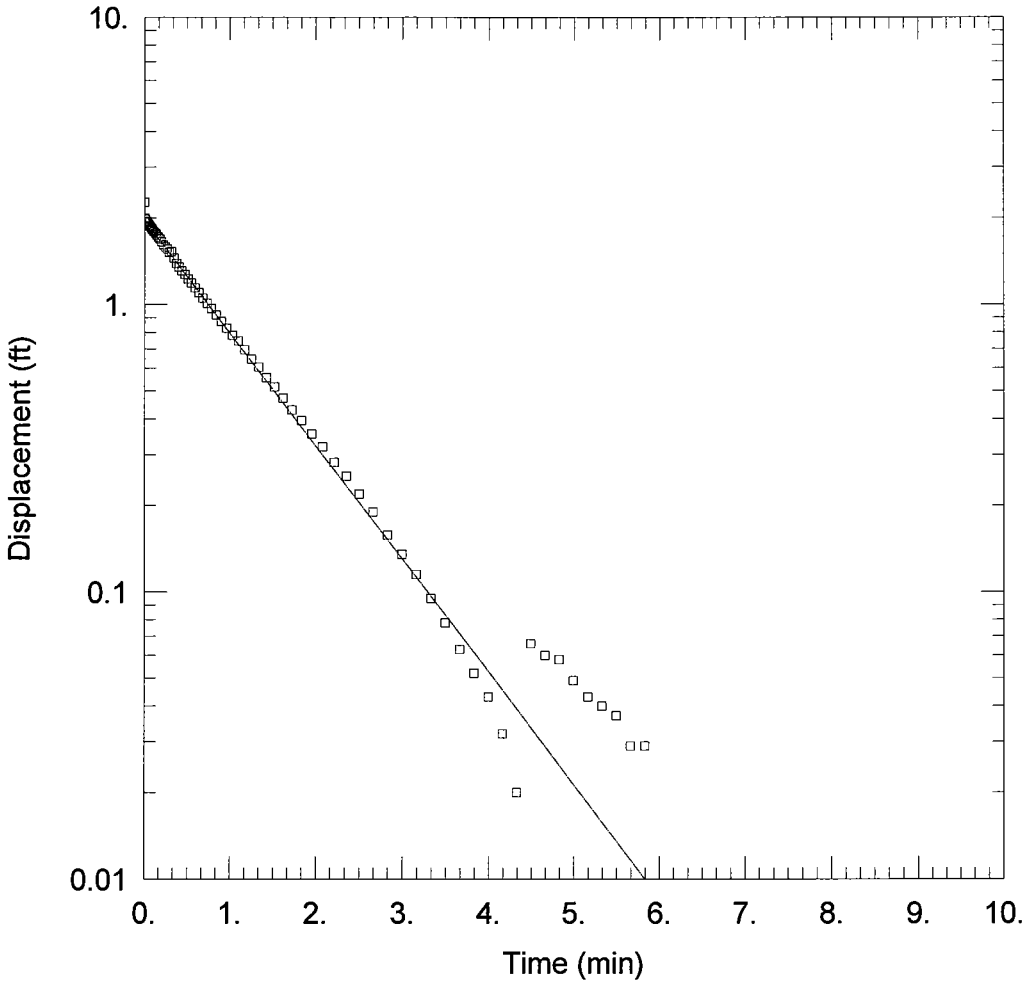
WELL DATA (318-MW01)

Initial Displacement: 1.632 ft
Total Well Penetration Depth: 24.9 ft
Casing Radius: 0.0833 ft
Well Skin Radius: 0.717 ft
Static Water Column Height: 24.9 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model w/skin

Kr = 0.3619 ft/day
Kz/Kr = 1.
Ss = 0.0005 ft^{-1}
Kr' = 0.06503 ft/day



RISING HEAD TEST #1

Data Set: J:\...\318-MW02R1-B&R.aqt
Date: 08/01/05 Time: 10:03:57

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

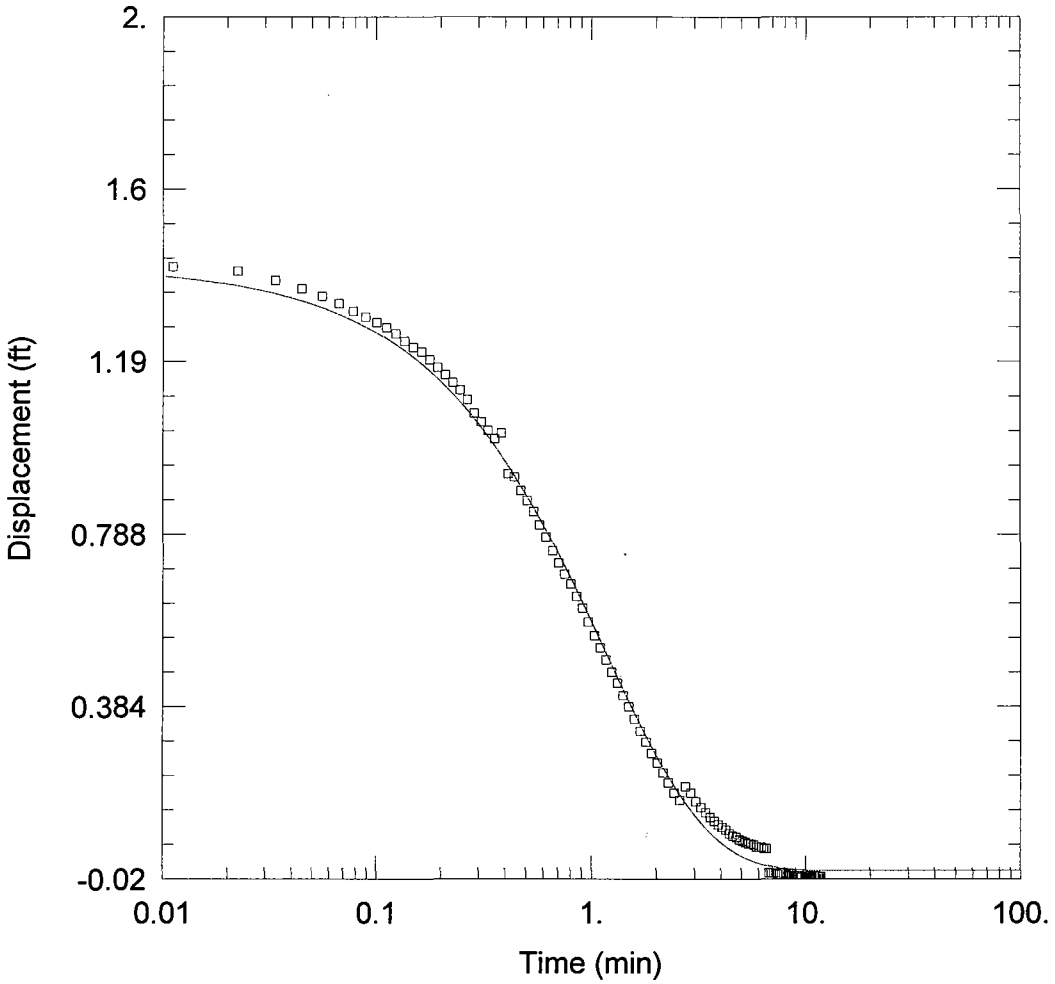
WELL DATA (318-MW02)

Initial Displacement: 2.266 ft
Total Well Penetration Depth: 24.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 24.4 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.9838 ft/day y0 = 1.963 ft



RISING HEAD TEST #2

Data Set: J:\...\318-MW02R2-kgs.aqt
Date: 08/01/05 Time: 10:04:04

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft

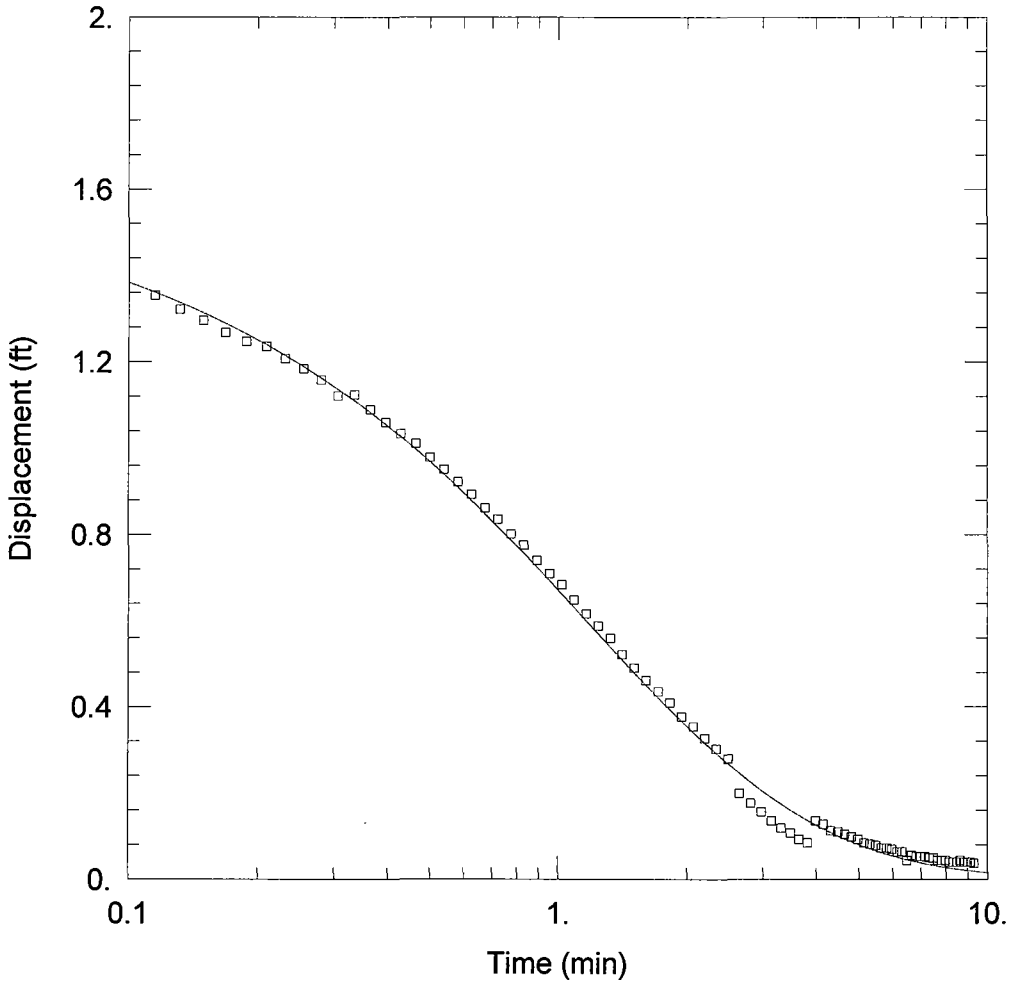
WELL DATA (318-MW02)

Initial Displacement: 1.42 ft
Total Well Penetration Depth: 24.5 ft
Casing Radius: 0.0833 ft
Well Skin Radius: 0.427 ft
Static Water Column Height: 24.4 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model w/skin

Kr = 1.166 ft/day
Kz/Kr = 1.
Ss = 6.17E-06 ft^{-1}
Kr' = 540.8 ft/day



FALLING HEAD TEST #1

Data Set: J:\...\318-MW02F1-kgs.aqt
Date: 08/01/05 Time: 10:03:36

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft

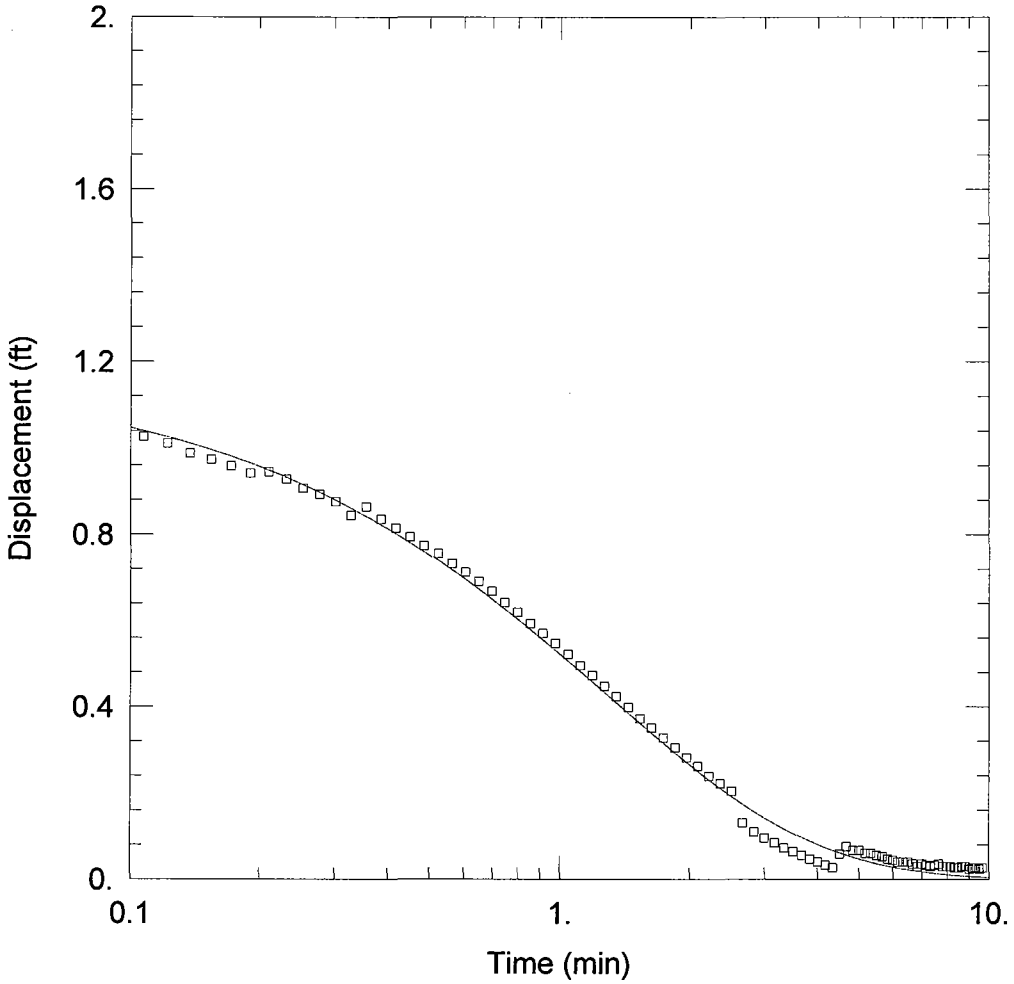
WELL DATA (318-MW02)

Initial Displacement: 1.611 ft
Total Well Penetration Depth: 24.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 24.4 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 0.9645 ft/day
Kz/Kr = 1.
Ss = 4.028E-05 ft^{-1}



FALLING HEAD TEST #2

Data Set: J:\...\318-MW02F2-kgs.aqt
Date: 08/01/05 Time: 10:03:47

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft

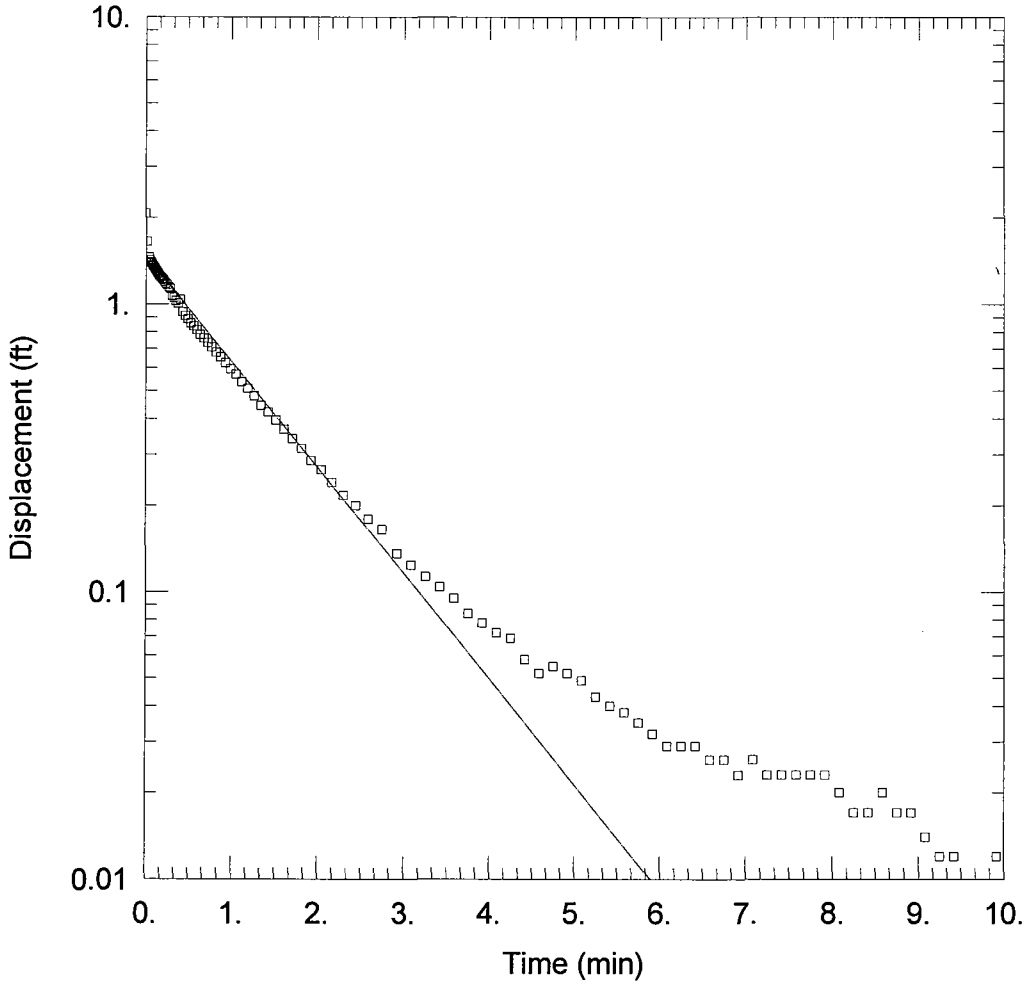
WELL DATA (318-MW02)

Initial Displacement: 1.181 ft
Total Well Penetration Depth: 24.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 24.4 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 1.011 ft/day
Kz/Kr = 1.
Ss = 1.208E-05 ft^{-1}



RISING HEAD TEST #1

Data Set: J:\...\318-MW03R1-B&R.aqt
Date: 08/01/05 Time: 10:04:30

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

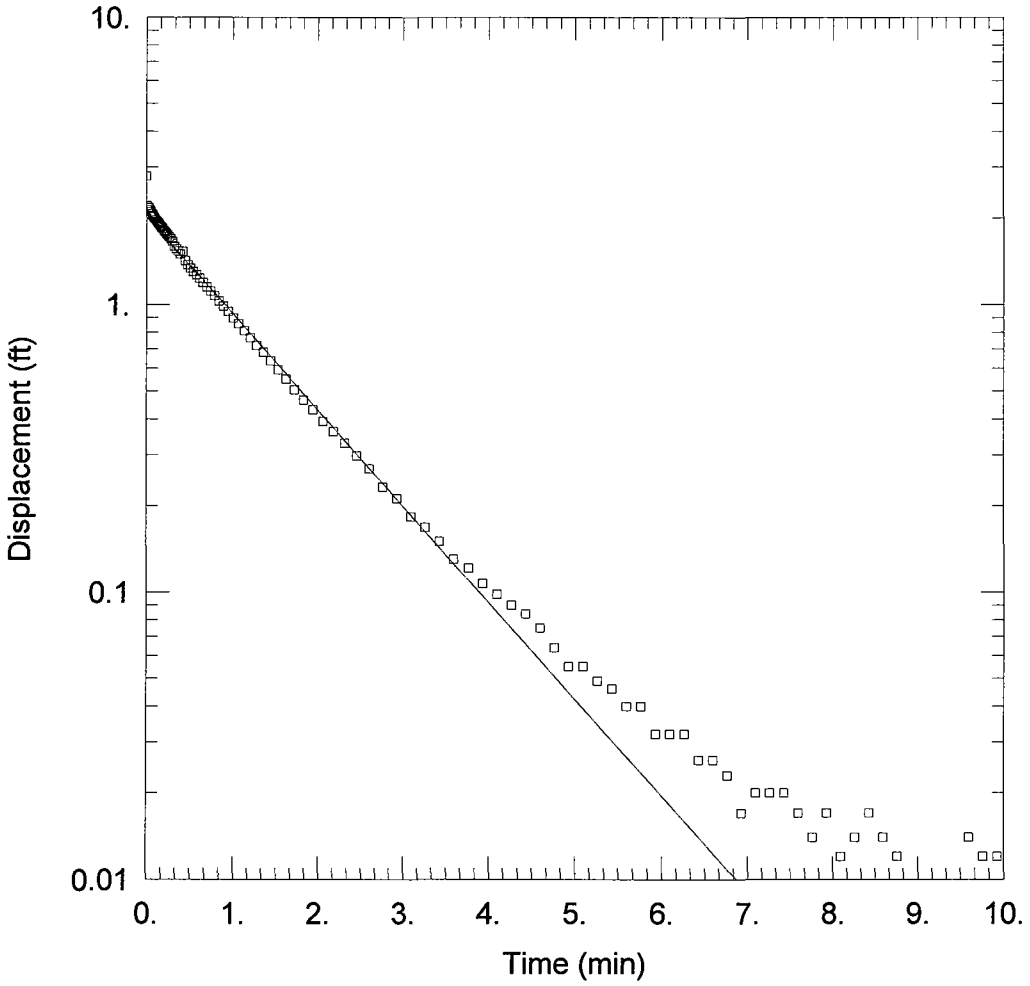
WELL DATA (318-MW03)

Initial Displacement: 2.065 ft
Total Well Penetration Depth: 24.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 24.5 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.9214 ft/day y0 = 1.475 ft



RISING HEAD TEST #2

Data Set: J:\...\318-MW03R2-B&R.aqt
Date: 08/01/05 Time: 10:04:39

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

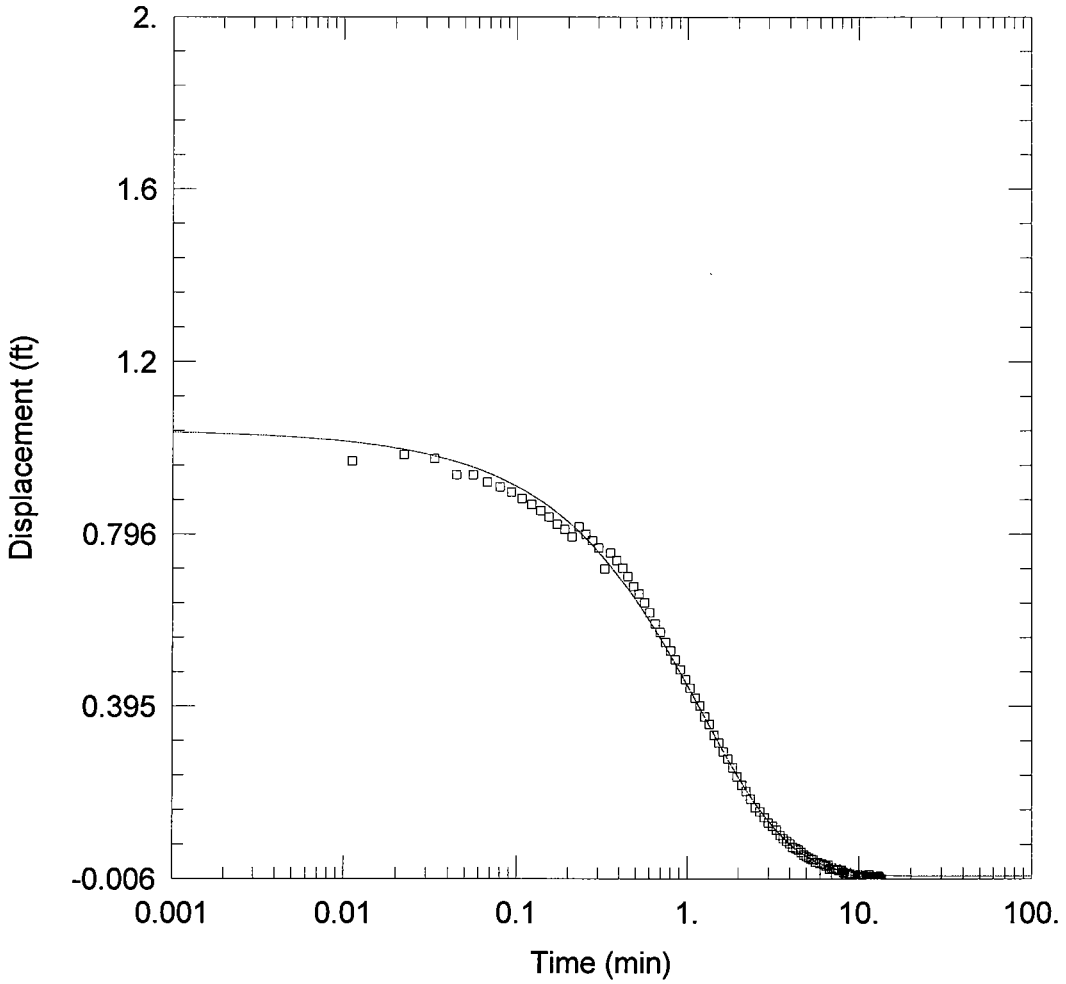
WELL DATA (318-MW03)

Initial Displacement: 2.79 ft
Total Well Penetration Depth: 24.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 24.5 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.8389 ft/day y0 = 2.004 ft



FALLING HEAD TEST #1

Data Set: J:\...\318-MW03F1-kgs.aqt
Date: 08/01/05 Time: 10:04:13

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft

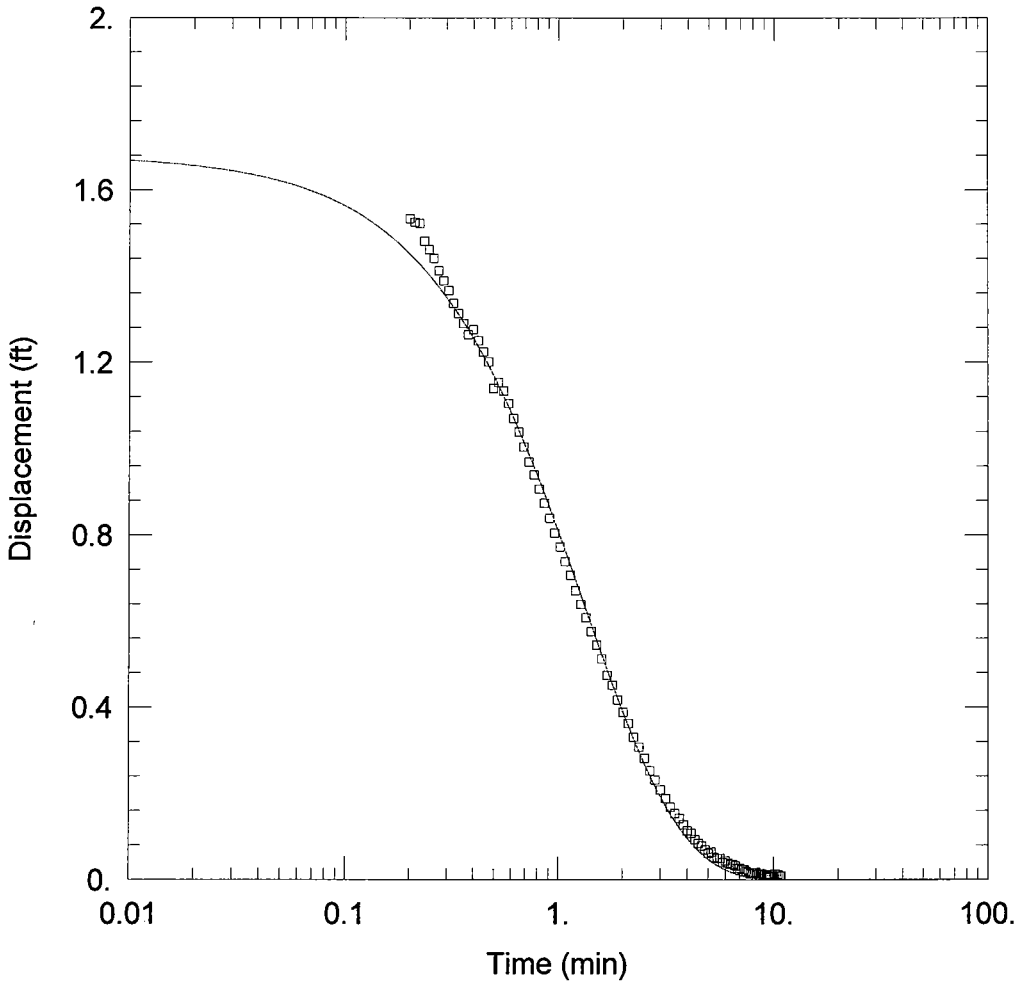
WELL DATA (318-MW03)

Initial Displacement: 1.041 ft
Total Well Penetration Depth: 24.5 ft
Casing Radius: 0.0833 ft
Well Skin Radius: 0.427 ft
Static Water Column Height: 24.5 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model w/skin

Kr = 0.9948 ft/day
Kz/Kr = 1.
Ss = 2.343E-05 ft^{-1}
Kr' = 0.05408 ft/day



FALLING HEAD TEST #2

Data Set: J:\...\318-MW03F2-kgs.aqt
Date: 08/01/05 Time: 10:04:21

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft

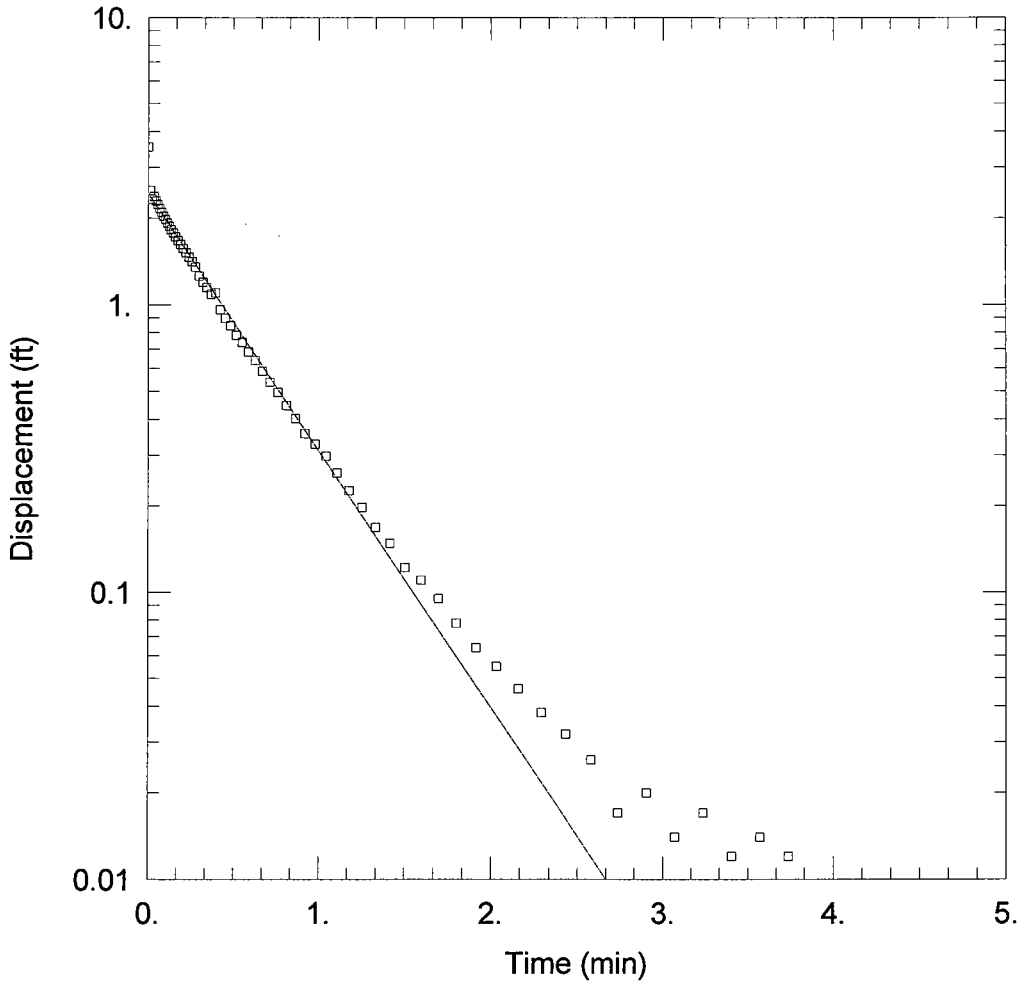
WELL DATA (318-MW03)

Initial Displacement: 1.681 ft
Total Well Penetration Depth: 24.5 ft
Casing Radius: 0.0833 ft
Well Skin Radius: 0.427 ft
Static Water Column Height: 24.5 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model w/skin

Kr = 1.018 ft/day
Kz/Kr = 1.
Ss = 5.E-13 ft^{-1}
Kr' = 0.05408 ft/day



RISING HEAD TEST #1

Data Set: J:\...\86-MW25R1-B&R.aqt
Date: 08/01/05 Time: 09:58:29

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

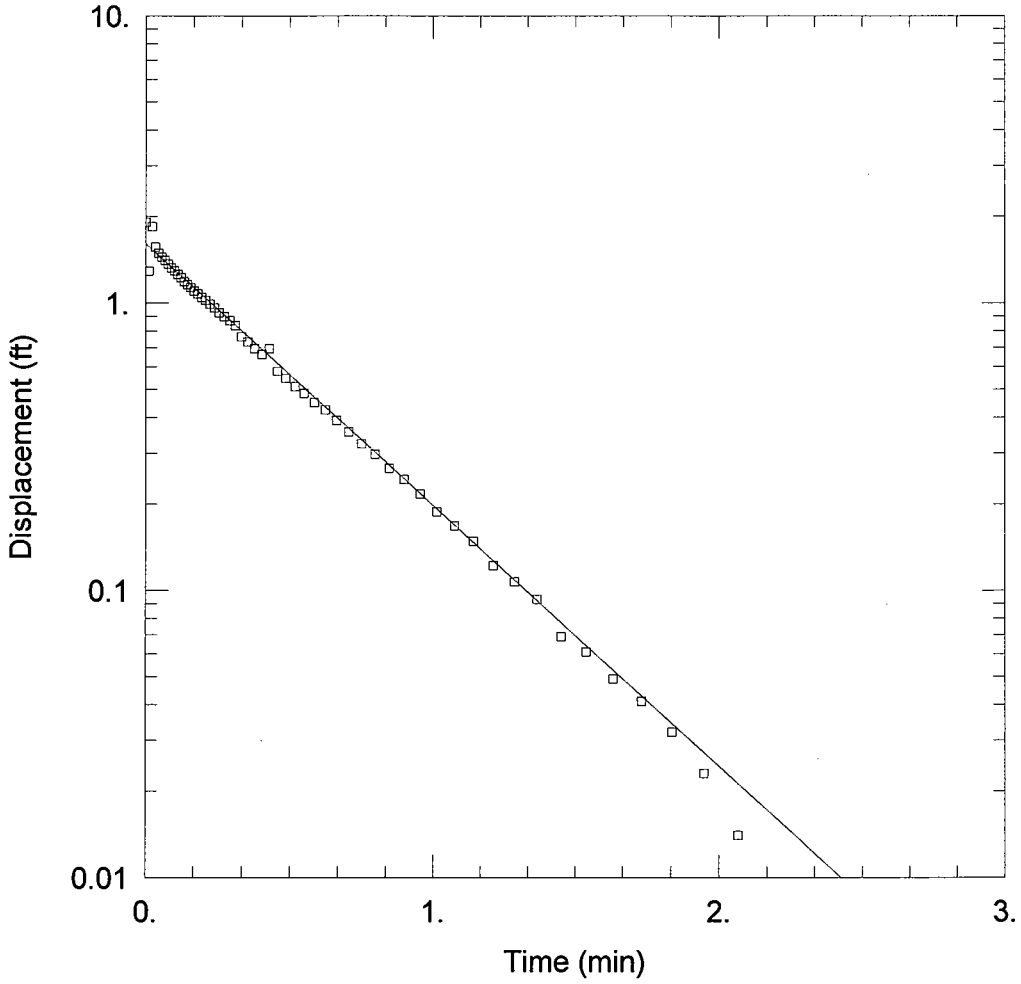
WELL DATA (86-MW25IW)

Initial Displacement: 3.532 ft
Total Well Penetration Depth: 25.9 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 25.9 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 2.257 ft/day y0 = 2.435 ft



RISING HEAD TEST #2

Data Set: J:\...\86-MW25R2-B&R.aqt
Date: 08/01/05 Time: 09:58:41

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 0.001

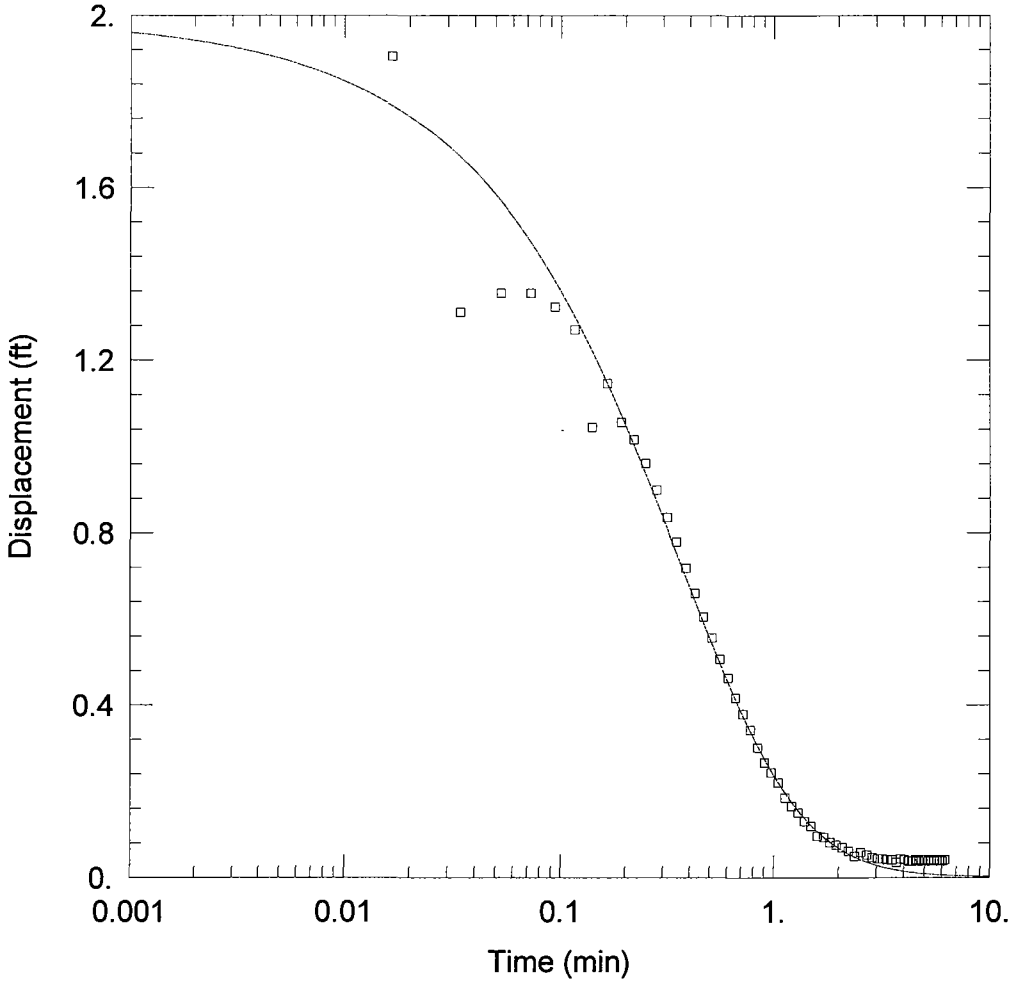
WELL DATA (86-MW25IW)

Initial Displacement: 1.907 ft
Total Well Penetration Depth: 25.9 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 25.9 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 5.877 ft/day y0 = 1.605 ft



FALLING HEAD TEST #1

Data Set: J:\...\86-MW25F1-kgs.aqt
Date: 08/01/05 Time: 09:59:13

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft

WELL DATA (86-MW25IW)

Initial Displacement: 2. ft
Total Well Penetration Depth: 25.9 ft
Casing Radius: 0.0833 ft
Well Skin Radius: 0.427 ft

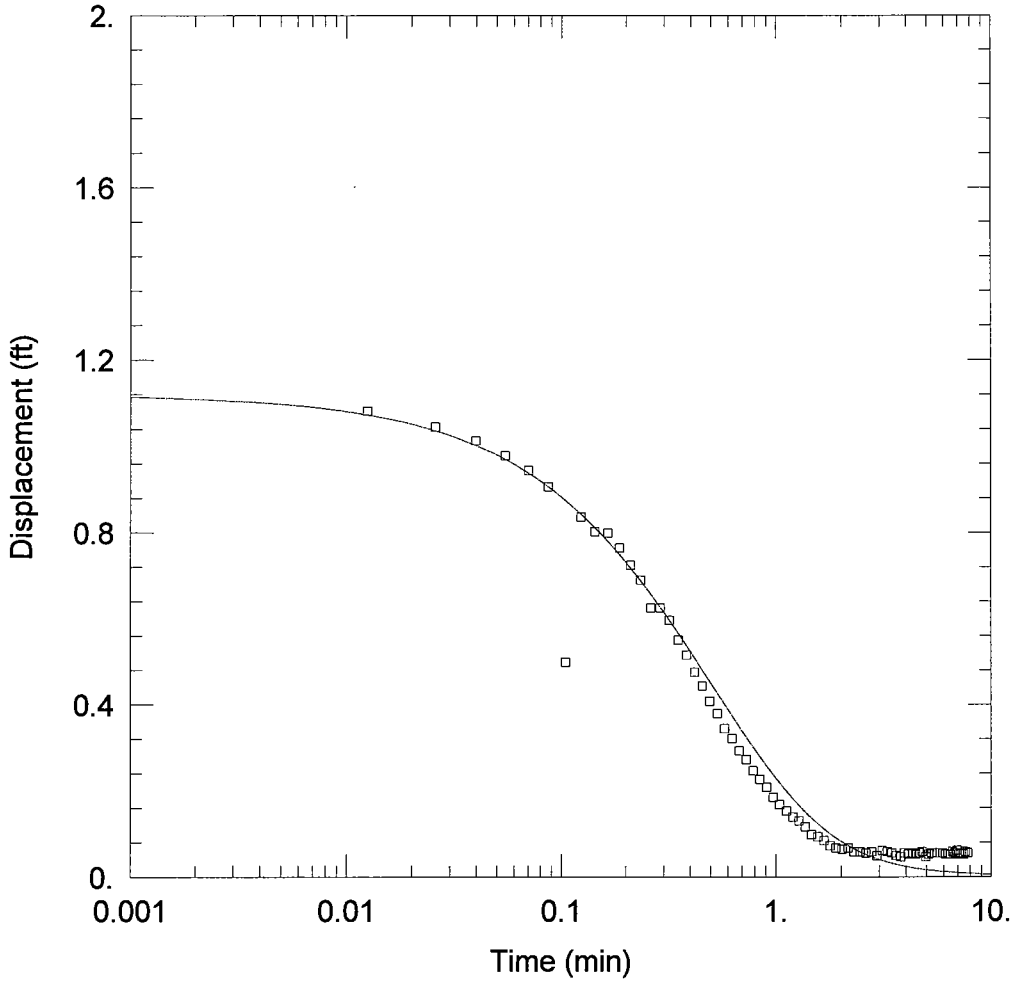
Static Water Column Height: 25.9 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model w/skin

Kr = 2.968 ft/day
Kz/Kr = 1.

Ss = 6.647E-05 ft^{-1}
Kr' = 0.07522 ft/day



FALLING HEAD TEST #2

Data Set: J:\...\86-MW25F2-kgs.aqt
Date: 08/01/05 Time: 09:59:51

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft

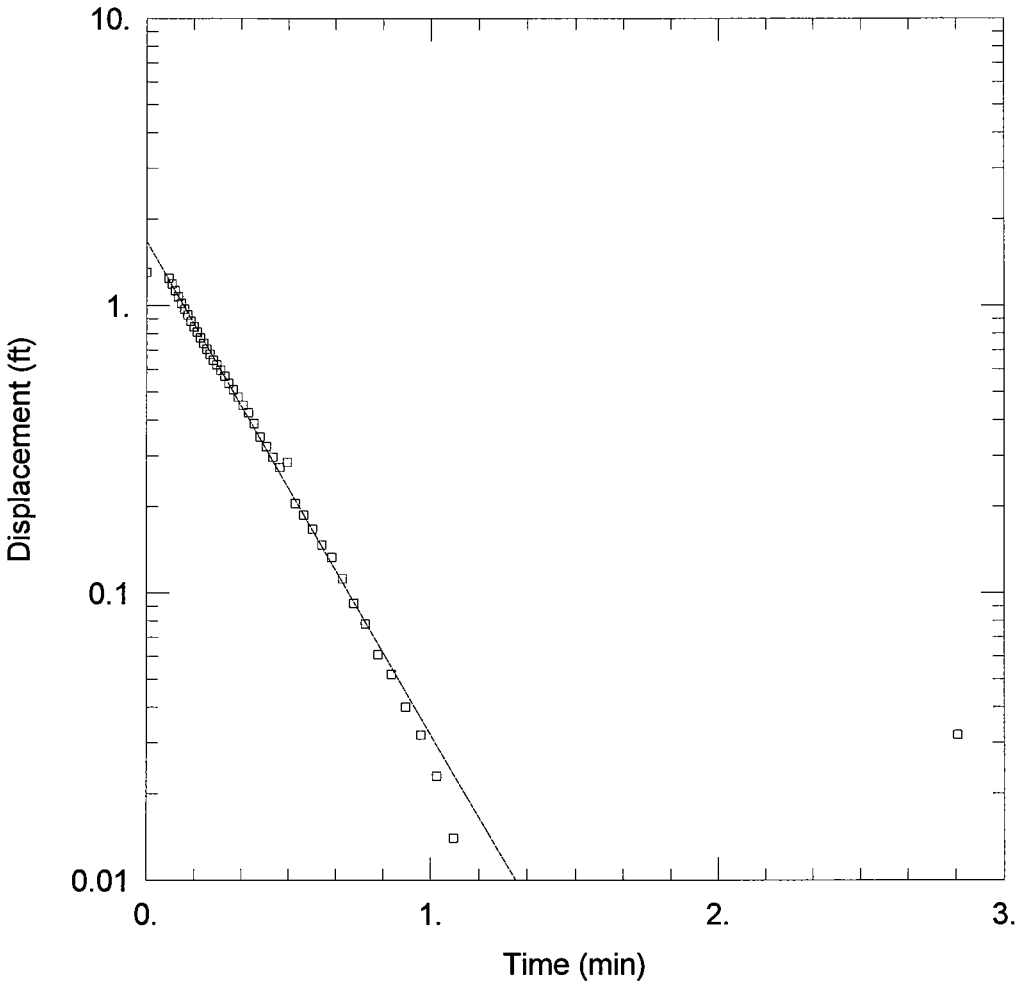
WELL DATA (86-MW25IW)

Initial Displacement: 1.123 ft
Total Well Penetration Depth: 25.9 ft
Casing Radius: 0.0833 ft
Well Skin Radius: 0.427 ft
Static Water Column Height: 25.9 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model w/skin

Kr = 3.758 ft/day
Kz/Kr = 0.001
Ss = 2.613E-06 ft^{-1}
Kr' = 0.0398 ft/day



RISING HEAD TEST #1

Data Set: J:\...\86-MW27R1-B&R.aqt
Date: 08/01/05 Time: 10:00:30

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

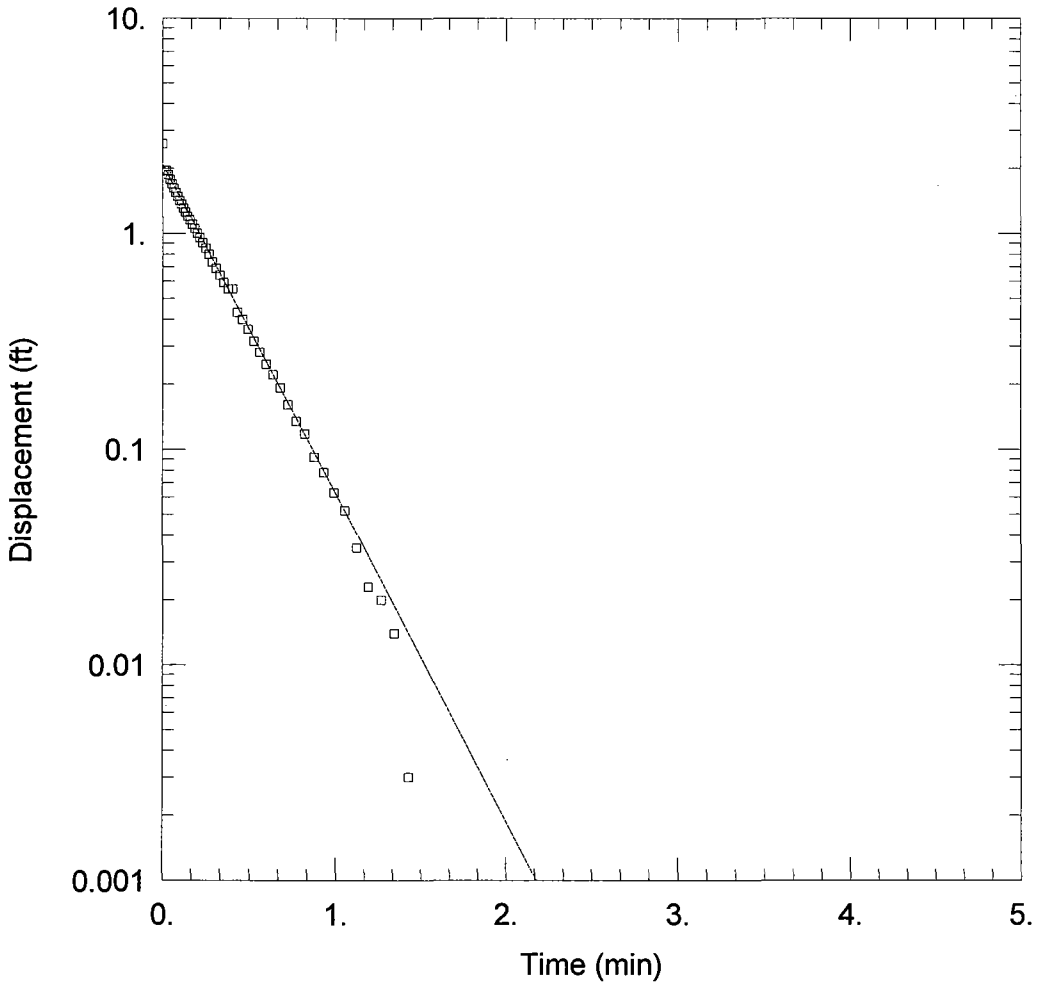
WELL DATA (86-MW27IW)

Initial Displacement: 1.302 ft
Total Well Penetration Depth: 25.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 25.4 ft
Screen Length: 10. ft
Wellbore Radius: 0.417 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 4.366 ft/day y0 = 1.669 ft



RISING HEAD TEST #2

Data Set: J:\...\86-MW27R2-B&R.aqt
Date: 08/01/05 Time: 10:00:38

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

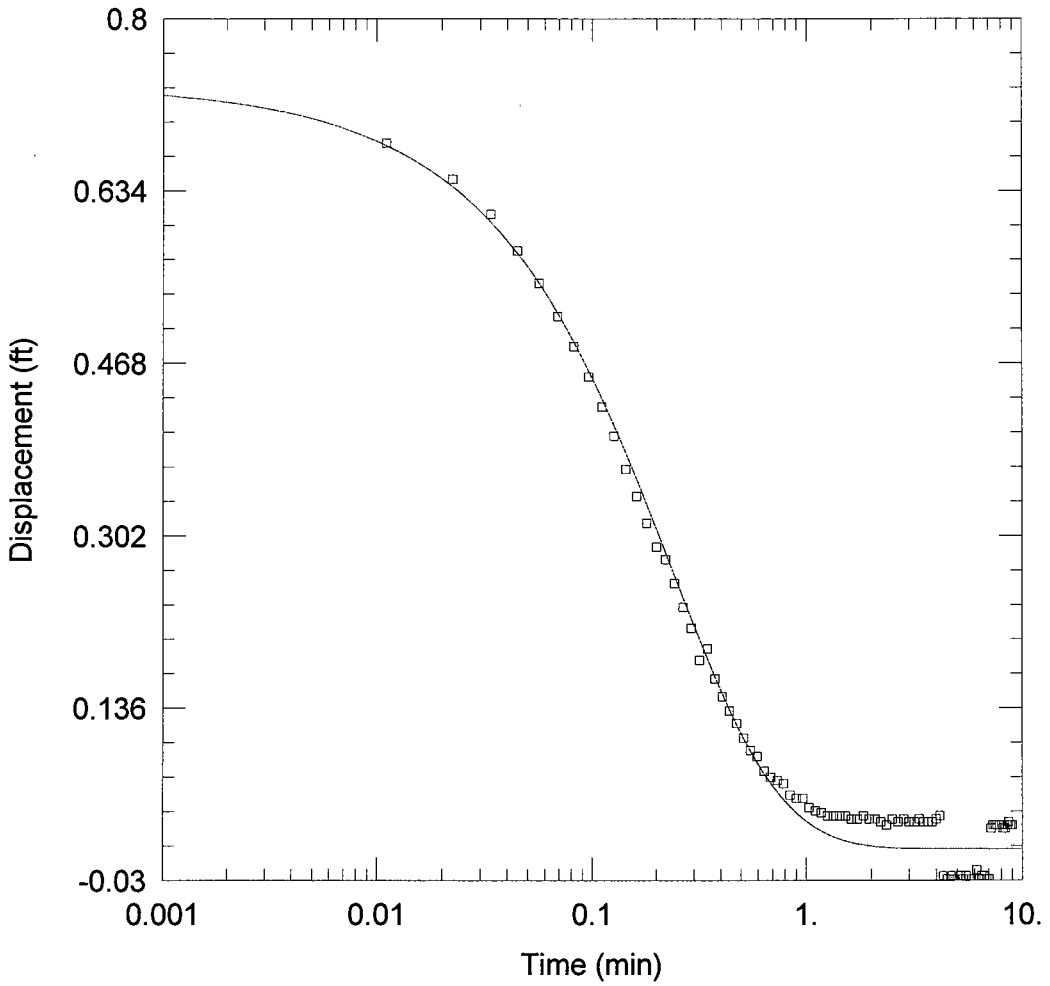
WELL DATA (86-MW27IW)

Initial Displacement: 2.601 ft
Total Well Penetration Depth: 25.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 25.4 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 3.838 ft/day y0 = 2.098 ft



FALLING HEAD TEST #1

Data Set: J:\...\86-MW27F1-kgs.aqt
Date: 08/01/05 Time: 10:00:10

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft

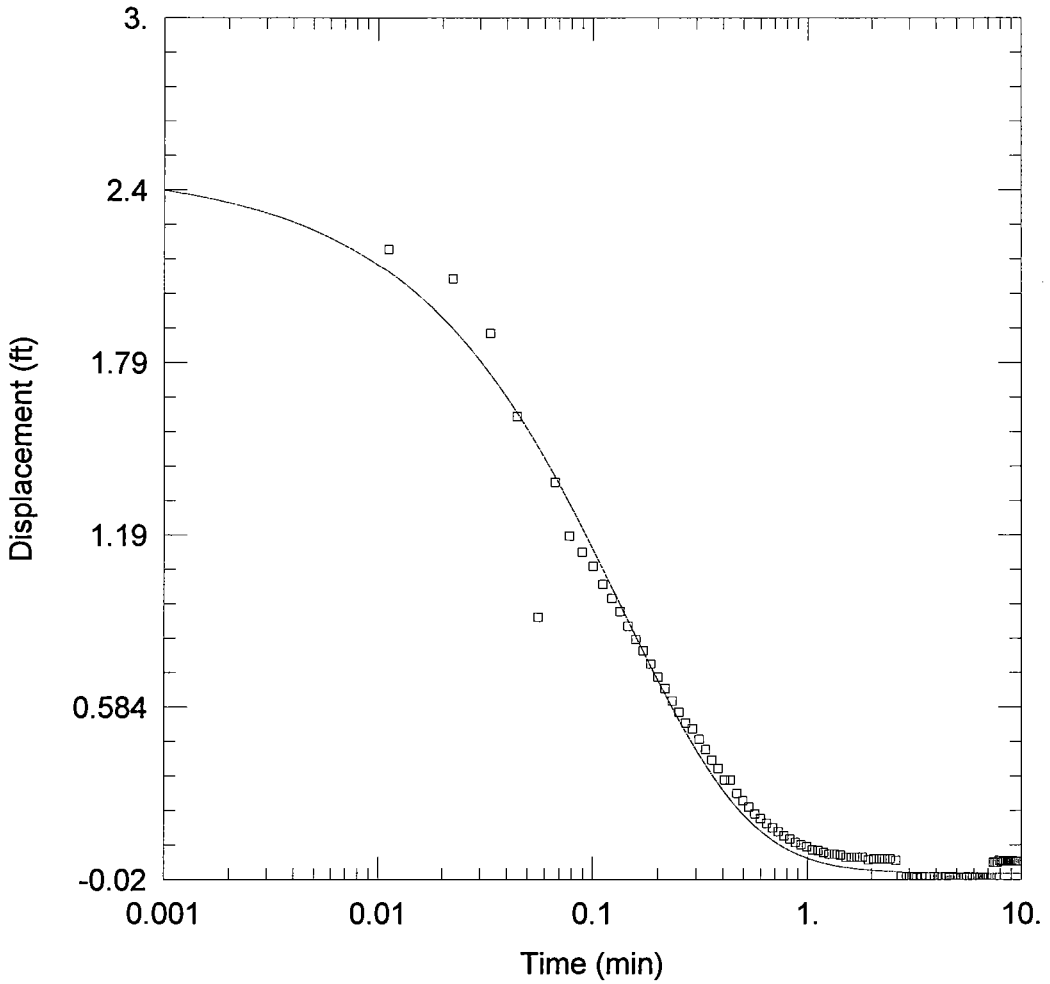
WELL DATA (86-MW27IW)

Initial Displacement: 0.738 ft
Total Well Penetration Depth: 25.4 ft
Casing Radius: 0.0833 ft
Well Skin Radius: 0.427 ft
Static Water Column Height: 25.4 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model w/skin

Kr = 5.338 ft/day
Kz/Kr = 1.
Ss = 1.644E-05 ft^{-1}
Kr' = 0.07191 ft/day



FALLING HEAD TEST #2

Data Set: J:\...\86-MW27F2-kgs.aqt
Date: 08/01/05 Time: 10:00:22

PROJECT INFORMATION

Company: Baker Environmental
Client: LANTDIV
Project: CTO-0041
Location: MCB, Camp Lejeune
Test Date: April 4, 2004

AQUIFER DATA

Saturated Thickness: 200. ft

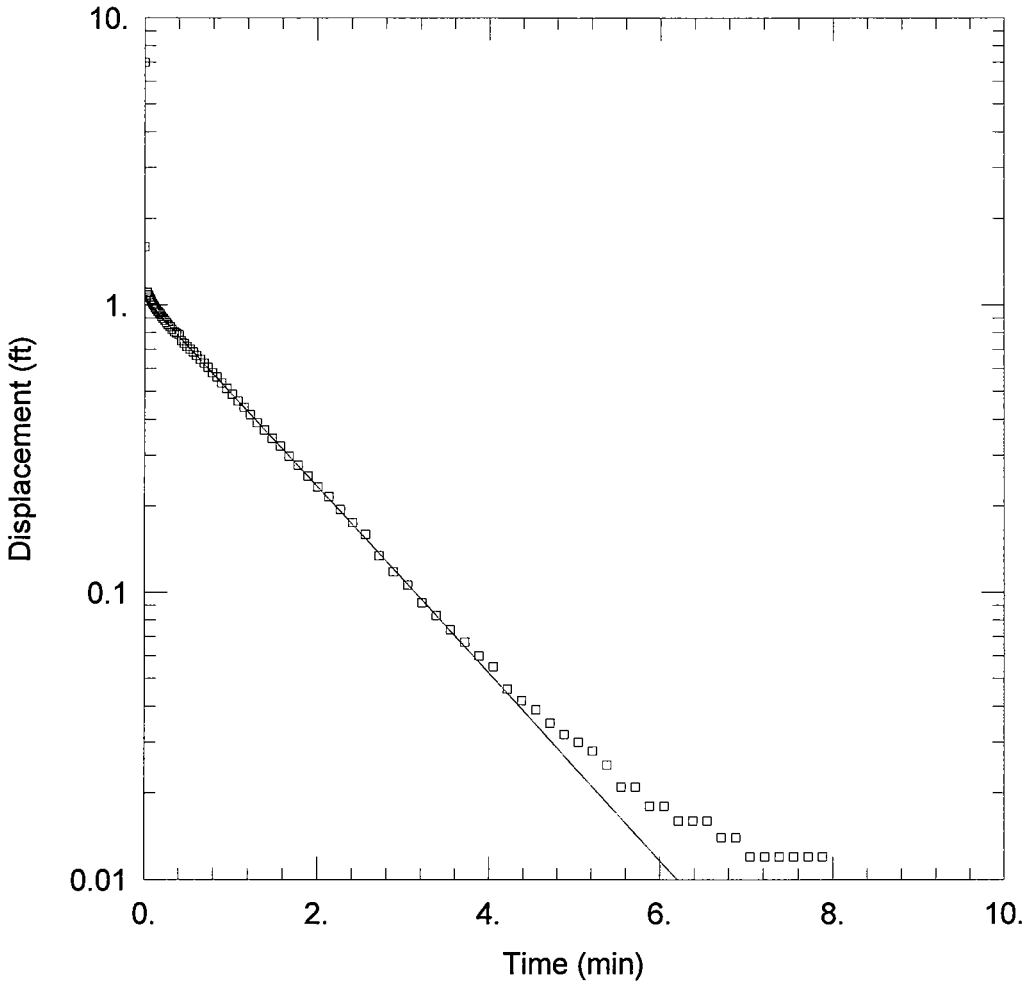
WELL DATA (86-MW27IW)

Initial Displacement: 2.481 ft
Total Well Penetration Depth: 25.4 ft
Casing Radius: 0.0833 ft
Well Skin Radius: 0.427 ft
Static Water Column Height: 25.4 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model w/skin

Kr = 7.419 ft/day
Kz/Kr = 1.
Ss = 7.582E-05 ft^{-1}
Kr' = 0.07751 ft/day



318-MW06-R1

Data Set: J:\...\318MW06-R1.aqt
Date: 08/01/05 Time: 09:52:24

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW06-R1
Test Date: 2/20/05

AQUIFER DATA

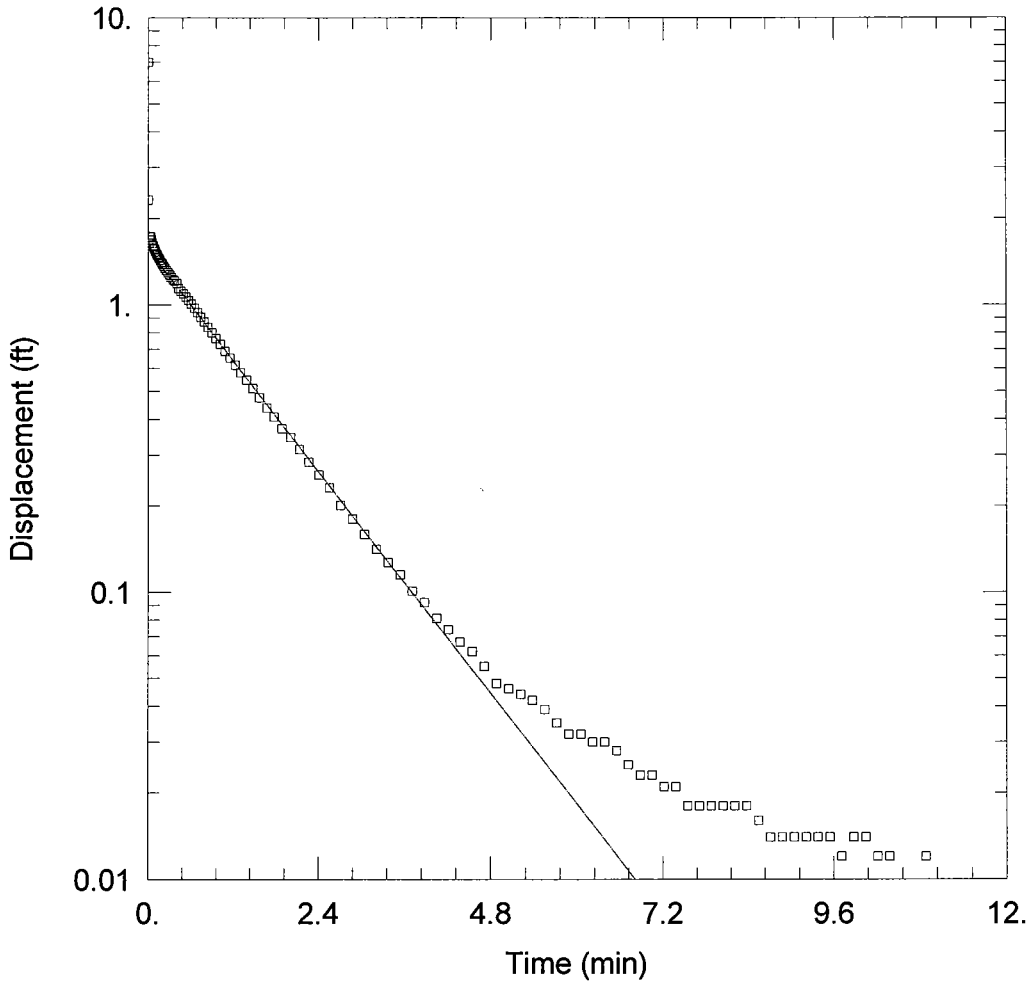
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW06)

Initial Displacement: 6.98 ft
Total Well Penetration Depth: 23. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 23. ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.8073 ft/day
y0 = 1.047 ft



318-MW06-R2

Data Set: J:\...\318MW06-R2.aqt
Date: 08/01/05 Time: 09:52:32

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW06-R1
Test Date: 2/20/05

AQUIFER DATA

Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

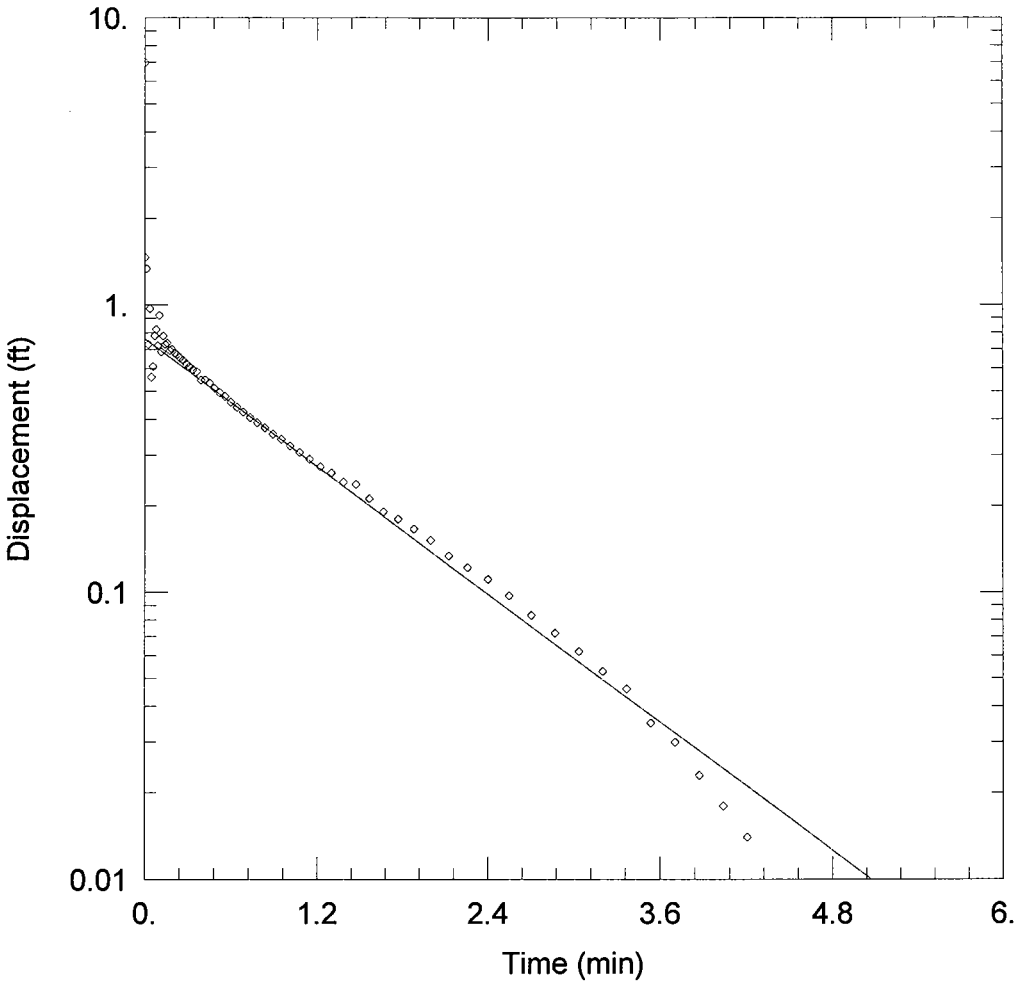
WELL DATA (318-MW06)

Initial Displacement: 6.98 ft
Total Well Penetration Depth: 23. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 23. ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.7985 ft/day y0 = 1.558 ft



SWMU 318 MW06-F1

Data Set: J:\...\318MW06-F1.aqt
Date: 08/01/05 Time: 09:52:08

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: Camp Lejeune
Test Well: 318-MW06-F1
Test Date: 2/20/05

AQUIFER DATA

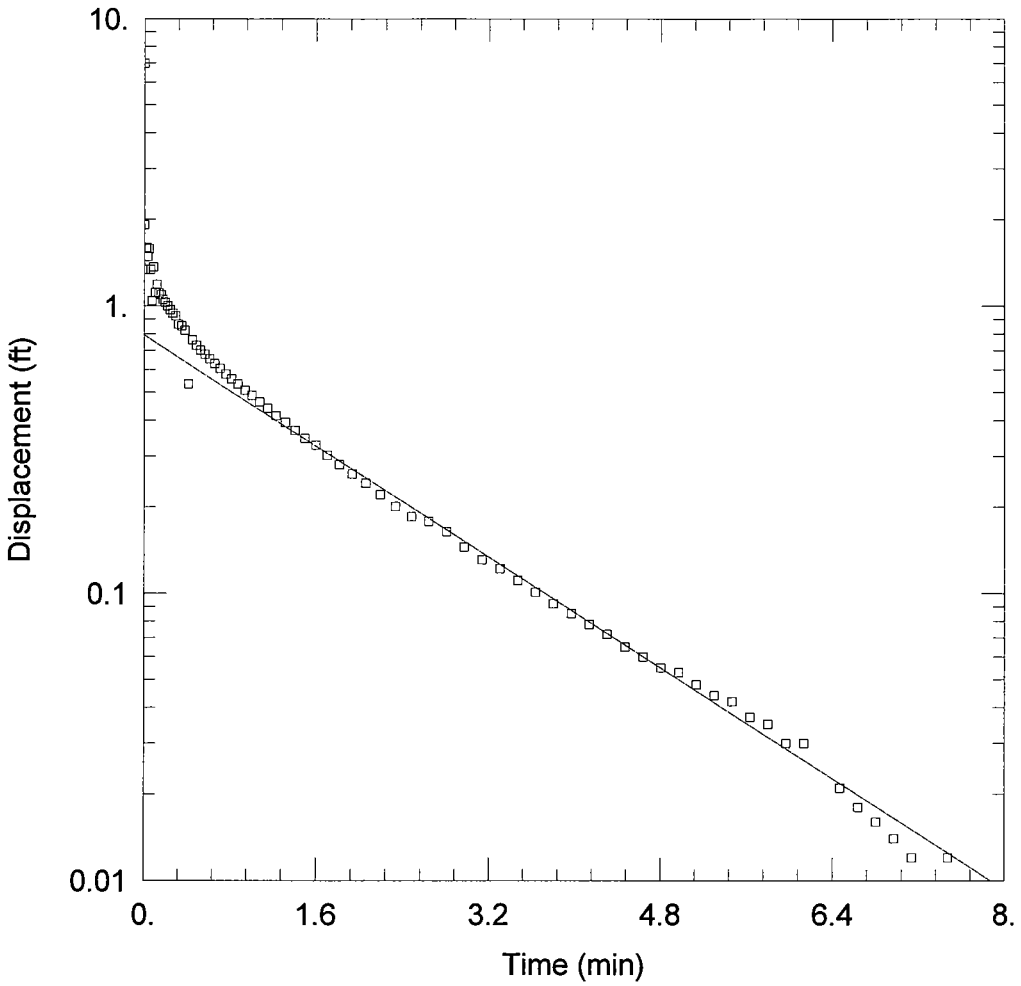
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW06)

Initial Displacement: 6.98 ft Static Water Column Height: 23. ft
Total Well Penetration Depth: 23. ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.9195 ft/day y0 = 0.762 ft



318-MW06-F2

Data Set: J:\...\318MW06-F2.aqt
Date: 08/01/05 Time: 09:52:17

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW06-F2
Test Date: 2/20/05

AQUIFER DATA

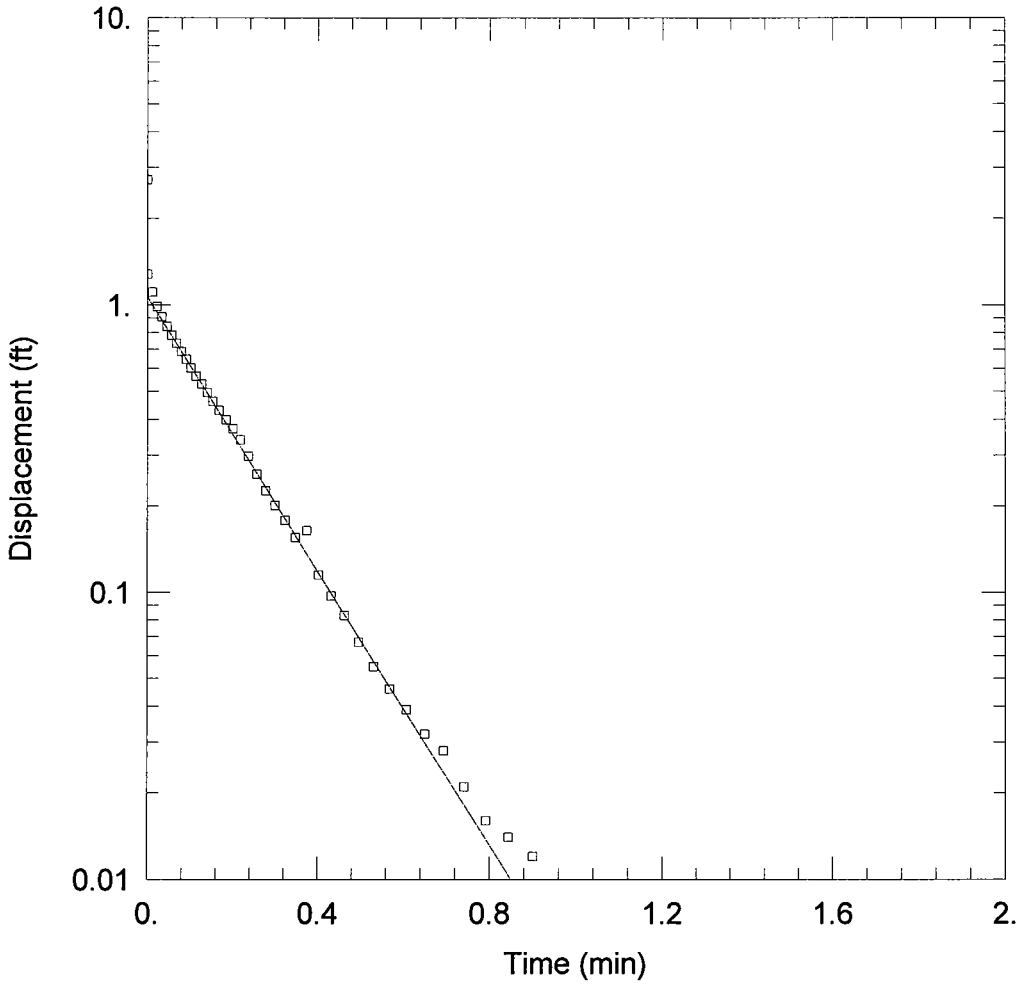
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW06)

Initial Displacement: 6.98 ft Static Water Column Height: 23. ft
Total Well Penetration Depth: 23. ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.5981 ft/day y0 = 0.7907 ft



318-MW04DW-R1

Data Set: J:\...\318MW04DW-R1.aqt
Date: 08/01/05 Time: 09:49:34

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW04DW-R1
Test Date: 2/20/05

AQUIFER DATA

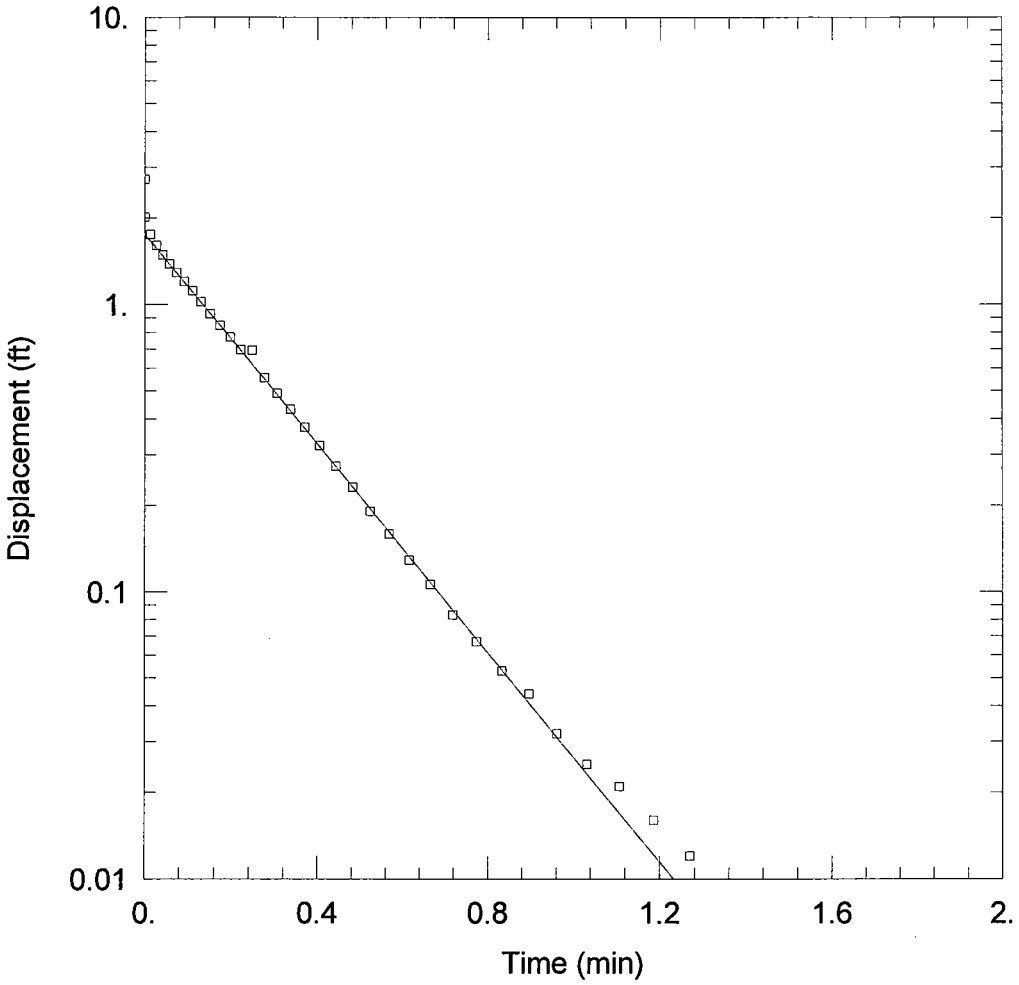
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW04DW)

Initial Displacement: 2.72 ft
Total Well Penetration Depth: 42.3 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 42.3 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 6.439 ft/day
y0 = 1.061 ft



318-MW04DW-R2

Data Set: J:\...\318MW04DW-R2.aqt
Date: 08/01/05 Time: 09:50:21

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW04DW-R2
Test Date: 2/20/05

AQUIFER DATA

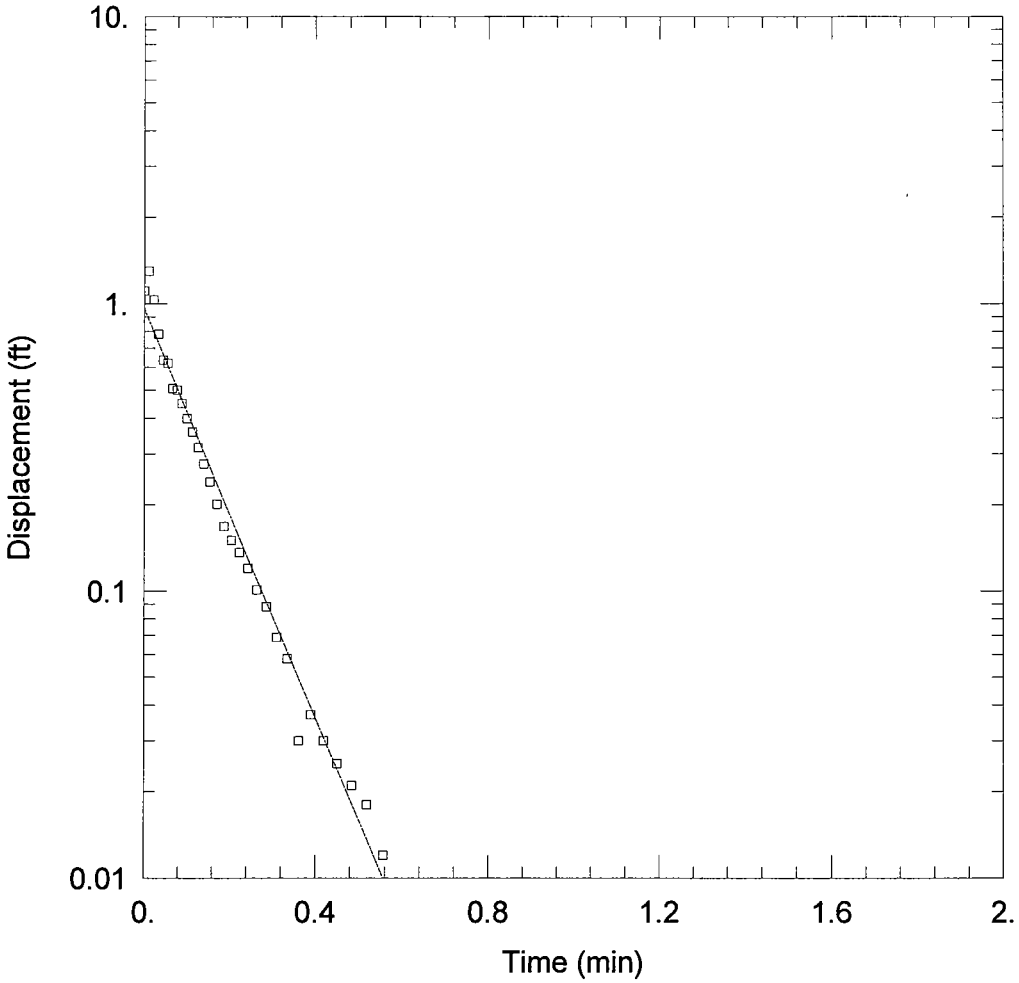
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW04DW)

Initial Displacement: 2.72 ft Static Water Column Height: 42.3 ft
Total Well Penetration Depth: 42.3 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 4.918 ft/day y0 = 1.751 ft



318-MW04DW-F1

Data Set: J:\...\318MW04DW-F1.aqt
Date: 08/01/05 Time: 09:49:53

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW04DW-F1
Test Date: 2/20/05

AQUIFER DATA

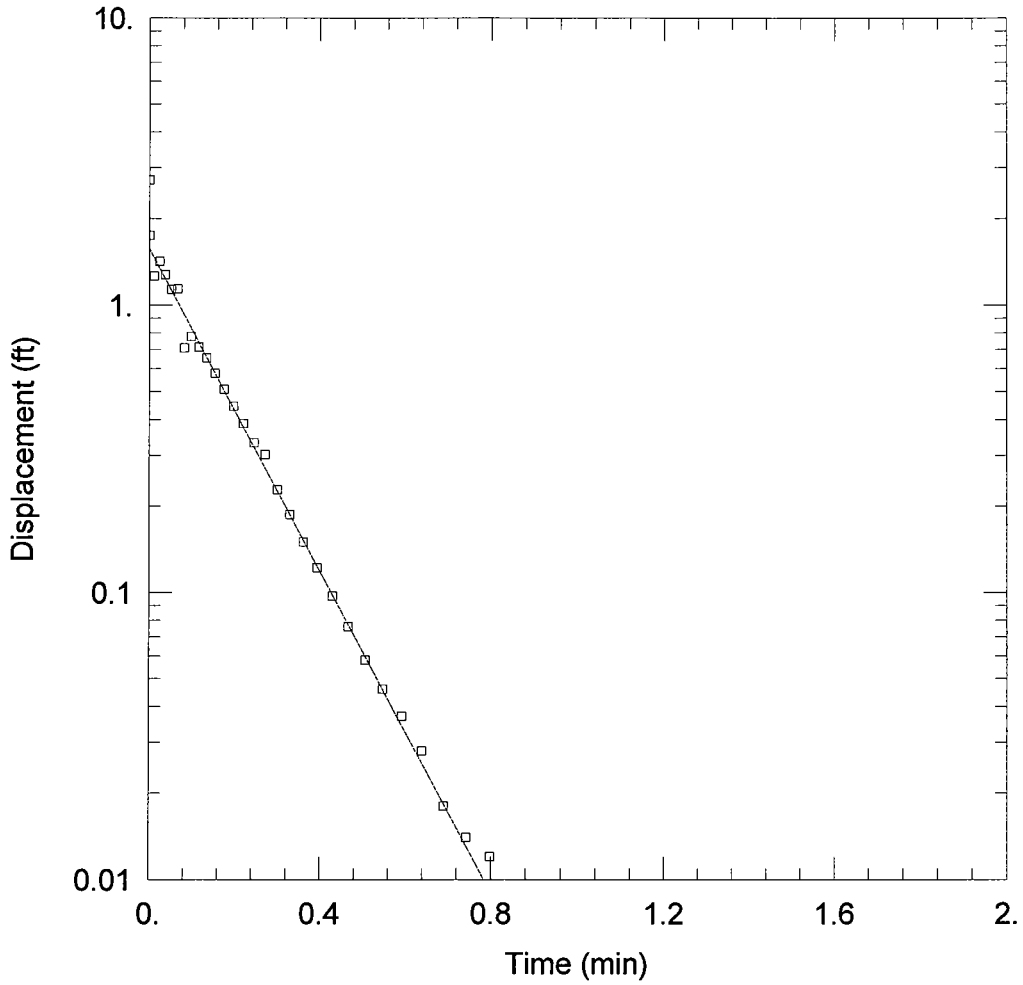
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW04DW)

Initial Displacement: 2.72 ft
Total Well Penetration Depth: 42.3 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 42.3 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 9.614 ft/day
y0 = 0.9566 ft



318-MW04DW-F2

Data Set: J:\...\318MW04DW-F2.aqt
Date: 08/01/05 Time: 09:49:47

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW04DW-F2
Test Date: 2/20/05

AQUIFER DATA

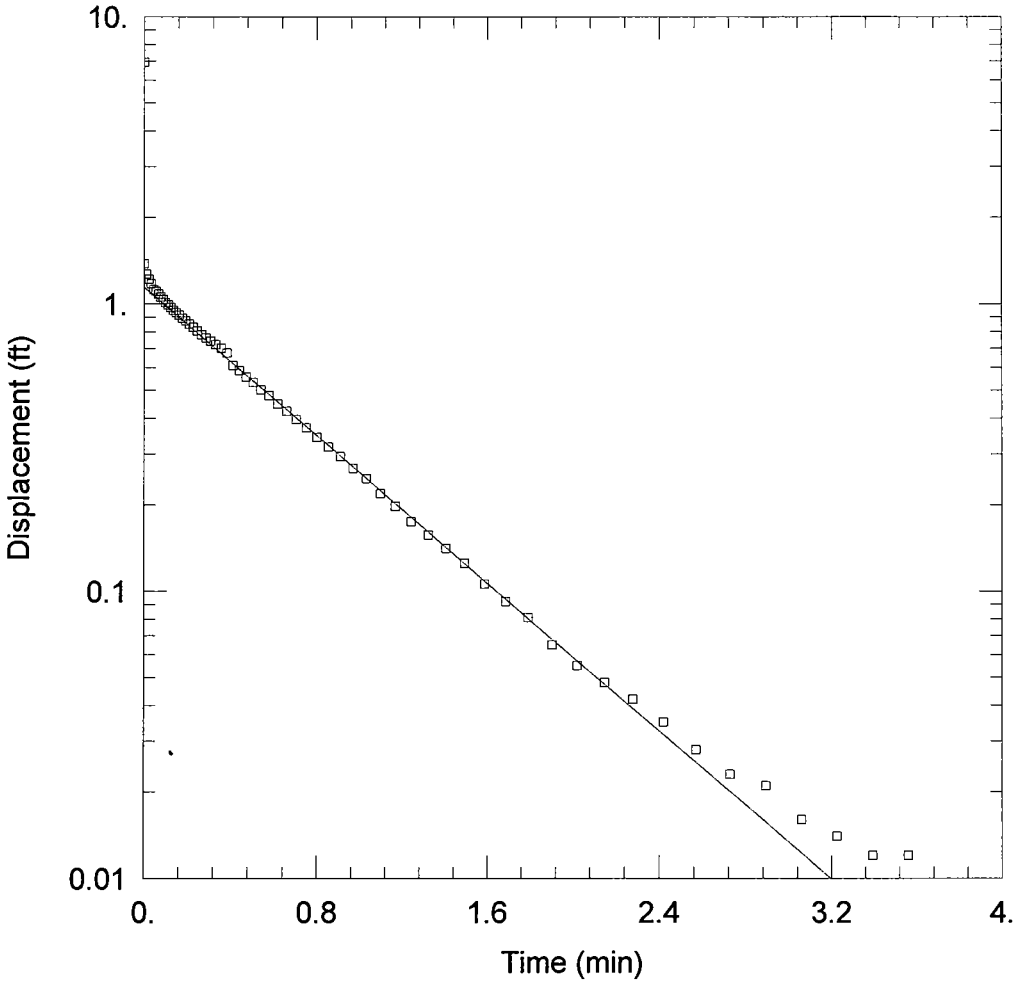
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW04DW)

Initial Displacement: 2.72 ft Static Water Column Height: 42.3 ft
Total Well Penetration Depth: 42.3 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 7.562 ft/day y0 = 1.562 ft



318-MW05DW-R1

Data Set: J:\...\318MW05DW-R1.aqt
Date: 08/01/05 Time: 09:51:08

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW05DW-R1
Test Date: 2/20/05

AQUIFER DATA

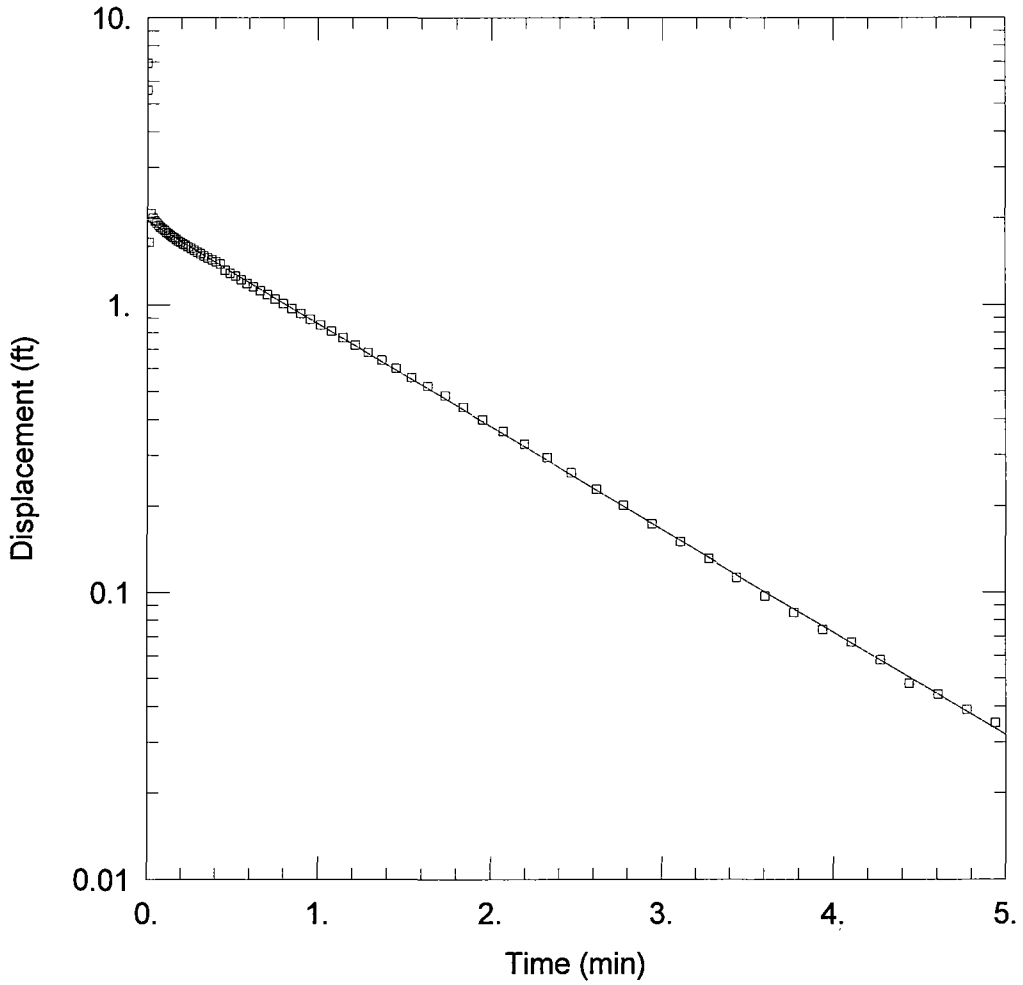
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW05DW)

Initial Displacement: 6.93 ft Static Water Column Height: 38.1 ft
Total Well Penetration Depth: 38.1 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.715 ft/day y0 = 1.142 ft



318-MW05DW-R2

Data Set: J:\...\318MW05DW-R2.aqt
Date: 08/01/05 Time: 09:51:17

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW05DW-R2
Test Date: 2/20/05

AQUIFER DATA

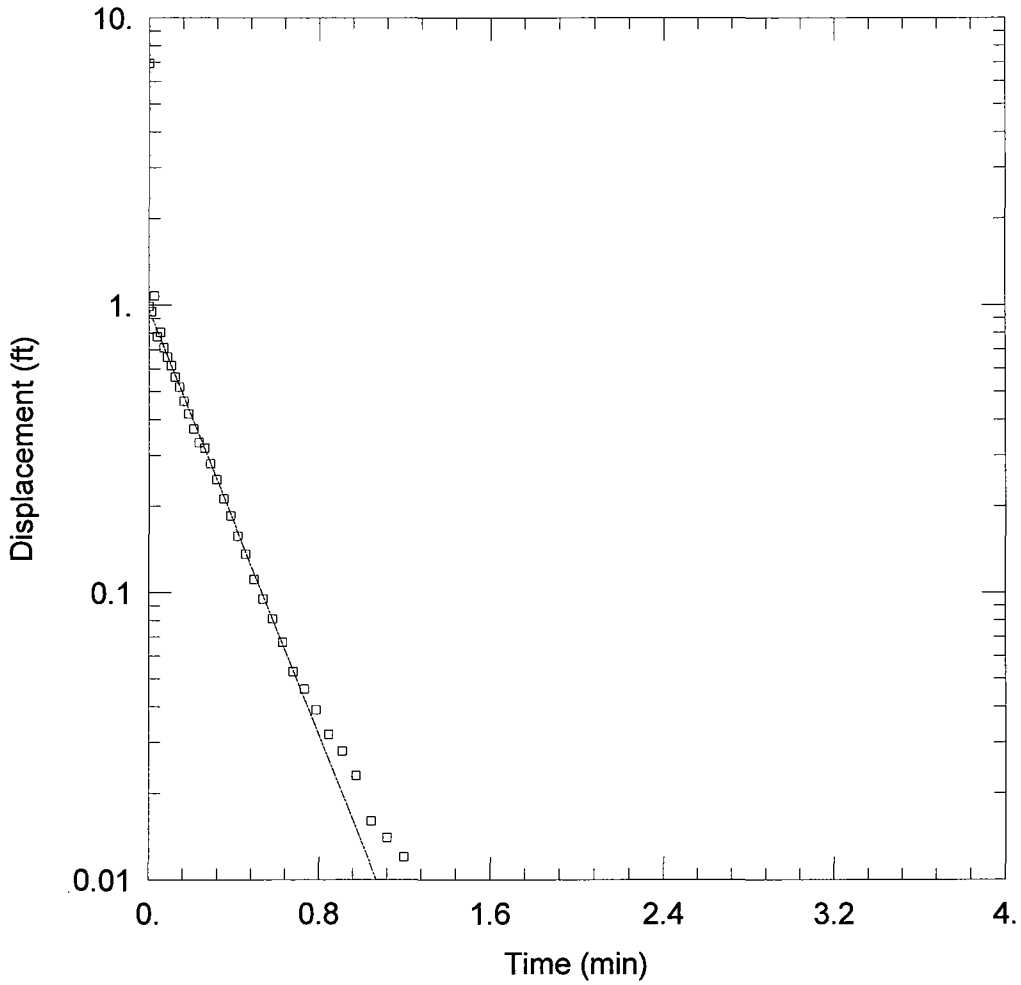
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW05DW)

Initial Displacement: 6.93 ft Static Water Column Height: 38.1 ft
Total Well Penetration Depth: 38.1 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.9523 ft/day y0 = 1.956 ft



318-MW05DW-F1

Data Set: J:\...\318MW05DW-F1.aqt
Date: 08/01/05 Time: 09:50:49

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW05DW-F1
Test Date: 2/20/05

AQUIFER DATA

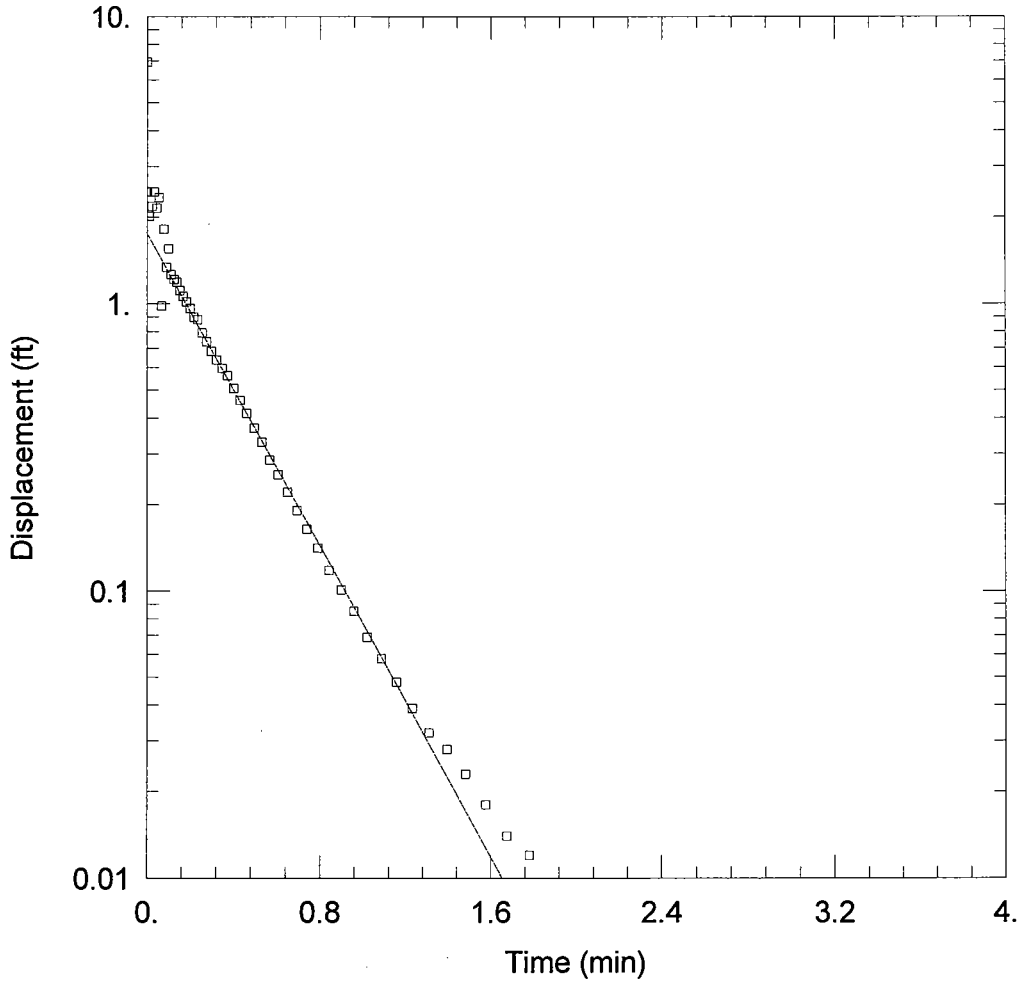
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW05DW)

Initial Displacement: 6.93 ft
Total Well Penetration Depth: 38.1 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 38.1 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 4.934 ft/day
y0 = 0.9604 ft



318-MW05DW-F2

Data Set: J:\...\318MW05DW-F2.aqt
Date: 08/01/05 Time: 09:50:58

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW05DW-F2
Test Date: 2/20/05

AQUIFER DATA

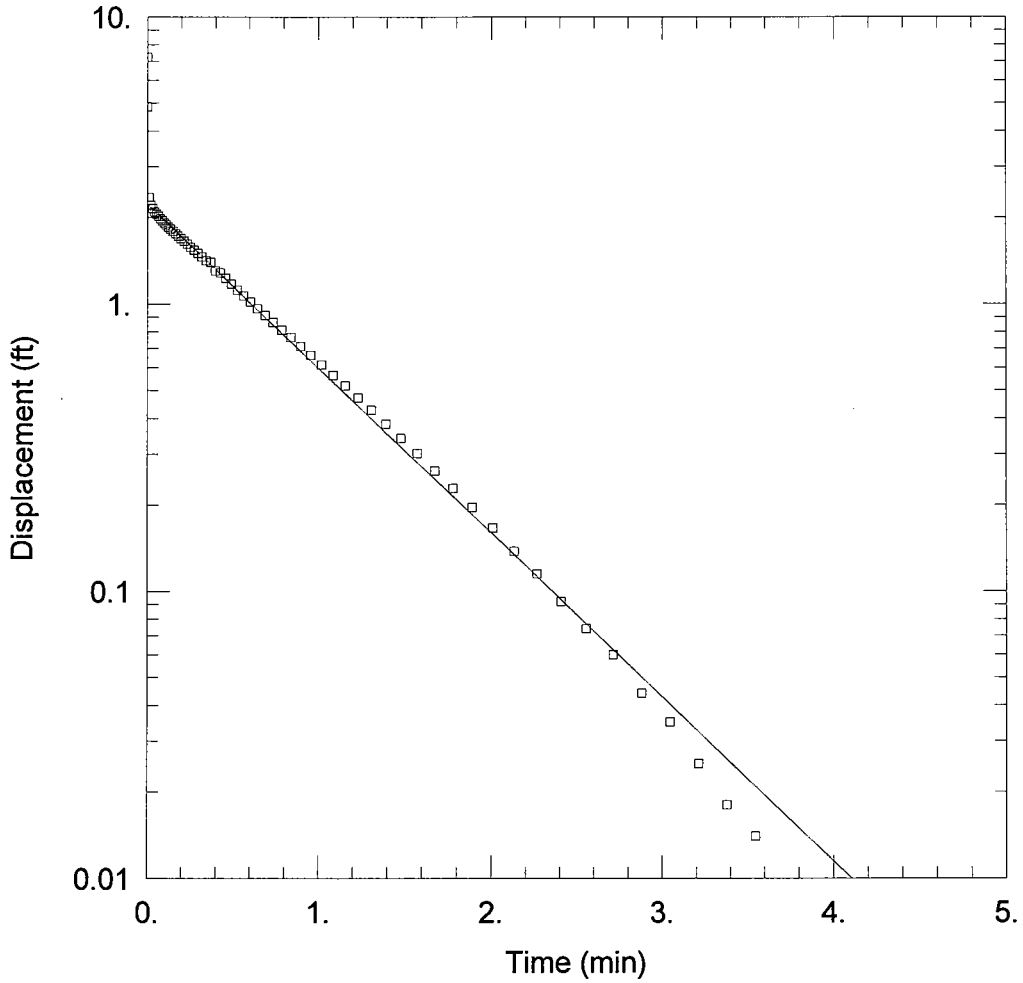
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW05DW)

Initial Displacement: 6.93 ft
Total Well Penetration Depth: 38.1 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 38.1 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 3.612 ft/day
y0 = 1.746 ft



318-MW06DW-R2

Data Set: J:\...\318MW06DW-R2.aqt
Date: 08/01/05 Time: 09:51:41

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW06DW-R2
Test Date: 2/20/05

AQUIFER DATA

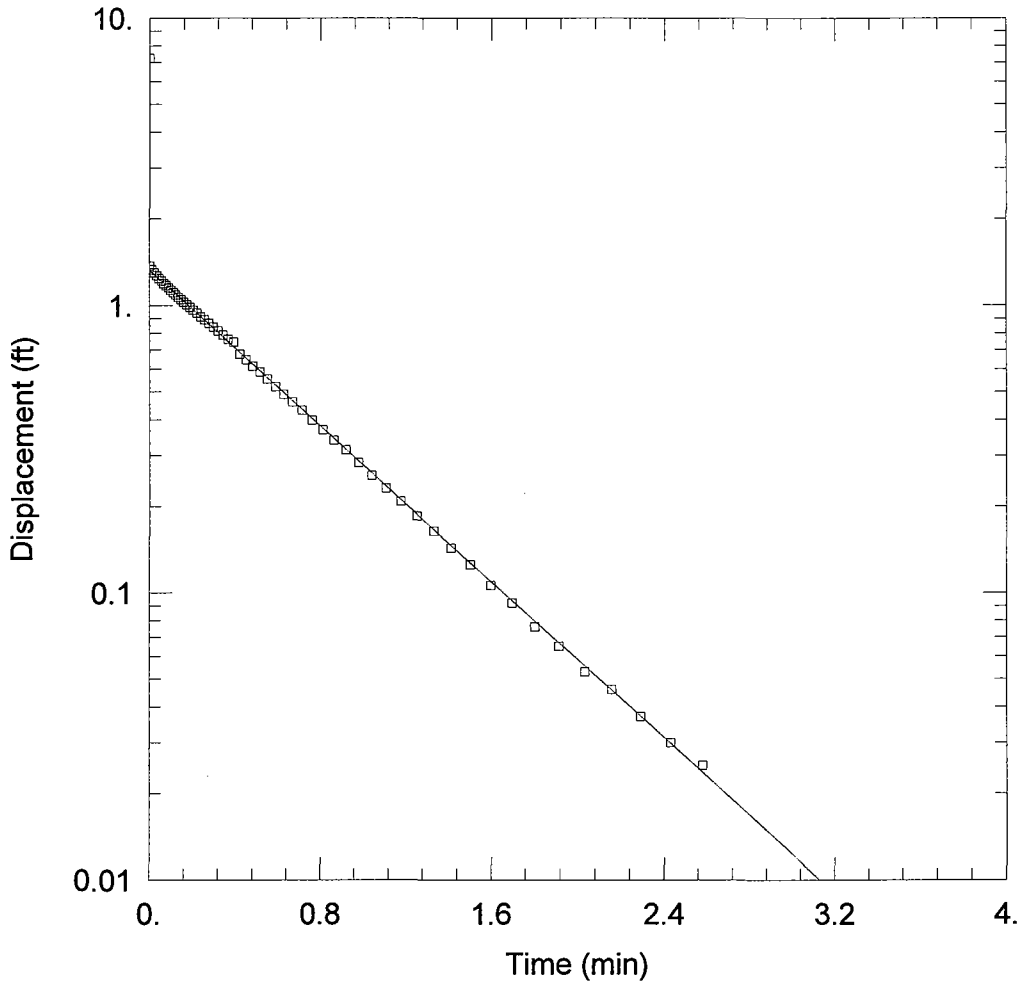
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW06DW)

Initial Displacement: 7.24 ft Static Water Column Height: 37.8 ft
Total Well Penetration Depth: 37.8 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.522 ft/day y0 = 2.231 ft



318-MW06DW-R3

Data Set: J:\...\318MW06DW-R3.aqt
Date: 08/01/05 Time: 09:52:00

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW06DW-R3
Test Date: 2/20/05

AQUIFER DATA

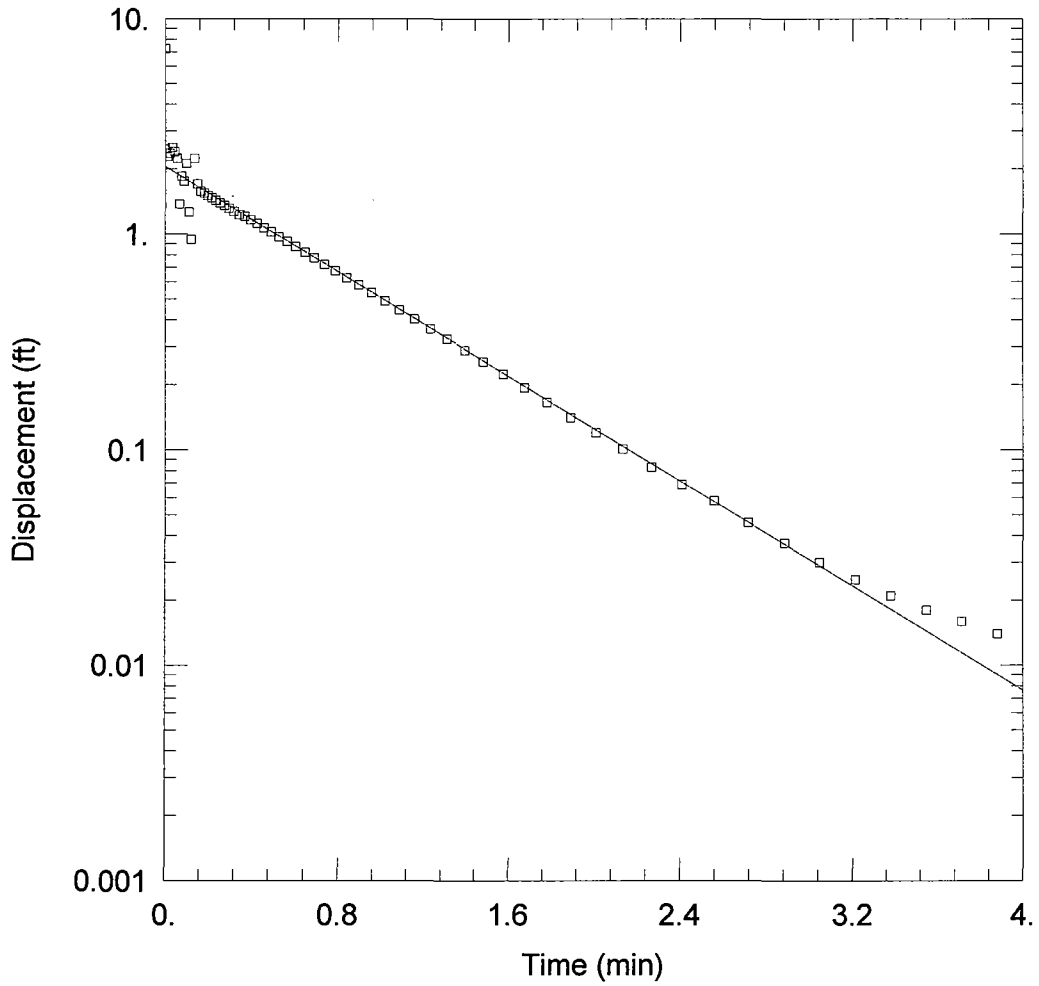
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW06DW)

Initial Displacement: 7.24 ft
Total Well Penetration Depth: 37.8 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 37.8 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.803 ft/day
y0 = 1.323 ft



318-MW06DW-F3

Data Set: J:\...\318MW06DW-F3.aqt
Date: 08/01/05 Time: 09:51:24

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW06DW-F3
Test Date: 2/20/05

AQUIFER DATA

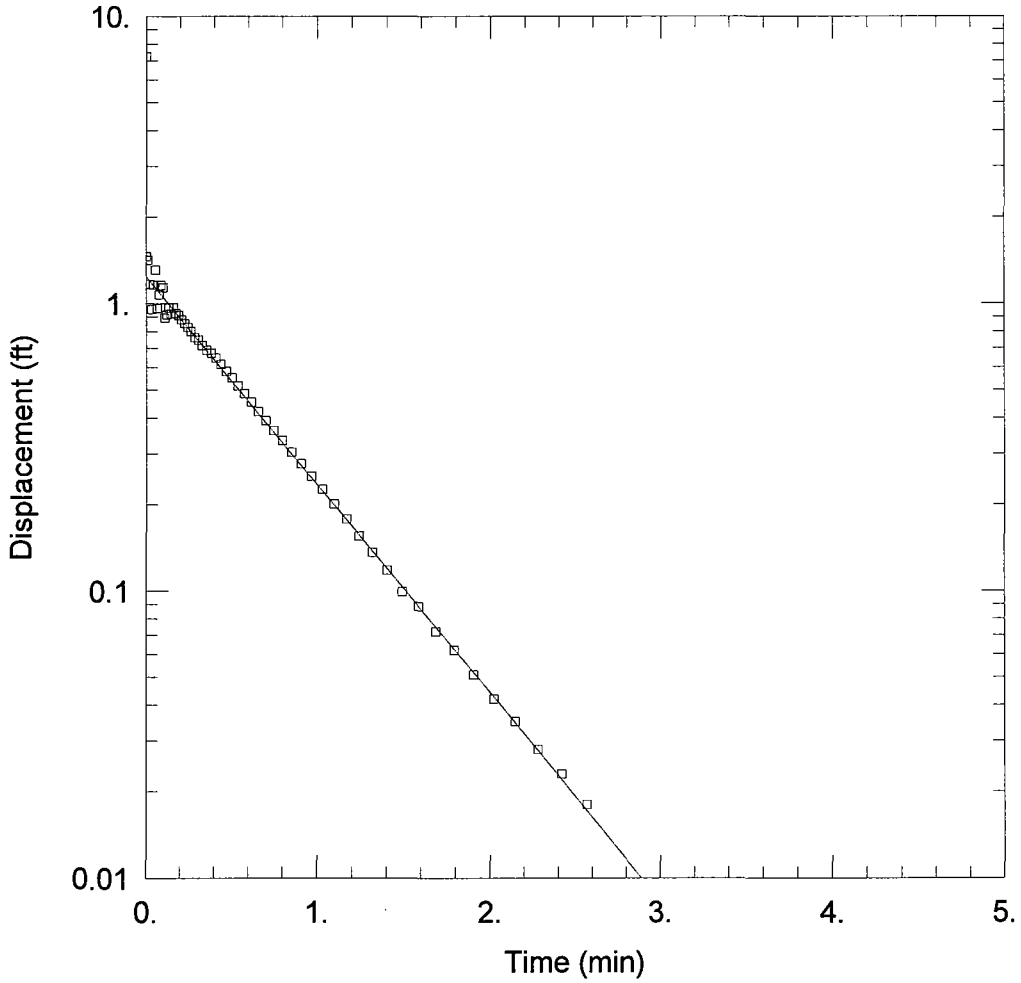
Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW06DW)

Initial Displacement: 7.24 ft
Total Well Penetration Depth: 37.8 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 37.8 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.615 ft/day
y0 = 2.051 ft



318-MW06DW-F4

Data Set: J:\...\318MW06DW-F4.aqt
Date: 08/01/05 Time: 09:51:32

PROJECT INFORMATION

Company: Michael Baker Jr., Inc.
Client: NAVFAC
Project: CTO-0091
Location: CAMP LEJEUNE
Test Well: 318-MW06DW-F4
Test Date: 2/20/05

AQUIFER DATA

Saturated Thickness: 200. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (318-MW06DW)

Initial Displacement: 7.24 ft
Total Well Penetration Depth: 37.8 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 37.8 ft
Screen Length: 10. ft
Wellbore Radius: 0.427 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.926 ft/day
y0 = 1.239 ft

APPENDIX D

Technical Memorandum

Baker
12 Sep 94

SUMMARY OF GROUNDWATER DATA AND AQUIFER CHARACTERISTICS
MARINE CORPS BASE, CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA

FILE: CLS-1A1.WP
CLS-1B1.WK4

SUMMARY

This study examines the utility of exploratory aquifer tests (pump tests) at investigation sites across Marine Corps Base, Camp Lejeune (MCB-CL). The study reviews the available information on the relevant water-bearing layers, considers the general characteristics and applicability of aquifer tests, and concludes:

- That available information is satisfactorily complete to allow appropriate designs of groundwater systems in the main operating areas of MCB-CL;
- That quantified characterization of the water-bearing layers in explored areas of MCB-CL can be extended to other areas having similar geologic terrane;
- That exploratory tests are no longer routinely required or advisable;
- That reconnaissance testing (well-head tests or slug tests) of each newly installed or otherwise uncharacterized data station is highly advisable; and,
- That performance testing of groundwater extraction systems should be the recommended form of evaluating and adjusting withdrawal systems.

BACKGROUND

This study considers the aquifer characteristics (especially, the Coefficient of Transmissivity) and the production capacities (available discharge rates) of the two water-bearing layers relevant to the studies at MCB-CL. These water-bearing layers are the (shallow or surficial) water table and the Upper Castle Hayne Aquifer.

The water table at MCB-CL occupies the water-bearing zone within 25 to 35 feet of the surface; the Castle Hayne, immediately below this. However, the separation of the water table and the Castle Hayne is not always obvious. Usually, this separation is effected only by the low permeability material of the water table transiting to the significantly more permeable material of the Upper Castle Hayne; there is rarely an aquiclude or aquitard of vertically extensive clay separating the water table from the Castle Hayne.

The data available for this summary derive from three main sources:

- Assessment of Hydrologic and Hydrogeologic Data at Camp Lejeune Marine Corps Base, North Carolina; U.S. Geological Survey, Water-Resources Investigation Report 89-4096; 1989
- Wellhead Management Program Engineering Study 91-36; Geophex, Ltd.; 22Jan91
- Various site investigations by Baker Environmental, Inc., and reported to LANTDIV and MCB-CL

DISTRIBUTION OF DATA

The data available from the various sources have been compiled on Tables 1, 2 and 3, with Table 3 summarizing the relevant flow information. The accompanying map indicates the distribution of stations from which data are available.

The tabulated data indicate the main characteristics of each water-bearing layer:

- There is low available production from the water table.
- There is an excessive availability of production from the Castle Hayne compared to the probably acceptable levels of treatment volumes foreseeable in groundwater remediation systems.

The water table had production capacities of less than 5 gallons per minute (gpm) in all cases tested. The specific capacities of the discharge wells were always less than 1 gallon per minute per foot of drawdown (gpm/ft). The transmissivities calculated were generally near or below 1000 gallons per day per foot of drawdown (gpd/ft); only the deeper wells, which intercepted at least part of the Castle Hayne, had transmissivities in a range indicative of an acceptably producing zone. The hydraulic conductivity values were commonly in the range of tenths of feet per day (ft/d). The low production rates, low transmissivities and low hydraulic conductivities indicate that the water table is only marginally, at best, under Darcian conditions. Calculations based on these data would, therefore, be highly unreliable. However, the available information all indicate an expectably low rate of groundwater discharge, which in turn would produce only a narrow radius of effect around an individual production well:

> The standard equation for calculation of the radius of capture around an individual well is $r_c=720Q/\pi Ti$. With a discharge rate (Q) of 3 gpm, a transmissivity (T) of 500 gpd/ft and a representative gradient of 0.005, the radius of capture would be 275 ft. However, this calculation applies only to Darcian conditions in a homogeneous medium; the water table at MCB-CL is marginally Darcian and is highly non-homogeneous. The calculation of radius must, therefore, be in some degree of error, with no more usable data or calculation possible.

The Castle Hayne has production capacities generally ranging above 200 gpm. The estimated transmissivities are at least in the range of several tens of thousands gpd/ft, with specific capacities usually about 5 to 10 gpm/ft. The calculated hydraulic conductivities are usually in the scores of feet per day. The available discharge from the Castle Hayne is, therefore, much greater than that from the water table. The limiting factor in remediation schemes for the Castle Hayne then becomes the amount of water that can be treated by an affordable system, usually less than 500 gpm; this value of 500 gpm would be available from one or two wells in the Castle Hayne. The high values of aquifer parameters, the relatively low total discharge and the low number of production wells would conspire to limit the radius of effect available to a remediation scheme:

> The standard equation for calculation of the radius of capture around an individual well is $r_c=720Q/\pi Ti$. With a Q of 500 gpm, a T of 50000 gpd/ft and a representative gradient of 0.005, the radius of capture would be only 460 ft.

COMPARABILITY OF DATA ACROSS MCB-CL

The stratigraphic sequences of MCB-CL containing the water table and the Upper Castle Hayne have been well characterized. The available information indicates that the lithology and the hydrologic conditions can be correlated stratigraphically across the base (Tables 1 and 2). From these correlations, aquifer performance can be predicted sufficiently for an engineering design whose final criteria for suitability are performance-based.

The upper water-bearing zone is a highly variable layering and intercalation of clay, silt and sand. This variability, however, is found within recognizable limits. These limits correspond to the range of hydrologic characteristics described previously. Similar correlation is available for the lithology and hydrology of the Upper Castle Hayne.

In areas not near stations catalogued in Tables 1, 2 and 3, a reconnaissance comparison of well-head tests (slug tests) and an examination of lithologic descriptions will likely be sufficient to support the engineering evaluation of the site. There is ample demonstration that lithology has a significant influence on the hydrology of a site, and that, for a given geologic terrane, the influence is fairly consistent. The geologic terrane of MCB-CL has been broadly characterized and correlated between lithologic (stratigraphic descriptions) and hydrologic (aquifer tests and well-head tests) sequences. Lithologic descriptions can now provide a good indication of hydrologic conditions at MCB-CL in areas of similar terrane.

GENERAL APPLICABILITY OF AQUIFER TESTS

Aquifer (pump) tests are an extremely dangerous activity at contamination sites. While the information available from aquifer tests is required for engineering design of withdrawal systems, aquifer tests should not be a reconnaissance or an initial step in the investigation. Full consideration must be made of the redistribution of contaminants expectable from the test, of the change in structural support of disposal features by relaxation or increase of hydrostatic loading, and so forth.

Consideration must also be made of alternative sources of acceptable data on the aquifer. In the case of MCB-CL, alternatives to exploratory aquifer tests are available from the tabulation and correlation of aquifer characteristics, production performance and geologic terrane presently available.

From the available information and in light of the relative consistency of the geologic terrane of MCB-CL, exploratory tests at MCB-CL are not generally required. Therefore, exploratory tests are not advisable and should not form part of the initial investigation of a site. While they may be useful in certain circumstances after the initial investigation of a site, they should not, in the general case, be part of the investigation. Sufficiently satisfactory information is presently available to allow the initial engineering design of a groundwater response.

While exploratory aquifer tests are not advisable, performance tests of a newly installed system are highly recommended. These tests, to some extent, are a normal part of the initial operation of a system. Only minor additional monitoring and modification of the system during operation would provide data directly relevant to the long-term operation of that system.

In the Coastal Plain of MCB-CL, the information from an exploratory data station not coincident with the long-term extraction system is not fully transferable. That is, if the test station and the

recovery station are not the same, the aquifer parameters and calculations based on those parameters will differ. This means that data from an exploratory station are no more reliably usable that the data presently available, unless the exploratory station is collocated with the recovery system. However, if the exploratory and recovery stations are identical, and considering that alternative sources of acceptable data on the aquifer are available and that a performance test must be run as part of the initial operation of a recovery system, the exploratory test represents a superfluous duplication of effort.

TABLE 1
CAMP LEJEUNE PUMP TEST DATA

Well Number	Well Depth (ft,BGS)	Well Diameter (in)	Total Aquifer Thickness (ft)	Screened Length (ft)	Screened Interval (ft,BGS)	Water-level Drawdown During Pumping (ft,BGS)	Pumping Rate (Recovery wells) GPM	Duration of Pumping (min)	Specific Capacity (pumping rate/ drawdown)	T (square ft/ day)	K (ft/day)	S	Soils (ft,BGS)
013RW-01*	23	2	15	20	3-23	8.773	1	480	0.11	7.17	0.48	NA	0-10 silt/clay, 10-23 sand.
013MW-18	13	2	15	10	3-13	0.297	NA	480	NA	105.98	7.06	1.40E-02	0-7 silt/clay, 7-13 sand.
013MW-21	14	2	15	10	4-14	0.31	NA	480	NA	82.27	5.48	2.77E-02	0-4 silt/sand, 0-14 clay/silt
108RW-01*	15	2	9	9.1	2.45-11.55	6.38	0.5	485	0.08	5.30	0.59	NA	very fine sand
108MW-04		2	9				NA	485	NA	118.63	13.18	1.33E-02	
108MW-15	12.5	2	9	9.03	2.79-11.82		NA	485	NA	56.78	6.31	7.33E-03	0-8 sand/silt, 8-10 silt/clay
109MW-15		2	15			0.939	NA	460	NA	76.26	5.08	1.11E-02	
109MW-17	14.5	2	15	10	4.5-14.5	0.545	NA	460	NA	163.10	10.87	7.30E-03	0-15 fine sand
109RW-01*	15	2	15	9.5	2-11.5	6.265	3	460	0.48	7.80	0.52	NA	0-4 sand, 4-8 silt, 8-15 sand
110RW-01* (Drawdown,Theis)	21.8	2	50	19.2	2-21.2	9.53	3	475	0.31	200.02	4.00	NA	0-10.5 sand/silt, 10.5-15 sand/clay, 15-21.5 sand/clay, 21.5- sand
110RW-01* (Drawdown,Cooper)										161.86	3.24	NA	
110RW-01* Recovery(Theis)										106.06	2.12	NA	
110DW-01 (Drawdown,Theis)	30.3	2	50	4.8	24.9-29.7	0.02	3	475	NA	7080.48	142.00	4.52E-03	0-4 sand/silt, 4-10.5 clay, 10.5-15.5 sand/silt,15.5-20.5 clay, 20.5-on sand
110DW-01 (Drawdown,Cooper)									NA	7099.20	142	4.51E-03	
110DW-02 (Drawdown,Theis)	30	2	50	4.7	24.7-29.4	0.52	NA	475	NA	5398.56	108.00	1.51E-03	0-3 sand and silt with clay layers, 3-11 sand and silt, 11-30 sand with some limited clay layers
110DW-02 (Drawdown,Cooper)									NA	5400.00	108	1.51E-03	
110DW-03 (Drawdown,Theis)	30	2	50	4.9	24.5-29.4	0.47	NA	475	NA	2952.00	59.00	7.48E-02	0-6 sand and silt , 6-12 sand, 12-23 sand/clay, 23-30 sand
110DW-03 (Drawdown,Cooper)									NA	3225.60	64	5.85E-02	

T = Transmissivity
K = Hydraulic Conductivity
S = Storativity
* = Pumping well
NA - Not applicable

WHERE ON BASE ARE THESE WELLS LOCATED? (HADNOT, RIFLE RANGE, MCAS, COURTHOUSE BAY?)

TABLE 2

HYDRAULIC CONDUCTIVITY TEST RESULTS (SLUG TEST)

Well Number	Well Depth (ft,BGS)	Well Diameter (in)	Saturated Aquifer Thickness* (ft)	Screened Length (ft)	Screened Interval (ft,BGS)	K Rising (ft/day)	Soils (ft,BGS)
013MW-03	14	2	1	9.8	4-13.8	0.75	0-6 clay, 6-14 silt
013MW-04	14	2	8.13	9.8	4-13.8	0.27	0-8 clay, 8-14 silt
013MW-11	16	2	9.14	10	6-16	0.37	0-4 sand/silt, 4-14 clay, 14-16 sand
013MW-21	14	2	9.2	10	4-14	0.46	0-4 silt/sand, 4-14 clay
108MW-08	12.8	2	8.83	9.7	2.7-12.4	0.59	0-8 very fine sand, 8-12 clayey peat, 12-13 sandy clay
108MW-09	12.8	2	7.81	9.7	2.8-12.5	0.53	0-13 silt/sand
108MW-13	10.8	2	NA	9.02	0.69-9.71	0.061	0-2 very fine sand, 8-9.5 sandy clay
108MW-17	13.1	2	NA	9.03	3.39-12.42	0.59	0-8 fine grained sand, 8-9 clayey peat, 9-12.5 sandy clay
109MW-17	14.5	2	9.04	10	4.5-14.5	9.00	0-15 fine sand
109MW-18	14	2	10.19	10	4.5-14.5	5.70	0-3 sand, 3-10 silt, 10-14 sand
110MW-07	11.96	2	9	9.8	1.5-11.3	0.0115	0-2 clay/silt, 2-4 clay/sand, 4-6 sand, 6-10 silt/clay, 10-14 silt /sand
110MW-09	14.2	2	9.47	9.8	3.8-13.6	0.16	0-6 sand/silt, 6-9 clay/silt, 9-12 sand/silt, 12-14 clay
110DW-03	30	6	22.04	4.9	24.5-29.4	1.07	0-3 sand, 3-4 clay, 4-10 sand/silt, 10-12 sand, 12-13 clay,13-22 silt/clay, 22-30 sand
41GW-07	20.5	2	12.03	10	10.5-20.5	1.15	1-5 silty sand, 5-9 clay, 9-10 silty sand, 10-12 fill, 12-16 silty sand with 1 ft clay layer,16-21 sand
41GW-08	15	2	9.48	10	5-15	0.14	0-1 silty sand, 1-6 sand, 6-14 clay with sand and silt, 14-16 silty sand
41GW-09	21	2	11.89	10	11-21	3.67	0-5 clay and sand, 5-21 silty sand
41GW-10	13	2	8.59	10	3-13	0.94	0-2 silty sand, 2-7 sand, 7-9 silty sand and clay, 9-12 lithified sandstone, 12-13 sand. 13-14 lithified sandstone
41GW-12	16	2	12.45	10	6-16	4.57	0-4 silty sand, 4-14 sand, 14-17 lithified sandstone
69GW-09	20.5	2	14.22	10	10.5-20.5	1.7	1-4 Sand/silt, 4-10 clay some sand, 10-21 sand/silt
69GW-10	16	2	10.5	10	6-16	0.17	1-17 sand/silt
69GW-12	12.5	2	11.27	10.5	2-12.5	0.12	0-13.5 sand/silt
69GW-02D	125	2	22.1	10	40-50	0.29	0-125 silty sand **
69GW-12D	58	2	53.83	10	48-58	6.66	0-58 silty sand **
74GW-03A	18	2	13.58	10	8-18	0.59	0-17 silty sand, 17-18.5 sandy clay
74GW-06	16.5	2	8.18	9.74	15.5-26	6.33	1-26 sand/silt
74GW-08	23	2	10.51	10	13-23	3.55	0-1 silty sand, 1-24 sand

* Values taken from AQTESOL results. (Bottom of screened interval- water level)

** Due to depth, soils were very generally described.

K = Hydraulic Conductivity

TABLE 3

BARONE:8SEP94:CL5-1A1:1/5

MCB-CL5 CTO-232 CL5-1B1.wks 8SEP94 MCB-CAMP LEJEUNE

STATION	b ft	Q gpm	Sc gpm/ft	T ft-sq/d	T gpd/ft	K ft/d
013RW-01	15	1.0	0.11	7.2	54	0.5
013MW-1	15			106.0	793	7.1
013MW-2	15			82.3	615	5.5
013MW-03	1					0.8
013MW-04	8					0.3
013MW-11	9					0.4
013MW-21	8					0.5
41GW-07						1.2
41GW-08						0.1
41GW-09						3.7
41GW-10						0.9
41GW-12						4.6
69GW-09						1.7
69GW-10						0.2
69GW-12						0.1
69GW-02DW						0.3
69GW-12DW						6.7
74GW-03A						0.6
74GW-06						6.3
74GW-08						3.6
108RW-01	9	0.5	0.08	5.3	40	0.6
108MW-0	9			118.6	887	13.2
108MW-1	9			56.8	425	6.3
108MW-08	9					0.6
108MW-09	8					0.5
108MW-13	8					0.1
108MW-17	8					0.6
109MW-1	15			76.3	570	5.1
109MW-1	15			163.1	1220	10.9
109RW-01	15	3.0	0.48	7.8	58	0.5
109MW-17	15					9.0
109MW-18	15					5.7
110RW-01	50	3.0	0.31	200.0	1496	4.0
110RW-01	50	3.0	0.31	161.9	1211	3.2
110RW-01	50	3.0		106.1	793	2.1
110DW-01	50			7080	52962	142.0
110DW-01	50			7099	53102	142.0
110DW-02	50			5399	40381	108.0
110DW-02	50			5400	40392	108.0
110DW-03	50			2952	22081	59.0
110DW-03	50			3226	24127	64.0
110MW-07	9					0.1
110MW-09	9					0.2
110DW-03	22					5.8

STATION	b ft	Q gpm	Sc gpm/ft	T ft-sq/d	T gpd/ft	K ft/d
BB-43	275	170	5.0	8900	66572	32.4
BB-44	275	450	10.0	17900	133892	65.1
BB-222	275	329	9.4	10600	79288	38.5
HP-612	285	275	5.4	7900	59092	27.7
HP-614	285	323	4.9	6600	49368	23.2
HP-621	300	200	9.1	24500	183260	81.7
HP-628	320	160	3.4	6400	47872	20.0
HP-629	300	210	5.7	7900	59092	26.3
HP-634	300	163	4.5	4300	32164	14.3
HP-636	300	211	6.8	6900	51612	23.0
HP-643	295	278	5.3	9700	72556	32.9
HP-644	300	246	4.3	8100	60588	27.0
HP-646	305	304	10.6	20200	151096	66.2
HP-647	305	500	9.8	18700	139876	61.3
HP-648	310	250	2.9	5600	41888	18.1
HP-649	310	257	2.6	5000	37400	16.1
HP-651	305	270	3.8	7300	54604	23.9
HP-652	320	218	2.2	4400	32912	13.8
HP-663	325	350	4.8	6400	47872	19.7
HP-699	275	250	5.7	7700	57596	28.0
HP-700	270	250	6.8	11500	86020	42.6
HP-701	275	250	7.2	12400	92752	45.1
HP-705	295	250	9.0	13100	97988	44.4
HP-706	300	250	3.8	4700	35156	15.7
HP-709	310	200	4.4	8500	63580	27.4
HP-710	310	200	5.1	9900	74052	31.9
HP-711	320	200	6.8	10700	80036	33.4
LCH-4006	295	540	10.0	14500	108460	49.2
LCH-4007	295	275	11.8	13700	102476	46.4
M-267	260	170	7.7	10300	77044	39.6
M-628	260	70	3.0	6100	45628	23.5
RR-229	290	429	12.2	19400	145112	66.9
TT-25	280	150	5.0	7200	53856	25.7

STATION	PUMPING LEVEL	Q gpm	Sc gpm/ft
HP-602	44	154	3.5
HP-603	30	129	4.3
HP-606	38	267	7.0
HP-607	46	246	5.3
HP-608	21	208	9.9
HP-609	45	199	4.4
HP-610	14	214	15.3
HP-613	17	157	9.2
HP-616	15	178	11.9
HP-620	9	224	24.9
HP-622	55	330	6.0
HP-623	30	210	7.0
HP-628	45	172	3.8
HP-629	45	216	4.8
HP-632	21	224	10.7
HP-633	18	205	11.4
HP-634	36	219	6.1
HP-635	33	151	4.6
HP-636	35	149	4.3
HP-637	40	130	3.3
HP-638	84	201	2.4
HP-639	52	[--]	0.0
HP-640	28	210	7.5
HP-641	44	351	8.0
HP-642	32	[--]	0.0
HP-643	35	269	7.7
HP-644	52	230	4.4
HP-645	40	192	4.8
HP-646	11	154	14.0
HP-647	26	302	11.6
HP-648	84	263	3.1
HP-649	80	100	1.3
HP-650	75	480	6.4
HP-651	69	242	3.5
HP-652	82	216	2.6
HP-653	29	197	6.8
HP-654	30	175	5.8
HP-655		[--]	ERR
HP-660		150	ERR
HP-661	37	275	7.4
HP-662	53	148	2.8
HP-663	23	100	4.3
HP-698	33	216	6.5
HP-699	21	140	6.7

STATION	PUMPING LEVEL	Q gpm	Sc gpm/ft
HP-700	39	192	4.9
HP-701	36	236	6.6
HP-703	33	293	8.9
HP-704	38	159	4.2
HP-705	25	214	8.6
HP-706	33	214	6.5
HP-707	51	50	1.0
HP-708	42	219	5.2
HP-709	52	239	4.6
HP-710	29	115	4.0
HP-711	56	235	4.2
HP-5186	38	336	8.8
LCH-4007	34	150	4.4
LCH-4009	22	349	15.9
TT-23	36	160	4.4
TT-25	22	130	5.9
TT-26	32	127	4.0
TT-31	28	111	4.0
TT-52	18	236	13.1
TT-54	20	119	6.0
TT-67	29	119	4.1
RR-45	11	192	17.5
RR-47	5	140	28.0
RR-97	14	170	12.1
RR-229	35	[--]	0.0
BB-44	11	125	11.4
BB-47	6	341	56.8
BB-218	17	192	11.3
BB-220	13	119	9.2
BB-221	19	230	12.1
TC-325	8	100	12.5
TC-502	1	180	180.0
TC-504	35	203	5.8
TC-600	32	172	5.4
TC-604	16	137	8.6
TC-700	28	125	4.5
TC-901	37	[--]	0.0
TC-1000	25	110	4.4
TC-1001	16	160	10.0
TC-1251	6	150	25.0
TC-1253	5	128	25.6
TC-1254	3	122	40.7
TC-1255	36	104	2.9
TC-1256	48	108	2.3

STATION	PUMPING LEVEL	Q gpm	Sc gpm/ft
AS-108	8	226	28.3
AS-131	11	310	28.2
AS-190	60	220	3.7
AS-191	16	220	13.8
AS-203	19	220	11.6
AS-4140	6	110	18.3
AS-4150	10	128	12.8
AS-5001	27	185	6.9
AS-5009	53	111	2.1
BA-164	21	214	10.2
BA-190	17	303	17.8

APPENDIX E

Geotechnical Laboratory Report

PW LABORATORIES INC.
P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057
315-437-1420 • (866) 7PW-LABS • FAX 315-437-1752

June 7, 2004

Mr. Robert Stevens
Parratt-Wolff, Inc.
P.O. Box 1029
Hillsborough, North Carolina 27278

Re: L-04013
(04518)
CTO-41-MCB
Camp Leguene

Dear Mr. Stevens:

Enclosed are the results of laboratory testing performed at your request on three Shelby tube soil samples delivered to our laboratory on April 12, 2004 for the above referenced project. Results include:

1.	Natural Moisture Content ASTM D2216 Laboratory I.D. #17574, 17575A, 17575B, 17576	4 each
2.	Sieve Analysis ASTM D422 & D1140 Laboratory I.D. #17574, 17575A, 17575B, 17576	4 each
3.	Hydrometer Analysis ASTM D422 Laboratory I.D. #17574, 17575A, 17575B, 17576	4 each
4.	Atterberg Limits ASTM D4318 Laboratory I.D. #17574, 17575A, 17575B, 17576	4 each
5.	Unified Soil Classification ASTM D2487 Laboratory I.D. #17574, 17575A, 17575B, 17576	4 each
6.	Specific Gravity ASTM D854 Laboratory I.D. #17574, 17575A, 17575B, 17576	4 each
7.	Hydraulic Conductivity - Flexible Wall ASTM D5084 Laboratory I.D. #17574, 17575A, 17575B, 17576	4 each

June 7, 2004
Parratt-Wolff, Inc.

Re: L-04013
(04518)
CTO-41-MCB
Camp Leguene

All requested tests have been completed on the previously received sample(s) for the above project. All sample remains are scheduled to be disposed of on July 8, 2004. Please notify PW Laboratories, Inc. by letter or telephone prior to July 8, 2004 if you would prefer to pick up the sample(s) or that the sample(s) be retained by PW Laboratories, Inc. for an additional period of time.

Additional reports will be forwarded to you as they are completed.

Thank you for this opportunity to work with you.

Very truly yours,

PW LABORATORIES, INC.

Virginia J. Thoma
Manager - Laboratory Services
VJT/bap
encs:
cc: Mr. Scott Moffit
Baker Environmental
100 Airside Drive
Moon Township, Pennsylvania 15108

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JUN 07 2004

L-04013
(04518)
CTO-41-MCB
Camp Leguene

NATURAL MOISTURE CONTENT
ASTM D2216

Lab I.D. #	Sample #.	Depth (feet)	Moisture Content as a Percent of Dry Weight
17574	SWMU-318 MW-02	4.0 – 6.0	21.2
17575A	SWM-0318 MW-38 (Clay)	6.0 – 8.0	23.2
17575B	SWM-0318 MW-38 (Sand)	6.0 – 8.0	4.5
17576	SWMU-261 MW-03	0.5 – 2.5	10.7

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SIEVE ANALYSIS OF SOIL / AGGREGATE

PROJECT TITLE (04518) CTO-41-MCB Camp Leguene

PROJECT # L-04013
TEST METHOD ASTM D422 & D1140

REPORT # 1
REPORT DATE: June 7, 2004

			Sieve Size - Percent Passing Sieve														
Lab I.D. #	Sample #	Depth (Feet)	¾"	½"	3/8"	1/4"	#4	#10	#30	#40	#60	#100	#200				
17574	SWMU - 318 MW-02	4.0 - 6.0	--	--	--	--	--	100	99.6	98.9	94.7	79.1	48.4				
17575A	SWM-0318 MW-38 (Clay)	6.0 - 8.0	--	--	--	--	100	99.8	98.0	96.2	91.1	75.8	37.3				
17575B	SWM-0318 MW-38 (Sand)	6.0 - 8.0	100	99.1	98.2	93.8	91.2	87.2	68.1	64.1	50.7	38.4	27.8				
17576	SWMU-261 MW-03	0.5 - 2.5	--	--	-	--	--	100	99.9	99.8	98.6	56.7	34.5				

Sample mass, as received, meets minimum mass requirements of test method: Yes ____ No X

Prewashed: Yes X No ____

Remarks:

Performed By: KW, CJ, MM

Checked By: V.J. Thoma

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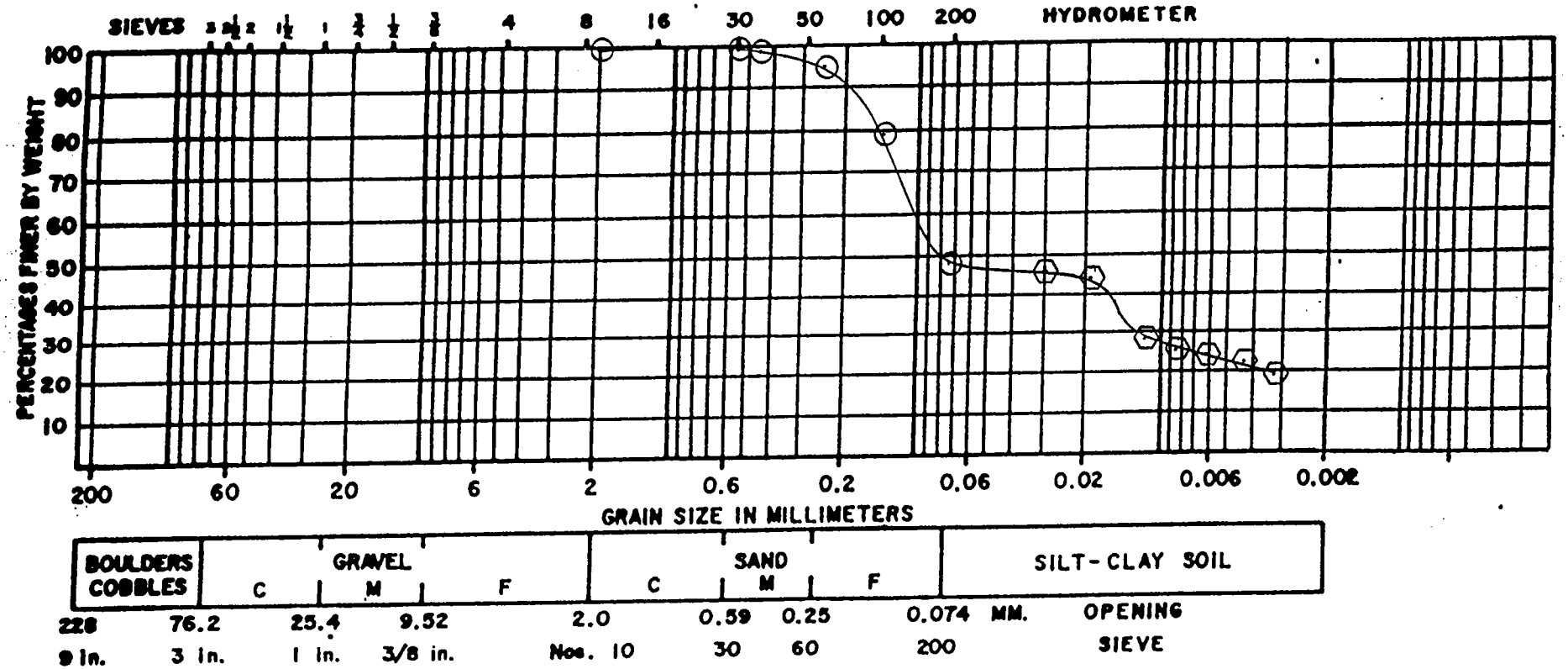
Job No.: L-04013
Report No: 1
Date June 7, 2004

GRAIN SIZE ANALYSIS



L-04013		Lab I.D. #	17574
(04518)		Sample #	SWMU-318 MW- 02
CTO-41-MCB		Depth	4.0' - 6.0'
Camp Leguene			
⊙ Sieve Analysis ASTM D422 & D1140			
⊙ Hydrometer Analysis ASTM D422			

[redacted] labs
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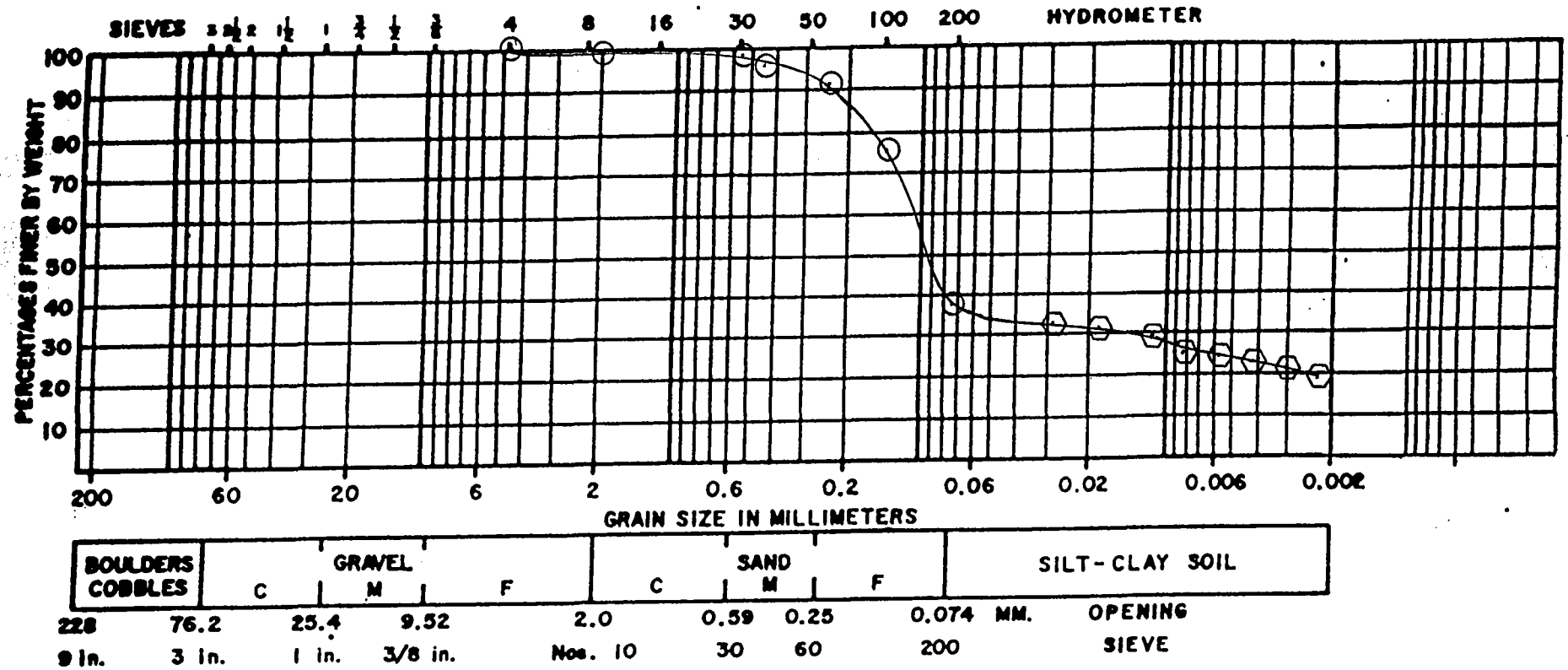
Report No: 2
Date June 7, 2004

GRAIN SIZE ANALYSIS



	L-04013	Lab I.D. #	17575A
	(04518)	Sample #	SWM-0318 MW-38 (Clay)
	CTO-41-MCB	Depth	6.0' - 8.0'
	Camp Leguene		
⊙	Sieve Analysis ASTM D422 & D1140		
⬡	Hydrometer Analysis ASTM D422		

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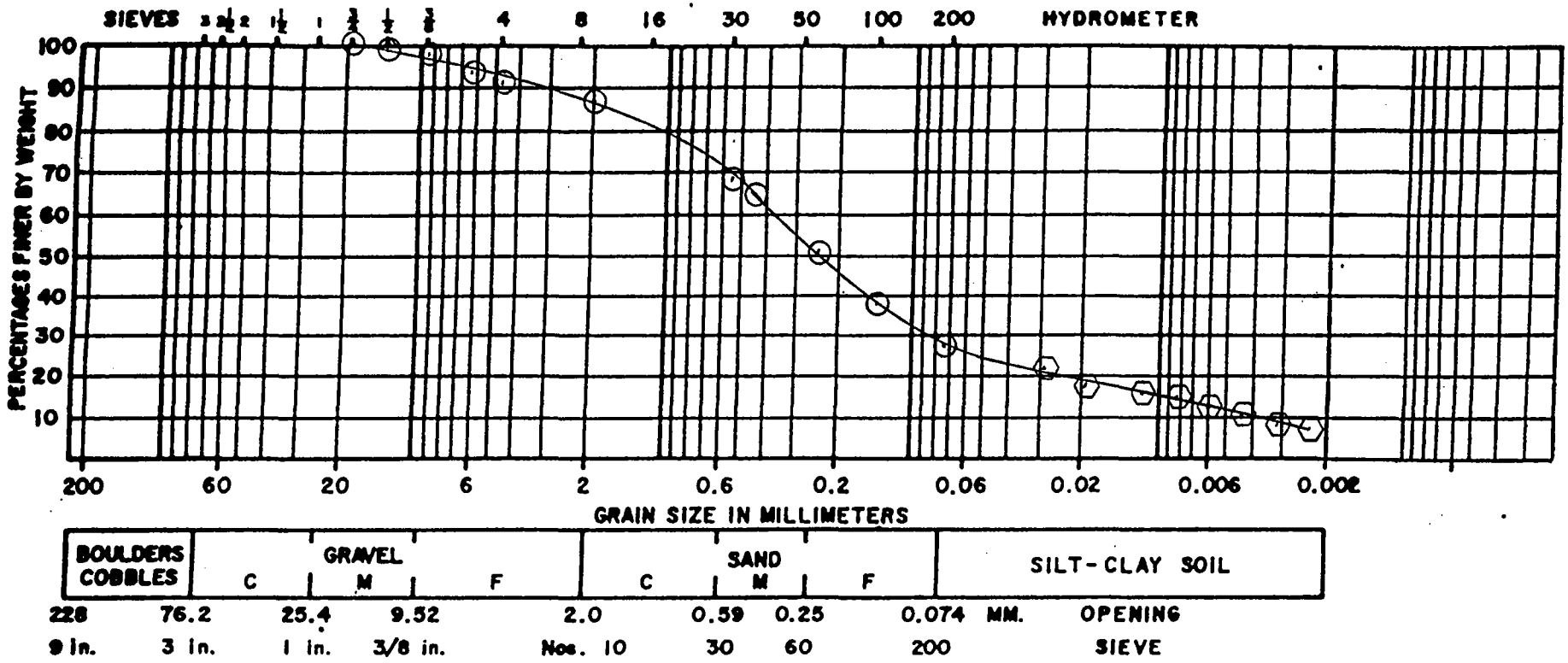
Report No: 3
Date June 7, 2004

GRAIN SIZE ANALYSIS



	L-04013	Lab I.D. #	17575B
	(04518)	Sample #	SWM-0318 MW-38 (Sand)
	CTO-41-MCB	Depth	6.0' - 8.0'
	Camp Leguene		
⊙	Sieve Analysis ASTM D422 & D1140		
⬡	Hydrometer Analysis ASTM D422		

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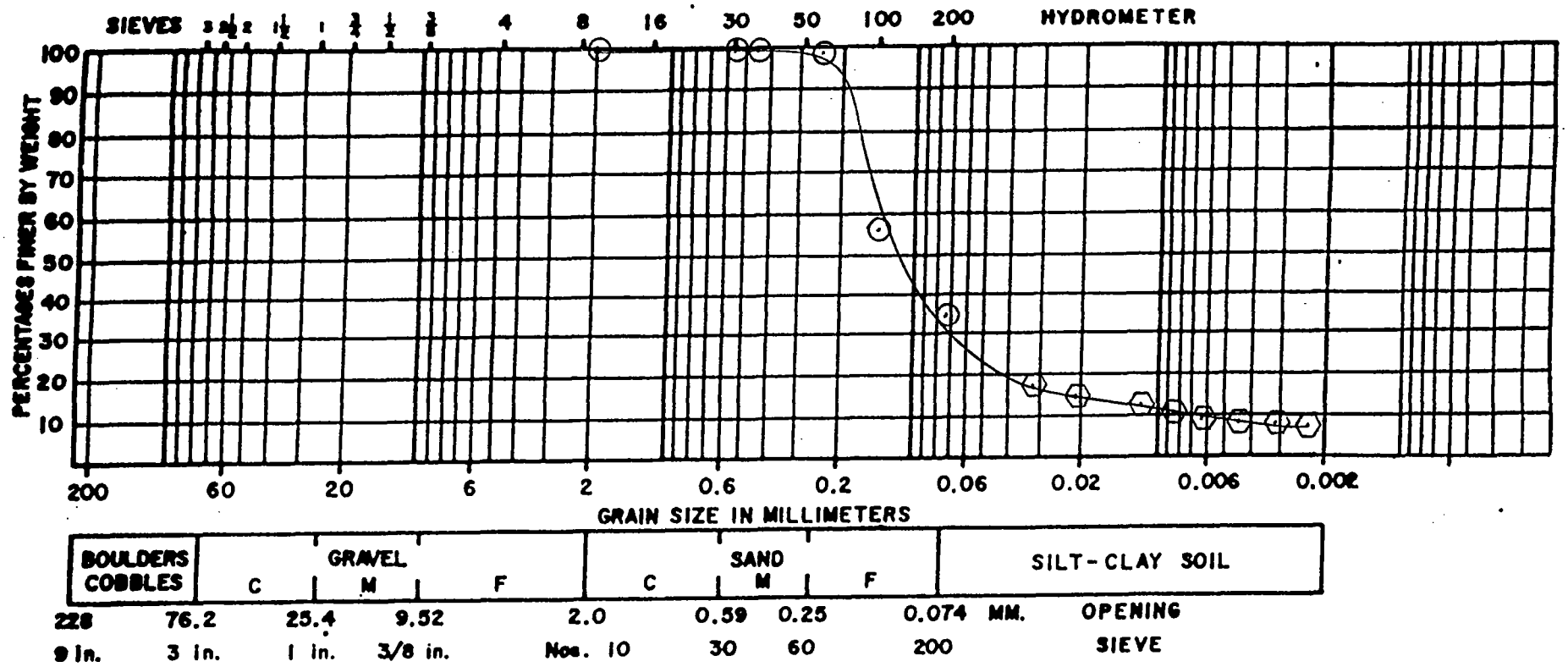
JOB NO.: L-04013
Report No: 4
Date June 7, 2004

GRAIN SIZE ANALYSIS



L-04013	Lab I.D. #	17576
(04518)	Sample #	SWMU-261 MW-03
CTO-41-MCB	Depth	0.5' - 2.5'
Camp Leguene		

⊙ Sieve Analysis ASTM D422 & D1140
⊙ Hydrometer Analysis ASTM D422

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June 7, 2004

L-04013
(04518)
CTO-41-MCB
Camp Leguene

ATTERBERG LIMITS ASTM D4318
AND UNIFIED SOIL CLASSIFICATION ASTM D2487

Lab ID#	Sample #.	Depth (feet)	Plastic Limit	Liquid Limit	Plasticity Index	Classification
17574	SWMU-318 MW-02	4.0 – 6.0	16	31	15	SC
17575A	SWM-0318 MW-38 (Clay)	6.0 – 8.0	18	39	21	SC
17575B	SWM-0318 MW-38 (Sand)	6.0 – 8.0	Non-Plastic	--	--	SM
17576	SWMU-261 MW-03	0.5 – 2.5	Non-Plastic	--	--	SM

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June 7, 2004

L-04013
(04518)
CTO-41-MCB
Camp Leguene

SPECIFIC GRAVITY OF SOILS ASTM D854

Lab I.D. #	Sample	Depth (feet)	(D854) Minus No. 4 Fraction Specific Gravity of Solids (G)
17574	SWMU-318 MW-02	4.0 – 6.0	2.59
17575A	SWM-0318 MW-38 (Clay)	6.0 – 8.0	2.55
17575B	SWM-0318 MW-38 (Sand)	6.0 – 8.0	2.64
17576	SWMU-261 MW-03	0.5 – 2.5	2.64

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REPORT Date June 7, 2004

Test Start Date 4/26/04

Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter ASTM D5084

Project No.: L-04013 / Project Title (04518) CTO-41-MCB Camp Leguene

ST. No: SWMU-318 / Lab ID#: 17574 / Test Sample Location: MW-02

Depth/Lift/Elev.: 4.0' - 6.0' / Type of Sample: Undisturbed X Remolded --

Method of Compaction: -- / Percent Compaction: --

Dry Unit Weight (PCF) Maximum: -- Initial: 105.1 / Moisture Content (% of Dry Weight): Optimum: -- Initial: 21.2

Initial Height (cm): 12.78 / Initial Diameter (cm): 7.20 / Initial Gradient: 22.0

Initial Degree of Saturation (B Value) (%): -- / Permeant Liquid Used: Deaired Deionized H2O

Confining Pressure (PSI): 71.0 / Test (head) Pressure (PSI): 68.0 / Tail (back) Pressure (PSI): 64.0

Final Degree of Saturation (B Value) (%): 96 / Final Dry Unit Weight (PCF): 105.9 / Final Gradient: 22.5

Final Height (cm): 12.51 / Final Diameter (cm): 7.25 / Final Moisture Content (% of Dry Weight): 23.6

Final Four Determinations k (cm/sec)

$1.48X10^{-8}$	$1.48X10^{-8}$	$1.48x10^{-8}$	$1.48X10^{-8}$

Mean Value of Final Four Consecutive Determinations:

Coefficient of Permeability k (cm/sec): $1.48X10^{-8}$

Project Specifications: --

Notes:

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REPORT Date June 7, 2004

Test Start Date 5/2/04

Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter ASTM D5084

Project No.: L-04013 / Project Title (04518) CTO-41-MCB Camp Leguene

ST. No: SWM-0318 / Lab ID#: 17575A / Test Sample Location: MW-38 (Nose of tube Clay)

Depth/Lift/Elev.: 6.0' - 8.0' / Type of Sample: Undisturbed X Remolded --

Method of Compaction: -- / Percent Compaction: --

Dry Unit Weight (PCF) Maximum: -- Initial: 89.9 / Moisture Content (% of Dry Weight): Optimum: -- Initial: 23.2

Initial Height (cm): 6.00 / Initial Diameter (cm): 7.23 / Initial Gradient: 46.9

Initial Degree of Saturation (B Value) (%): -- / Permeant Liquid Used: Deaired Deionized H2O

Confining Pressure (PSI): 71.0 / Test (head) Pressure (PSI): 68.0 / Tail (back) Pressure (PSI): 64.0

Final Degree of Saturation (B Value) (%): 98 / Final Dry Unit Weight (PCF): 96.2 / Final Gradient: 47.7

Final Height (cm): 5.90 / Final Diameter (cm): 7.05 / Final Moisture Content (% of Dry Weight): 32.6

Final Four Determinations k (cm/sec)

$3.86X10^{-6}$	$3.74X10^{-6}$	$3807x10^{-6}$	$3.68X10^{-6}$

Mean Value of Final Four Consecutive Determinations:

Coefficient of Permeability k (cm/sec): $3.77X10^{-6}$

Project Specifications: --

Notes:

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REPORT Date June 7, 2004

Test Start Date 5/2/04

Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter ASTM D5084

Project No.: L-04013 / Project Title (04518) CTO-41-MCB Camp Leguene

ST. No: SWM-0318 / Lab ID#: 17575B / Test Sample Location: MW-38 (Top of Tube Sand)

Depth/Lift/Elev.: 6.0' - 8.0' / Type of Sample: Undisturbed X Remolded --

Method of Compaction: -- /Percent Compaction: --

Dry Unit Weight (PCF) Maximum: -- Initial: 107.1 / Moisture Content (% of Dry Weight): Optimum: -- Initial: 4.5

Initial Height (cm): 5.41 / Initial Diameter (cm): 7.20 / Initial Gradient: 52.0

Initial Degree of Saturation (B Value) (%): -- /Permeant Liquid Used: Deaired Deionized H2O

Confining Pressure (PSI): 71.0 / Test (head) Pressure (PSI): 68.0 / Tail (back) Pressure (PSI): 64.0

Final Degree of Saturation (B Value) (%): 98 / Final Dry Unit Weight (PCF): 125.8 / Final Gradient: 68.8

Final Height (cm): 4.09 / Final Diameter (cm): 7.64 / Final Moisture Content (% of Dry Weight): 15.3

Final Four Determinations k (cm/sec)

$2.83X10^{-5}$	$2.78X10^{-5}$	$2.81x10^{-5}$	$2.83X10^{-5}$

Mean Value of Final Four Consecutive Determinations:

Coefficient of Permeability k (cm/sec): $2.81X10^{-5}$

Project Specifications: --

Notes:

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REPORT Date June 7, 2004

Test Start Date 4/26/04

Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter ASTM D5084

Project No.: L-04013 / Project Title (04518) CTO-41-MCB Camp Leguene

ST. No: SWMU-261 / Lab ID#: 17576 / Test Sample Location: MW-03

Depth/Lift/Elev.: 0.5'-2.5' / Type of Sample: Undisturbed X Remolded --

Method of Compaction: -- / Percent Compaction: --

Dry Unit Weight (PCF) Maximum: -- Initial: 86.3 / Moisture Content (% of Dry Weight): Optimum: -- Initial: 10.7

Initial Height (cm): 13.98 / Initial Diameter (cm): 7.20 / Initial Gradient: 20.1

Initial Degree of Saturation (B Value) (%): -- / Permeant Liquid Used: Deaired Deionized H2O

Confining Pressure (PSI): 71.0 / Test (head) Pressure (PSI): 68.0 / Tail (back) Pressure (PSI): 64.0

Final Degree of Saturation (B Value) (%): 96 / Final Dry Unit Weight (PCF): 113.5 / Final Gradient: 20.6

Final Height (cm): 13.63 / Final Diameter (cm): 7.24 / Final Moisture Content (% of Dry Weight): 17.1

Final Four Determinations k (cm/sec)

$4.67X10^{-6}$	$4.75X10^{-6}$	$4.74x10^{-6}$	$4.82X10^{-6}$

Mean Value of Final Four Consecutive Determinations:

Coefficient of Permeability k (cm/sec): $4.75X10^{-6}$

Project Specifications: --

Notes:

Baker

Michael Baker Jr., Inc.

APPENDIX F

Summary of Analytical Results

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB01-00	SWMU318-SB02-00	SWMU318-SB03-00	SWMU318-SB06-00	SWMU318-SB06-00D	SWMU318-SB07-00	SWMU318-SB08-00	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB16-00
Date	3/16/2004	3/16/2004	3/19/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004	3/22/2004	3/23/2004	2/4/2005
Sample Depth (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)										
1,1,1-TRICHLOROETHANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
1,1,2,2-TETRACHLOROETHANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	500 U	NA	10 UJ	10 UJ	NA	NA	12 U	NA	11 U
1,1,2-TRICHLOROETHANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
1,1-DICHLOROETHANE	NA	500 U	NA	10 UJ	10 UJ	NA	NA	12 U	NA	11 U
1,1-DICHLOROETHENE	NA	500 U	NA	10 UJ	10 UJ	NA	NA	12 U	NA	11 U
1,2,4-TRICHLOROBENZENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
1,2-DIBROMO-3-CHLOROPROPANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	11 U
1,2-DICHLOROBENZENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
1,2-DICHLOROETHANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
1,2-DICHLOROETHYLENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
1,2-DICHLOROPROPANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
1,3-DICHLOROBENZENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
1,4-DICHLOROBENZENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
2-BUTANONE	NA	500 UJ	NA	10 UJ	10 UJ	NA	NA	12 U	NA	11 U
2-HEXANONE	NA	500 U	NA	10 UJ	10 UJ	NA	NA	12 U	NA	11 U
4-METHYL-2-PENTANONE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
ACETONE	NA	500 UJ	NA	10 UJ	10 UJ	NA	NA	12 UJ	NA	11 U
BENZENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
BROMODICHLOROMETHANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
BROMOFORM	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
BROMOMETHANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
CARBON DISULFIDE	NA	500 U	NA	10 UJ	10 UJ	NA	NA	12 U	NA	11 U
CARBON TETRACHLORIDE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
CHLOROBENZENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
CHLOROETHANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
CHLOROFORM	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
CHLOROMETHANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
CIS-1,2-DICHLOROETHENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
CIS-1,3-DICHLOROPROPENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
CYCLOHEXANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
DIBROMOCHLOROMETHANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
DICHLORODIFLUOROMETHANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
ETHYLBENZENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
ETHYLENE DIBROMIDE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	NA
ISOPROPYLBENZENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
M-,P-XYLENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
METHYL ACETATE	NA	500 U	NA	10 UJ	10 UJ	NA	NA	12 U	NA	11 U
METHYL TERT-BUTYL ETHER	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
METHYLCYCLOHEXANE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
METHYLENE CHLORIDE	NA	500 U	NA	10 U	10 U	NA	NA	23 UJ	NA	17 U
NAPHTHALENE	2900	NA	400 U	NA	NA	400 U	32000	390 U	400 U	NA
O-XYLENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
STYRENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
TETRACHLOROETHENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
TOLUENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
TRANS-1,2-DICHLOROETHENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
TRANS-1,3-DICHLOROPROPENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
TRICHLOROETHENE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
TRICHLOROFLUOROMETHANE	NA	500 U	NA	10 UJ	10 UJ	NA	NA	2 J	NA	11 U
VINYL CHLORIDE	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U
XYLENES (TOTAL)	NA	500 U	NA	10 U	10 U	NA	NA	12 U	NA	11 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB01-00	SWMU318-SB02-00	SWMU318-SB03-00	SWMU318-SB06-00	SWMU318-SB06-00D	SWMU318-SB07-00	SWMU318-SB08-00	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB16-00
Date	3/16/2004	3/16/2004	3/19/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004	3/22/2004	3/23/2004	2/4/2005
Sample Depth (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug/Kg)										
1,1'-BIPHENYL	11 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
2,2'-OXYBIS(1-CHLOROPROPANE)	390 U	NA	400 UJ	NA	NA	400 UJ	9000 U	390 U	400 U	390 U
2,4,5-TRICHLOROPHENOL	980 U	NA	1000 U	NA	NA	1000 U	22000 U	980 U	1000 U	990 U
2,4,6-TRICHLOROPHENOL	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
2,4-DICHLOROPHENOL	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
2,4-DIMETHYLPHENOL	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
2,4-DINITROPHENOL	980 U	NA	1000 U	NA	NA	1000 U	22000 U	980 U	1000 U	990 U
2,4-DINITROTOLUENE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
2,6-DINITROTOLUENE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
2-CHLORONAPHTHALENE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
2-CHLOROPHENOL	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
2-METHYLNAPHTHALENE	180 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
2-METHYLPHENOL	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
2-NITROANILINE	980 U	NA	1000 UJ	NA	NA	1000 UJ	22000 U	980 U	1000 U	990 U
2-NITROPHENOL	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
3,3'-DICHLOROBENZIDINE	390 U	NA	400 U	NA	NA	400 U	9000 UJ	390 UJ	400 UJ	390 U
3-NITROANILINE	980 UJ	NA	1000 U	NA	NA	1000 U	22000 U	980 U	1000 U	990 U
4,6-DINITRO-2-METHYLPHENOL	980 U	NA	1000 U	NA	NA	1000 U	22000 U	980 U	1000 U	990 U
4-BROMOPHENYL PHENYL ETHER	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
4-CHLORO-3-METHYLPHENOL	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
4-CHLOROANILINE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
4-CHLOROPHENYL PHENYL ETHER	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
4-METHYLPHENOL	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
4-NITROANILINE	980 UJ	NA	1000 U	NA	NA	1000 U	22000 UJ	980 UJ	1000 UJ	990 U
4-NITROPHENOL	980 U	NA	1000 U	NA	NA	1000 U	22000 U	980 U	1000 U	990 U
ACENAPHTHENE	220 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
ACENAPHTHYLENE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
ACETOPHENONE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
ANTHRACENE	32 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
ATRAZINE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
BENZALDEHYDE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
BENZO(A)ANTHRACENE	350 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
BENZO(A)PYRENE	380 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
BENZO(B)FLUORANTHENE	430	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
BENZO(K)FLUORANTHENE	300 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
BENZO[G,H,I]PERYLENE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
BIS(2-CHLOROETHOXY) METHANE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
BIS(2-CHLOROETHYL) ETHER	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
BIS(2-ETHYLHEXYL) PHTHALATE	390 U	NA	400 UJ	NA	NA	400 UJ	9000 U	390 U	400 U	220 J
BUTYL BENZYL PHTHALATE	390 U	NA	400 UJ	NA	NA	400 UJ	9000 U	390 U	400 U	390 U
CAPROLACTAM	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
CARBAZOLE	19 J	NA	400 UJ	NA	NA	400 UJ	9000 U	390 U	400 U	390 U
CHRYSENE	390	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
DI-N-BUTYL PHTHALATE	31 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
DI-N-OCTYLPHTHALATE	390 U	NA	400 UJ	NA	NA	400 UJ	9000 U	390 U	400 U	390 U
DIBENZ(A,H)ANTHRACENE	68 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
DIBENZOFURAN	150 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
DIETHYL PHTHALATE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
DIMETHYL PHTHALATE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
FLUORANTHENE	650	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
FLUORENE	160 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
HEXACHLOROBENZENE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
HEXACHLOROBUTADIENE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB01-00	SWMU318-SB02-00	SWMU318-SB03-00	SWMU318-SB06-00	SWMU318-SB06-00D	SWMU318-SB07-00	SWMU318-SB08-00	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB16-00
Date	3/16/2004	3/16/2004	3/19/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004	3/22/2004	3/23/2004	2/4/2005
Sample Depth (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug/Kg)										
HEXACHLOROCYCLOPENTADIENE	390 U	NA	400 UJ	NA	NA	400 UJ	9000 UJ	390 U	400 U	390 U
HEXACHLOROETHANE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
INDENO(1,2,3-CD)PYRENE	210 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
ISOPHORONE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	390 U
NITROBENZENE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
N-NITROSO-DI-N-PROPYLAMINE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
N-NITROSODIPHENYLAMINE	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
PENTACHLOROPHENOL	980 U	NA	1000 U	NA	NA	1000 U	22000 U	980 U	1000 U	990 U
PHENANTHRENE	120 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
PHENOL	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
PYRENE	830	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U	390 U
Metals (mg/kg)										
ARSENIC	0.71 J	NA	1.4 U	NA	NA	0.48 J	1.1 J	2.6	0.82 J	2 U
BARIUM	10.3 J	NA	4.6 J	NA	NA	5.9	22.1	20.3 J	11.7 J	23 J
CADMIUM	0.43 J	NA	10 U	NA	NA	0.04 U	1.3 J	0.55 J	0.87 U	3.1
CHROMIUM	6.1 J	NA	2.8 J	NA	NA	3.8	10.7	10.3	3.7	15.5
LEAD	19.8	NA	2 J	NA	NA	2.8	2.2	21.7 J	8.4 J	32.5
MERCURY	0.01 U	NA	0.01 U	NA	NA	0.01 J	0.01 J	0.03 J	0.02 J	0.07 U
SELENIUM	0.42 J	NA	0.39 U	NA	NA	0.38 J	0.34 U	0.69 J	0.4 U	0.66 U
SILVER	4.6 J	NA	0.2 U	NA	NA	0.17 U	0.17 U	0.22 U	0.2 U	0.13 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB20-00D	SWMU318-SB21-00	SWMU318-SB23-00	SWMU318-SB24-00
Date	2/4/2005	2/3/2005	2/8/2005	2/3/2005	2/3/2005	2/7/2005
Sample Depth (ft)	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)						
1,1,1-TRICHLOROETHANE	NA	12 UJ	10 U	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	12 UJ	10 U	NA	NA	NA
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	12 UJ	10 U	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	12 UJ	10 U	NA	NA	NA
1,1-DICHLOROETHANE	NA	12 UJ	10 U	NA	NA	NA
1,1-DICHLOROETHENE	NA	12 UJ	10 U	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NA	12 UJ	10 U	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	12 UJ	10 U	NA	NA	NA
1,2-DIBROMOETHANE	NA	12 UJ	10 U	NA	NA	NA
1,2-DICHLOROBENZENE	NA	12 UJ	10 U	NA	NA	NA
1,2-DICHLOROETHANE	NA	12 UJ	10 U	NA	NA	NA
1,2-DICHLOROETHYLENE	NA	12 UJ	10 U	NA	NA	NA
1,2-DICHLOROPROPANE	NA	12 UJ	10 U	NA	NA	NA
1,3-DICHLOROBENZENE	NA	12 UJ	10 U	NA	NA	NA
1,4-DICHLOROBENZENE	NA	12 UJ	10 U	NA	NA	NA
2-BUTANONE	NA	12 UJ	10 U	NA	NA	NA
2-HEXANONE	NA	12 UJ	10 U	NA	NA	NA
4-METHYL-2-PENTANONE	NA	12 UJ	10 U	NA	NA	NA
ACETONE	NA	12 UJ	10 U	NA	NA	NA
BENZENE	NA	12 UJ	10 U	NA	NA	NA
BROMODICHLOROMETHANE	NA	12 UJ	10 U	NA	NA	NA
BROMOFORM	NA	12 UJ	10 U	NA	NA	NA
BROMOMETHANE	NA	12 UJ	10 U	NA	NA	NA
CARBON DISULFIDE	NA	12 UJ	10 U	NA	NA	NA
CARBON TETRACHLORIDE	NA	12 UJ	10 U	NA	NA	NA
CHLOROBENZENE	NA	12 UJ	10 U	NA	NA	NA
CHLOROETHANE	NA	12 UJ	10 U	NA	NA	NA
CHLOROFORM	NA	12 UJ	10 U	NA	NA	NA
CHLOROMETHANE	NA	12 UJ	10 U	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	12 UJ	10 U	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	12 UJ	10 U	NA	NA	NA
CYCLOHEXANE	NA	12 UJ	10 U	NA	NA	NA
DIBROMOCHLOROMETHANE	NA	12 UJ	10 U	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	12 UJ	10 U	NA	NA	NA
ETHYLBENZENE	NA	12 UJ	10 U	NA	NA	NA
ETHYLENE DIBROMIDE	NA	NA	NA	NA	NA	NA
ISOPROPYLBENZENE	NA	12 UJ	10 U	NA	NA	NA
M-,P-XYLENE	NA	12 UJ	10 U	NA	NA	NA
METHYL ACETATE	NA	12 UJ	10 U	NA	NA	NA
METHYL TERT-BUTYL ETHER	NA	12 UJ	10 U	NA	NA	NA
METHYLCYCLOHEXANE	NA	12 UJ	10 U	NA	NA	NA
METHYLENE CHLORIDE	NA	17 U	13 U	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	12 UJ	10 U	NA	NA	NA
STYRENE	NA	12 UJ	10 U	NA	NA	NA
TETRACHLOROETHENE	NA	12 UJ	10 U	NA	NA	NA
TOLUENE	NA	12 UJ	10 U	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	12 UJ	10 U	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	12 UJ	10 U	NA	NA	NA
TRICHLOROETHENE	NA	12 UJ	10 U	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	12 UJ	10 U	NA	NA	NA
VINYL CHLORIDE	NA	12 UJ	10 U	NA	NA	NA
XYLENES (TOTAL)	NA	12 UJ	10 U	NA	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB20-00D	SWMU318-SB21-00	SWMU318-SB23-00	SWMU318-SB24-00
Date	2/4/2005	2/3/2005	2/8/2005	2/3/2005	2/3/2005	2/7/2005
Sample Depth (ft)	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug/Kg)						
1,1'-BIPHENYL	390 U	NA	NA	360 U	400 U	390 U
2,2'-OXYBIS(1-CHLOROPROPANE)	390 U	NA	NA	360 U	400 U	390 U
2,4,5-TRICHLOROPHENOL	980 U	NA	NA	890 U	1000 U	980 U
2,4,6-TRICHLOROPHENOL	390 U	NA	NA	360 U	400 U	390 U
2,4-DICHLOROPHENOL	390 U	NA	NA	360 U	400 U	390 U
2,4-DIMETHYLPHENOL	390 U	NA	NA	360 U	400 U	390 U
2,4-DINITROPHENOL	980 U	NA	NA	890 U	1000 U	980 U
2,4-DINITROTOLUENE	390 U	NA	NA	360 U	400 U	390 U
2,6-DINITROTOLUENE	390 U	NA	NA	360 U	400 U	390 U
2-CHLORONAPHTHALENE	390 U	NA	NA	360 U	400 U	390 U
2-CHLOROPHENOL	390 U	NA	NA	360 U	400 U	390 U
2-METHYLNAPHTHALENE	390 U	NA	NA	360 U	400 U	390 U
2-METHYLPHENOL	390 U	NA	NA	360 U	400 U	390 U
2-NITROANILINE	980 U	NA	NA	890 U	1000 U	980 U
2-NITROPHENOL	390 U	NA	NA	360 U	400 U	390 U
3,3'-DICHLOROBENZIDINE	390 U	NA	NA	360 U	400 U	390 U
3-NITROANILINE	980 U	NA	NA	890 U	1000 U	980 U
4,6-DINITRO-2-METHYLPHENOL	980 U	NA	NA	890 U	1000 U	980 U
4-BROMOPHENYL PHENYL ETHER	390 U	NA	NA	360 U	400 U	390 U
4-CHLORO-3-METHYLPHENOL	390 U	NA	NA	360 U	400 U	390 U
4-CHLOROANILINE	390 U	NA	NA	360 U	400 U	390 U
4-CHLOROPHENYL PHENYL ETHER	390 U	NA	NA	360 U	400 U	390 U
4-METHYLPHENOL	390 U	NA	NA	360 U	400 U	390 U
4-NITROANILINE	980 U	NA	NA	890 U	1000 U	980 U
4-NITROPHENOL	980 U	NA	NA	890 U	1000 U	980 U
ACENAPHTHENE	390 U	NA	NA	360 U	400 U	390 U
ACENAPHTHYLENE	390 U	NA	NA	360 U	400 U	390 U
ACETOPHENONE	390 U	NA	NA	360 U	400 U	390 U
ANTHRACENE	390 U	NA	NA	360 U	400 U	390 U
ATRAZINE	390 U	NA	NA	360 U	400 U	390 U
BENZALDEHYDE	390 U	NA	NA	360 U	400 U	390 U
BENZO(A)ANTHRACENE	390 U	NA	NA	360 U	400 U	390 U
BENZO(A)PYRENE	390 U	NA	NA	360 U	400 U	390 U
BENZO(B)FLUORANTHENE	390 U	NA	NA	360 U	400 U	390 U
BENZO(K)FLUORANTHENE	390 U	NA	NA	360 U	400 U	390 U
BENZO[G,H,I]PERYLENE	390 U	NA	NA	360 U	400 U	390 U
BIS(2-CHLOROETHOXY) METHANE	390 U	NA	NA	360 U	400 U	390 U
BIS(2-CHLOROETHYL) ETHER	390 U	NA	NA	360 U	400 U	390 U
BIS(2-ETHYLHEXYL) PHTHALATE	390 U	NA	NA	360 U	400 U	2,100
BUTYL BENZYL PHTHALATE	390 U	NA	NA	360 U	400 U	390 U
CAPROLACTAM	390 U	NA	NA	360 U	400 U	390 U
CARBAZOLE	390 U	NA	NA	360 U	400 U	390 U
CHRYSENE	390 U	NA	NA	360 U	400 U	390 U
DI-N-BUTYL PHTHALATE	390 U	NA	NA	360 U	400 U	390 U
DI-N-OCTYLPHTHALATE	390 U	NA	NA	360 U	400 U	390 U
DIBENZ(A,H)ANTHRACENE	390 U	NA	NA	360 U	400 U	390 U
DIBENZOFURAN	390 U	NA	NA	360 U	400 U	390 U
DIETHYL PHTHALATE	390 U	NA	NA	360 U	400 U	390 U
DIMETHYL PHTHALATE	390 U	NA	NA	360 U	400 U	390 U
FLUORANTHENE	390 U	NA	NA	360 U	400 U	390 U
FLUORENE	390 U	NA	NA	360 U	400 U	390 U
HEXACHLOROBENZENE	390 U	NA	NA	360 U	400 U	390 U
HEXACHLOROBUTADIENE	390 U	NA	NA	360 U	400 U	390 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB20-00D	SWMU318-SB21-00	SWMU318-SB23-00	SWMU318-SB24-00
Date	2/4/2005	2/3/2005	2/8/2005	2/3/2005	2/3/2005	2/7/2005
Sample Depth (ft)	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug/Kg)						
HEXACHLOROCYCLOPENTADIENE	390 U	NA	NA	360 U	400 U	390 U
HEXACHLOROETHANE	390 U	NA	NA	360 U	400 U	390 U
INDENO(1,2,3-CD)PYRENE	390 U	NA	NA	360 U	400 U	390 U
ISOPHORONE	390 U	NA	NA	360 U	400 U	390 U
NAPHTHALENE	390 U	NA	NA	360 U	400 U	390 U
NITROBENZENE	390 U	NA	NA	360 U	400 U	390 U
N-NITROSO-DI-N-PROPYLAMINE	390 U	NA	NA	360 U	400 U	390 U
N-NITROSODIPHENYLAMINE	390 U	NA	NA	360 U	400 U	390 U
PENTACHLOROPHENOL	980 U	NA	NA	890 U	1000 U	980 U
PHENANTHRENE	390 U	NA	NA	360 U	400 U	390 U
PHENOL	390 U	NA	NA	360 U	400 U	390 U
PYRENE	390 U	NA	NA	360 U	400 U	390 U
Metals (mg/kg)						
ARSENIC	3.4 U	NA	NA	0.8 U	NA	2.3 U
BARIUM	17.3 J	NA	NA	9.4 J	NA	26.7 J
CADMIUM	0.54 U	NA	NA	0.23 U	NA	1.4
CHROMIUM	12.5	NA	NA	5.6	NA	17
LEAD	29.2	NA	NA	12.8	NA	60.8
MERCURY	0.05 U	NA	NA	0.03 U	NA	0.04 U
SELENIUM	1 U	NA	NA	0.67 U	NA	0.78 U
SILVER	0.15 U	NA	NA	0.13 U	NA	0.13 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB01-04	SWMU318-SB02-01	SWMU318-SB02-01D	SWMU318-SB02-04	SWMU318-SB03-01	SWMU318-SB04-01	SWMU318-SB04-02	SWMU318-SB04-04	SWMU318-SB05-02D
Date	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004
Depth Range (ft bgs)	7-9	1-3	1-3	7-9	1-3	1-3	3-5	7-9	3-5
Volatile Organic Compounds (ug/kg)									
1,1,1-trichloroethane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
1,1,2,2-tetrachloroethane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	NA	NA	NA	NA	10 UJ	NA	NA	NA
1,1,2-trichloroethane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
1,1-dichloroethane	NA	NA	NA	NA	NA	10 UJ	NA	NA	NA
1,1-dichloroethene	NA	NA	NA	NA	NA	10 UJ	NA	NA	NA
1,2,4-trichlorobenzene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
1,2-dibromo-3-chloropropane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichlorobenzene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
1,2-dichloroethane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
1,2-Dichloroethylene (total)	NA	NA	NA	NA	NA	10 U	NA	NA	NA
1,2-dichloropropane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
1,3-dichlorobenzene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
1,4-dichlorobenzene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
2-butanone	NA	NA	NA	NA	NA	10 UJ	NA	NA	NA
2-hexanone	NA	NA	NA	NA	NA	10 UJ	NA	NA	NA
4-methyl-2-pentanone	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	12 UJ	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Carbon Disulfide	NA	NA	NA	NA	NA	10 UJ	NA	NA	NA
Carbon Tetrachloride	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
cis-1,2-Dichloroethane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
cis-1,2-Dichloropropene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Ethylene Dibromide	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
M-,P-Xylene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Methyl Acetate	NA	NA	NA	NA	NA	19 J	NA	NA	NA
Methyl Tert-Butyl Ether	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Methylcyclohexane	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Napthalene	45 J	140 J	220 J	23 J	18 J	NA	490 U	410 U	400 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB01-04	SWMU318-SB02-01	SWMU318-SB02-01D	SWMU318-SB02-04	SWMU318-SB03-01	SWMU318-SB04-01	SWMU318-SB04-02	SWMU318-SB04-04	SWMU318-SB05-02D
Date	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004
Depth Range (ft bgs)	7-9	1-3	1-3	7-9	1-3	1-3	3-5	7-9	3-5
Volatile Organic Compounds (ug/kg)									
o-Xylene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	0.9 J	NA	NA	NA
trans-1,3-Dichloroethene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Trichloroethene	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	10 UJ	NA	NA	NA
Vinyl Chloride	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Xylenes (total)	NA	NA	NA	NA	NA	10 U	NA	NA	NA
Semi Volatile Organic Compounds (ug/kg)									
1,1-Biphenyl	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
2,2'-Oxybis (1-chloropropane)	440 U	370 U	390 U	440 UJ	380 U	NA	490 U	410 U	400 UJ
2,4,5-Trichlorophenol	1100 U	920 U	980 U	1100 U	970 U	NA	1200 U	1000 U	1000 U
2,4,6-Trichlorophenol	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
2,4-Dichlorophenol	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
2,4-Dimethylphenol	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
2,4-Dinitrophenol	1100 U	920 U	980 U	1100 U	970 U	NA	1200 U	1000 U	1000 U
2,4-Dinitrotoluene	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
2,6-Dinitrotoluene	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
2-Chloronaphthalene	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
2-Chlorophenol	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
2-Methylnaphthalene	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
2-Methylphenol	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
2-Nitroaniline	1100 U	920 U	980 U	1100 UJ	970 U	NA	1200 U	1000 U	1000 UJ
2-Nitrophenol	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
3,3'-Dichlorobenzidine	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
3-Nitroaniline	1100 UJ	920 UJ	980 U	1100 U	970 U	NA	1200 U	1000 U	1000 U
4,6-Dinitro-2-methyl-phenol	1100 U	920 U	980 U	1100 U	970 U	NA	1200 U	1000 U	1000 U
4-Bromophenyl Phenyl Ether	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
4-Chloro-3-methylphenol	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
4-Chloroaniline	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
4-Chlorophenyl Phenyl Ether	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
4-Methylphenol	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
4-Nitroanaline	1100 UJ	920 UJ	980 U	1100 U	970 U	NA	1200 U	1000 U	1000 U
4-Nitrophenol	1100 U	920 U	980 U	1100 U	970 U	NA	1200 U	1000 U	1000 U
Acenapthene	20 J	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Acenapthylene	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Acetophenone	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Anthracene	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Atrazine	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Benzaldehyde	440 U	370 U	390 U	440 U	23 J	NA	490 U	410 U	400 U
Benzo(a)anthracene	68 J	370 U	390 U	440 U	380 U	NA	42 J	410 U	400 U
Benzo(a)pyrene	54 J	370 U	390 U	440 U	380 U	NA	43 J	410 U	400 U
Benzo(b)fluoranthene	68 J	370 U	390 U	440 U	380 U	NA	72 J	410 U	400 U
Benzo(k)fluoranthene	50 J	370 U	390 U	440 U	380 U	NA	39 J	410 U	400 U
Benzo[g,h,i]perylene	440 U	370 U	390 UJ	440 U	380 UJ	NA	490 UJ	410 UJ	400 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB01-04	SWMU318-SB02-01	SWMU318-SB02-01D	SWMU318-SB02-04	SWMU318-SB03-01	SWMU318-SB04-01	SWMU318-SB04-02	SWMU318-SB04-04	SWMU318-SB05-02D
Date	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004
Depth Range (ft bgs)	7-9	1-3	1-3	7-9	1-3	1-3	3-5	7-9	3-5
Bis(2-chloroethoxy) methane	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Bis(2-chloroethyl) ether	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Bis(2-ethylhexyl) phthalate	440 U	370 U	390 U	440 UJ	380 U	NA	490 U	410 U	400 UJ
Butyl benzyl phthalate	440 U	370 U	390 U	440 UJ	380 U	NA	490 U	410 U	400 UJ
Semi Volatile Organic Compounds (ug/kg)									
Caprolactam	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Carbazole	440 UJ	370 UJ	390 U	440 UJ	380 U	NA	490 U	410 U	400 UJ
Chrysene	68 J	370 U	390 U	440 U	380 U	NA	50 J	410 U	400 U
Di-n-butyl phthalate	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Di-n-octylphthalate	440 U	370 U	390 U	440 UJ	380 U	NA	490 U	410 U	400 UJ
Dibenzo(a,h) anthracene	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Dibenzofuran	14 J	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Diethyl phthalate	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Dimethyl phthalate	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Fluoranthene	120 J	370 U	390 U	440 U	380 U	NA	67 J	410 U	400 U
Fluorene	17 J	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Hexachlorobenzene	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Hexachlorobutadiene	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Hexachlorocyclopentadiene	440 U	370 U	390 UJ	440 UJ	380 UJ	NA	490 UJ	410 UJ	400 UJ
Hexachloroethane	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Indeno(1,2,3-cd) pyrene	28 J	370 U	390 U	440 U	380 U	NA	32 J	410 U	400 U
Isophorone	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Napthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitroso-di-n-propylamine	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
n-Nitrosodiphenylamine	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Nitrobenzene	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Pentachlorophenol	1100 U	920 U	980 U	1100 U	970 U	NA	1200 U	1000 U	1000 U
Phenanthrene	18 J	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Phenol	440 U	370 U	390 U	440 U	380 U	NA	490 U	410 U	400 U
Pyrene	120 J	370 U	390 U	440 U	380 U	NA	68 J	410 U	400 U
Metals (mg/kg)									
Arsenic	1.4 J	1 J	1.8	10.2	3.1	NA	51	1.6 J	5.4
Barium	15.9 J	12.8 J	19.3 J	9.4 J	15.3 J	NA	21.4 J	4.8 J	22.8 J
Cadmium	0.14 J	0.09 J	0.11 J	0.05 U	0.05 U	NA	0.07 U	0.05 U	0.15 J
Chromium	14.6 J	5 J	8.4 J	11.1 J	10.2 J	NA	34 J	6.7 J	18.6
Lead	11	7.4	11	7.5	8.6	NA	14.8	6.7	26.1 J
Mercury	0.07 J	0.04 J	0.05 J	0.03 J	0.06 J	NA	0.07 J	0.03 J	0.08 J
Selenium	0.5 UJ	0.81 J	0.66 J	0.47 UJ	0.86 J	NA	0.89 J	0.77 J	0.5 J
Silver	0.25 UJ	0.19 UJ	0.21 UJ	0.24 UJ	0.22 UJ	NA	0.3 UJ	0.25 UJ	0.18 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB05-02	SWMU318-SB05-03	SWMU318-SB06-01	SWMU318-SB06-01D	SWMU318-SB06-02	SWMU318-SB07-02	SWMU318-SB08-04	SWMU318-SB09-02	SWMU318-SB10-03
Date	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004	3/22/2004	3/23/2004
Depth Range (ft bgs)	3-5	5-7	1-3	1-3	3-5	3-5	7-9	3-5	5-7
Volatile Organic Compounds (ug/kg)									
1,1,1-trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethylene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
M-,P-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Napthalene	430 U	400 U	310 J	280 J	89 J	420 U	450 U	390 U	470 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB05-02	SWMU318-SB05-03	SWMU318-SB06-01	SWMU318-SB06-01D	SWMU318-SB06-02	SWMU318-SB07-02	SWMU318-SB08-04	SWMU318-SB09-02	SWMU318-SB10-03
Date	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004	3/22/2004	3/23/2004
Depth Range (ft bgs)	3-5	5-7	1-3	1-3	3-5	3-5	7-9	3-5	5-7
Volatile Organic Compounds (ug/kg)									
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi Volatile Organic Compounds (ug/kg)									
1,1-Biphenyl	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
2,2'-Oxybis (1-chloropropane)	430 UJ	400 UJ	410 U	420 U	430 UJ	420 UJ	450 UJ	390 U	470 U
2,4,5-Trichlorophenol	1100 U	1000 U	1000 U	1000 U	1100 U	1100 U	1100 U	980 U	1200 U
2,4,6-Trichlorophenol	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
2,4-Dichlorophenol	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
2,4-Dimethylphenol	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
2,4-Dinitrophenol	1100 U	1000 U	1000 U	1000 U	1100 U	1100 U	1100 U	980 U	1200 U
2,4-Dinitrotoluene	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
2,6-Dinitrotoluene	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
2-Chloronaphthalene	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
2-Chlorophenol	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
2-Methylnaphthalene	430 UJ	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
2-Methylphenol	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
2-Nitroaniline	1100 UJ	1000 UJ	1000 U	1000 UJ	1100 UJ	1100 UJ	1100 UJ	980 U	1200 U
2-Nitrophenol	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
3,3'-Dichlorobenzidine	430 U	87 J	410 U	420 U	430 U	420 U	450 U	390 UJ	470 UJ
3-Nitroaniline	1100 U	1000 U	1000 U	1000 U	1100 U	1100 U	1100 U	980 U	1200 U
4,6-Dinitro-2-methyl-phenol	1100 U	1000 U	1000 U	1000 U	1100 U	1100 U	1100 U	980 U	1200 U
4-Bromophenyl Phenyl Ether	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
4-Chloro-3-methylphenol	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
4-Chloroaniline	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
4-Chlorophenyl Phenyl Ether	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
4-Methylphenol	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
4-Nitroanaline	1100 U	1000 U	1000 U	1000 U	1100 U	1100 U	1100 U	980 UJ	1200 UJ
4-Nitrophenol	1100 U	1000 U	1000 U	1000 U	1100 U	1100 U	1100 U	980 U	1200 U
Acenapthene	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Acenapthylene	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Acetophenone	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Anthracene	430 U	31 J	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Atrazine	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Benzaldehyde	430 U	18 J	28 J	34 J	430 U	420 U	450 U	390 U	470 UJ
Benzo(a)anthracene	430 U	1200	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Benzo(a)pyrene	430 U	820	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Benzo(b)fluoranthene	430 U	1500	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Benzo(k)fluoranthene	430 U	1200	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Benzo[g,h,i]perylene	430 U	130 J	410 UJ	420 U	430 U	420 U	450 U	390 U	470 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB05-02	SWMU318-SB05-03	SWMU318-SB06-01	SWMU318-SB06-01D	SWMU318-SB06-02	SWMU318-SB07-02	SWMU318-SB08-04	SWMU318-SB09-02	SWMU318-SB10-03
Date	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004	3/22/2004	3/23/2004
Depth Range (ft bgs)	3-5	5-7	1-3	1-3	3-5	3-5	7-9	3-5	5-7
Bis(2-chloroethoxy) methane	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Bis(2-chloroethyl) ether	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Bis(2-ethylhexyl) phthalate	430 UJ	400 UJ	410 U	420 UJ	430 UJ	420 UJ	450 UJ	390 U	470 U
Butyl benzyl phthalate	430 UJ	400 U	410 U	420 UJ	430 UJ	420 UJ	450 UJ	390 U	470 U
Semi Volatile Organic Compounds (ug/kg)									
Caprolactam	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Carbazole	430 UJ	65 J	410 U	420 UJ	430 UJ	420 UJ	450 UJ	390 U	470 U
Chrysene	430 U	1900	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Di-n-butyl phthalate	430 UJ	4600 D	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Di-n-octylphthalate	430 UJ	400 UJ	410 U	420 UJ	430 UJ	420 UJ	450 UJ	390 U	470 U
Dibenzo(a,h) anthracene	430 U	180 J	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Dibenzofuran	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Diethyl phthalate	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Dimethyl phthalate	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Fluoranthene	430 U	3000	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Fluorene	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Hexachlorobenzene	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Hexachlorobutadiene	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Hexachlorocyclopentadiene	430 U	400 UJ	410 UJ	420 UJ	430 UJ	420 UJ	450 UJ	390 U	470 U
Hexachloroethane	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Indeno(1,2,3-cd) pyrene	430 U	440	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Isophorone	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Napthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitroso-di-n-propylamine	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
n-Nitrosodiphenylamine	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Nitrobenzene	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Pentachlorophenol	1100 U	1000 U	1000 U	1000 U	1100 U	1100 U	1100 U	980 U	1200 U
Phenanthrene	430 U	170 J	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Phenol	430 U	400 U	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Pyrene	430 U	2200	410 U	420 U	430 U	420 U	450 U	390 U	470 U
Metals (mg/kg)									
Arsenic	4.4	1.9	1 J	1.6 J	1.1 J	1.6	4.5	0.44 U	5
Barium	18.8 J	16.2 J	13.6 J	14.9 J	23.5 J	19.1	11.5	6.2 J	21.7 J
Cadmium	0.24 J	0.37 J	0.07 J	0.08 J	0.05 U	1.8 U	1.8 U	0.05 U	0.06 U
Chromium	13.2	8.1	5.1 J	7.2 J	14 J	8	15.5	7	29.8
Lead	45.9 J	12.2 J	10.1	9.5	15.8	10.1	7.8	3.8 J	14.4 J
Mercury	0.04 J	0.04 J	0.05 J	0.05 J	0.11	0.05 J	0.03 J	0.01 U	0.06 J
Selenium	0.42 U	0.62 J	1 J	0.65 J	0.6 J	0.64 J	0.48 J	0.48 U	0.53 U
Silver	0.21 U	0.2 U	0.26 UJ	0.2 UJ	0.23 UJ	0.21 U	0.21 U	0.24 U	0.27 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB11-01	SWMU318-SB11-03	SWMU318-SB12-01	SWMU318-SB12-04	SWMU318-SB14-02	SWMU318-SB14-03	SWMU318-SB15-01	SWMU318-SB15-03	SWMU318-SB16-02
Date	3/23/2004	3/23/2004	3/23/2004	3/23/2004	2/5/2005	2/5/2005	2/5/2005	2/5/2005	2/4/2005
Depth Range (ft bgs)	1-3	5-7	1-3	7-9	3-5	5-7	1-3	5-7	3-5
Volatile Organic Compounds (ug/kg)									
1,1,1-trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethylene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
M-,P-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Napthalene	380 U	580	380 U	430 U	NA	NA	NA	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB11-01	SWMU318-SB11-03	SWMU318-SB12-01	SWMU318-SB12-04	SWMU318-SB14-02	SWMU318-SB14-03	SWMU318-SB15-01	SWMU318-SB15-03	SWMU318-SB16-02
Date	3/23/2004	3/23/2004	3/23/2004	3/23/2004	2/5/2005	2/5/2005	2/5/2005	2/5/2005	2/4/2005
Depth Range (ft bgs)	1-3	5-7	1-3	7-9	3-5	5-7	1-3	5-7	3-5
Volatile Organic Compounds (ug/kg)									
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi Volatile Organic Compounds (ug/kg)									
1,1-Biphenyl	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
2,2'-Oxybis (1-chloropropane)	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
2,4,5-Trichlorophenol	960 U	1100 U	950 U	1100 U	980 U	1100 U	900 U	1200 U	1000 U
2,4,6-Trichlorophenol	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
2,4-Dichlorophenol	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
2,4-Dimethylphenol	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
2,4-Dinitrophenol	960 U	1100 U	950 U	1100 U	980 U	1100 U	900 U	1200 U	1000 U
2,4-Dinitrotoluene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
2,6-Dinitrotoluene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
2-Chloronaphthalene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
2-Chlorophenol	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
2-Methylnaphthalene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
2-Methylphenol	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
2-Nitroaniline	960 U	1100 U	950 U	1100 U	980 U	1100 U	900 U	1200 U	1000 U
2-Nitrophenol	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
3,3'-Dichlorobenzidine	380 UJ	430 UJ	380 UJ	430 UJ	390 U	440 U	360 U	480 U	400 U
3-Nitroaniline	960 U	1100 U	950 U	1100 U	980 U	1100 U	900 U	1200 U	1000 U
4,6-Dinitro-2-methyl-phenol	960 U	1100 U	950 U	1100 U	980 U	1100 U	900 U	1200 U	1000 U
4-Bromophenyl Phenyl Ether	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
4-Chloro-3-methylphenol	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
4-Chloroaniline	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
4-Chlorophenyl Phenyl Ether	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
4-Methylphenol	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
4-Nitroanaline	960 UJ	1100 UJ	950 UJ	1100 UJ	980 U	1100 U	900 U	1200 U	1000 U
4-Nitrophenol	960 U	1100 U	950 U	1100 U	980 U	1100 U	900 U	1200 U	1000 U
Acenapthene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Acenapthylene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Acetophenone	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Anthracene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Atrazine	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Benzaldehyde	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Benzo(a)anthracene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Benzo(a)pyrene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Benzo(b)fluoranthene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Benzo(k)fluoranthene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Benzo[g,h,i]perylene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB11-01	SWMU318-SB11-03	SWMU318-SB12-01	SWMU318-SB12-04	SWMU318-SB14-02	SWMU318-SB14-03	SWMU318-SB15-01	SWMU318-SB15-03	SWMU318-SB16-02
Date	3/23/2004	3/23/2004	3/23/2004	3/23/2004	2/5/2005	2/5/2005	2/5/2005	2/5/2005	2/4/2005
Depth Range (ft bgs)	1-3	5-7	1-3	7-9	3-5	5-7	1-3	5-7	3-5
Bis(2-chloroethoxy) methane	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Bis(2-chloroethyl) ether	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Bis(2-ethylhexyl) phthalate	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Butyl benzyl phthalate	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Semi Volatile Organic Compounds (ug/kg)									
Caprolactam	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Carbazole	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Chrysene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Di-n-butyl phthalate	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Di-n-octylphthalate	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Dibenzo(a,h) anthracene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Dibenzofuran	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Diethyl phthalate	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Dimethyl phthalate	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Fluoranthene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Fluorene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Hexachlorobenzene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Hexachlorobutadiene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Hexachlorocyclopentadiene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Hexachloroethane	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Indeno(1,2,3-cd) pyrene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Isophorone	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Napthalene	NA	NA	NA	NA	390 U	440 U	360 U	480 U	400 U
Nitrobenzene	NA	NA	NA	NA	390 U	440 U	360 U	480 U	400 U
n-Nitroso-di-n-propylamine	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
n-Nitrosodiphenylamine	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Nitrobenzene	380 U	430 U	380 U	430 U	NA	NA	NA	NA	NA
Pentachlorophenol	960 U	1100 U	950 U	1100 U	980 U	1100 U	900 U	1200 U	1000 U
Phenanthrene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Phenol	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Pyrene	380 U	430 U	380 U	430 U	390 U	440 U	360 U	480 U	400 U
Metals (mg/kg)									
Arsenic	2 J	1.4 J	1.9 J	10.6	3 U	37.4	0.8 U	20.7	1.7 U
Barium	59.8	9.1 J	9.2 J	19.4 J	10 J	12 J	5.1 J	22 J	20.5 J
Cadmium	0.99 U	0.05 U	0.05 U	0.62 J	0.05 U	0.06 U	0.13 U	0.06 U	1.9
Chromium	6.2	3	6.4	21.2	12.6	17	5.3	31.4	14.2
Lead	13.7 J	5.3 J	3.5 J	15.3	6.8	6.7	3.1 U	12.5	22.6
Mercury	0.05 J	0.04 J	0.03 J	0.06 J	0.02 U	0.01 U	0.01 U	0.05 U	0.06 U
Selenium	1.1	0.68 J	0.67 J	1	0.64 U	1.8 U	0.68 U	1.2 U	0.71 U
Silver	0.23 U	0.25 U	0.22 U	0.21 U	0.12 U	0.15 U	0.13 U	0.15 U	0.13 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB17-02	SWMU318-SB17-03	SWMU318-SB18-01	SWMU318-SB18-02	SWMU318-SB18-03	SWMU318-SB19-05	SWMU318-SB20-02	SWMU318-SB20-04	SWMU318-SB21-02
Date	2/5/2005	2/5/2005	2/7/2005	2/7/2005	2/7/2005	2/4/2005	2/3/2005	2/3/2005	2/3/2005
Depth Range (ft bgs)	3-5	5-7	1-3	3-5	5-7	9-11	3-5	7-9	3-5
Volatile Organic Compounds (ug/kg)									
1,1,1-trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,1,2,2-tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,1,2-trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,1-dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,1-dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,2,4-trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,2-dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,2-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,2-dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,2-Dichloroethylene (total)	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,2-dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,3-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
1,4-dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
2-butanone	NA	NA	NA	NA	NA	NA	NA	NA	12 U
2-hexanone	NA	NA	NA	NA	NA	NA	NA	NA	12 U
4-methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	11 J
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
cis-1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
cis-1,2-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
M-,P-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Methyl Tert-Butyl Ether	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	18 U
Napthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB17-02	SWMU318-SB17-03	SWMU318-SB18-01	SWMU318-SB18-02	SWMU318-SB18-03	SWMU318-SB19-05	SWMU318-SB20-02	SWMU318-SB20-04	SWMU318-SB21-02
Date	2/5/2005	2/5/2005	2/7/2005	2/7/2005	2/7/2005	2/4/2005	2/3/2005	2/3/2005	2/3/2005
Depth Range (ft bgs)	3-5	5-7	1-3	3-5	5-7	9-11	3-5	7-9	3-5
Volatile Organic Compounds (ug/kg)									
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
trans-1,3-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Vinyl Chloride	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Xylenes (total)	NA	NA	NA	NA	NA	NA	NA	NA	12 U
Semi Volatile Organic Compounds (ug/kg)									
1,1-Biphenyl	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
2,2'-Oxybis (1-chloropropane)	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
2,4,5-Trichlorophenol	1100 U	1100 U	NA	1100 U	1100 U	1100 U	1100 U	990 U	NA
2,4,6-Trichlorophenol	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
2,4-Dichlorophenol	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
2,4-Dimethylphenol	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
2,4-Dinitrophenol	1100 U	1100 U	NA	1100 U	1100 U	1100 U	1100 U	990 U	NA
2,4-Dinitrotoluene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
2,6-Dinitrotoluene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
2-Chloronaphthalene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
2-Chlorophenol	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
2-Methylnaphthalene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
2-Methylphenol	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
2-Nitroaniline	1100 U	1100 U	NA	1100 U	1100 U	1100 U	1100 U	990 U	NA
2-Nitrophenol	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
3,3'-Dichlorobenzidine	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
3-Nitroaniline	1100 U	1100 U	NA	1100 U	1100 U	1100 U	1100 U	990 U	NA
4,6-Dinitro-2-methyl-phenol	1100 U	1100 U	NA	1100 U	1100 U	1100 U	1100 U	990 U	NA
4-Bromophenyl Phenyl Ether	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
4-Chloro-3-methylphenol	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
4-Chloroaniline	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
4-Chlorophenyl Phenyl Ether	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
4-Methylphenol	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
4-Nitroanaline	1100 U	1100 U	NA	1100 U	1100 U	1100 U	1100 U	990 U	NA
4-Nitrophenol	1100 U	1100 U	NA	1100 U	1100 U	1100 U	1100 U	990 U	NA
Acenapthene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Acenapthylene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Acetophenone	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Anthracene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Atrazine	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Benzaldehyde	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Benzo(a)anthracene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Benzo(a)pyrene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Benzo(b)fluoranthene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Benzo(k)fluoranthene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Benzo[g,h,i]perylene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB17-02	SWMU318-SB17-03	SWMU318-SB18-01	SWMU318-SB18-02	SWMU318-SB18-03	SWMU318-SB19-05	SWMU318-SB20-02	SWMU318-SB20-04	SWMU318-SB21-02
Date	2/5/2005	2/5/2005	2/7/2005	2/7/2005	2/7/2005	2/4/2005	2/3/2005	2/3/2005	2/3/2005
Depth Range (ft bgs)	3-5	5-7	1-3	3-5	5-7	9-11	3-5	7-9	3-5
Bis(2-chloroethoxy) methane	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Bis(2-chloroethyl) ether	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Bis(2-ethylhexyl) phthalate	420 U	460 U	NA	420 U	450 U	420 U	420 U	300 J	NA
Butyl benzyl phthalate	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Semi Volatile Organic Compounds (ug/kg)									
Caprolactam	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Carbazole	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Chrysene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Di-n-butyl phthalate	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Di-n-octylphthalate	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Dibenzo(a,h) anthracene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Dibenzofuran	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Diethyl phthalate	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Dimethyl phthalate	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Fluoranthene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Fluorene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Hexachlorobenzene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Hexachlorobutadiene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Hexachlorocyclopentadiene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Hexachloroethane	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Indeno(1,2,3-cd) pyrene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Isophorone	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Napthalene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Nitrobenzene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
n-Nitroso-di-n-propylamine	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
n-Nitrosodiphenylamine	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	1100 U	1100 U	NA	1100 U	1100 U	1100 U	1100 U	990 U	NA
Phenanthrene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Phenol	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Pyrene	420 U	460 U	NA	420 U	450 U	420 U	420 U	400 U	NA
Metals (mg/kg)									
Arsenic	5.3 U	20.8	NA	9.9	4.7 U	8 U	2.6 U	2.6 U	2.5 U
Barium	12.1 J	18.7 J	NA	17.6 J	19.5 J	14.6 J	26.4 J	26.9 J	26 J
Cadmium	0.14 U	0.06 U	NA	0.06 U	0.15 U	0.06 U	0.07 U	0.09 U	0.2 U
Chromium	19.1	31.1	NA	22.9	24	9.3	18.1	12.8	12.9
Lead	10	12.2	NA	11.2	10.7	5	16.5	14.7	13.2
Mercury	0.11 U	0.04 U	NA	0.07 U	0.04 U	0.03 U	0.16 U	0.08 U	0.08 U
Selenium	1.8 U	1 U	NA	0.77 U	1.5 U	0.94 U	0.82 U	1.5 U	0.78 U
Silver	0.33 U	0.14 U	NA	0.14 U	0.15 U	0.1 U	0.15 U	0.15 U	0.15 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB21-04	SWMU318-SB22-03	SWMU318-SB22-04	SWMU318-SB23-02	SWMU318-SB23-04	SWMU318-SB24-03	SWMU318-SB25-02	SWMU318-SB25-02D
Date	2/3/2005	2/7/2005	2/7/2005	2/3/2005	2/3/2005	2/7/2005	2/8/2005	2/8/2005
Depth Range (ft bgs)	7-9	5-7	7-9	3-5	7-9	5-7	3-5	3-5
Volatile Organic Compounds (ug/kg)								
1,1,1-trichloroethane	NA	NA	NA	11 U	NA	NA	NA	NA
1,1,2,2-tetrachloroethane	NA	NA	NA	11 U	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	NA	NA	11 U	NA	NA	NA	NA
1,1,2-trichloroethane	NA	NA	NA	11 U	NA	NA	NA	NA
1,1-dichloroethane	NA	NA	NA	11 U	NA	NA	NA	NA
1,1-dichloroethene	NA	NA	NA	11 U	NA	NA	NA	NA
1,2,4-trichlorobenzene	NA	NA	NA	11 U	NA	NA	NA	NA
1,2-dibromo-3-chloropropane	NA	NA	NA	11 U	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	11 U	NA	NA	NA	NA
1,2-dichlorobenzene	NA	NA	NA	11 U	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	NA	11 U	NA	NA	NA	NA
1,2-Dichloroethylene (total)	NA	NA	NA	11 U	NA	NA	NA	NA
1,2-dichloropropane	NA	NA	NA	11 U	NA	NA	NA	NA
1,3-dichlorobenzene	NA	NA	NA	11 U	NA	NA	NA	NA
1,4-dichlorobenzene	NA	NA	NA	11 U	NA	NA	NA	NA
2-butanone	NA	NA	NA	11 U	NA	NA	NA	NA
2-hexanone	NA	NA	NA	11 U	NA	NA	NA	NA
4-methyl-2-pentanone	NA	NA	NA	11 U	NA	NA	NA	NA
Acetone	NA	NA	NA	8 J	NA	NA	NA	NA
Benzene	NA	NA	NA	11 U	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	11 U	NA	NA	NA	NA
Bromoform	NA	NA	NA	11 U	NA	NA	NA	NA
Bromomethane	NA	NA	NA	11 U	NA	NA	NA	NA
Carbon Disulfide	NA	NA	NA	11 U	NA	NA	NA	NA
Carbon Tetrachloride	NA	NA	NA	11 U	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	11 U	NA	NA	NA	NA
Chloroethane	NA	NA	NA	11 U	NA	NA	NA	NA
Chloroform	NA	NA	NA	11 U	NA	NA	NA	NA
Chloromethane	NA	NA	NA	11 U	NA	NA	NA	NA
cis-1,2-Dichloroethane	NA	NA	NA	11 U	NA	NA	NA	NA
cis-1,2-Dichloropropene	NA	NA	NA	11 U	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	11 U	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	11 U	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	11 U	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	11 U	NA	NA	NA	NA
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	11 U	NA	NA	NA	NA
M-,P-Xylene	NA	NA	NA	11 U	NA	NA	NA	NA
Methyl Acetate	NA	NA	NA	11 U	NA	NA	NA	NA
Methyl Tert-Butyl Ether	NA	NA	NA	11 U	NA	NA	NA	NA
Methylcyclohexane	NA	NA	NA	11 U	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	15 U	NA	NA	NA	NA
Napthalene	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB21-04	SWMU318-SB22-03	SWMU318-SB22-04	SWMU318-SB23-02	SWMU318-SB23-04	SWMU318-SB24-03	SWMU318-SB25-02	SWMU318-SB25-02D
Date	2/3/2005	2/7/2005	2/7/2005	2/3/2005	2/3/2005	2/7/2005	2/8/2005	2/8/2005
Depth Range (ft bgs)	7-9	5-7	7-9	3-5	7-9	5-7	3-5	3-5
Volatile Organic Compounds (ug/kg)								
o-Xylene	NA	NA	NA	11 U	NA	NA	NA	NA
Styrene	NA	NA	NA	11 U	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	11 U	NA	NA	NA	NA
Toluene	NA	NA	NA	11 U	NA	NA	NA	NA
trans-1,3-Dichloroethene	NA	NA	NA	11 U	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	11 U	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	11 U	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	11 U	NA	NA	NA	NA
Vinyl Chloride	NA	NA	NA	11 U	NA	NA	NA	NA
Xylenes (total)	NA	NA	NA	11 U	NA	NA	NA	NA
Semi Volatile Organic Compounds (ug/kg)								
1,1-Biphenyl	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
2,2'-Oxybis (1-chloropropane)	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
2,4,5-Trichlorophenol	1000 U	1000 U	1000 U	990 U	NA	1100 U	970 U	910 U
2,4,6-Trichlorophenol	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
2,4-Dichlorophenol	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
2,4-Dimethylphenol	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
2,4-Dinitrophenol	1000 U	1000 U	1000 U	990 U	NA	1100 U	970 U	910 U
2,4-Dinitrotoluene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
2,6-Dinitrotoluene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
2-Chloronaphthalene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
2-Chlorophenol	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
2-Methylnaphthalene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
2-Methylphenol	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
2-Nitroaniline	1000 U	1000 U	1000 U	990 U	NA	1100 U	970 U	910 U
2-Nitrophenol	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
3,3'-Dichlorobenzidine	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
3-Nitroaniline	1000 U	1000 U	1000 U	990 U	NA	1100 U	970 U	910 U
4,6-Dinitro-2-methyl-phenol	1000 U	1000 U	1000 U	990 U	NA	1100 U	970 U	910 U
4-Bromophenyl Phenyl Ether	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
4-Chloro-3-methylphenol	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
4-Chloroaniline	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
4-Chlorophenyl Phenyl Ether	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
4-Methylphenol	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
4-Nitroanaline	1000 U	1000 U	1000 U	990 U	NA	1100 U	970 U	910 U
4-Nitrophenol	1000 U	1000 U	1000 U	990 U	NA	1100 U	970 U	910 U
Acenapthene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Acenapthylene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Acetophenone	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Anthracene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Atrazine	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Benzaldehyde	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Benzo(a)anthracene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Benzo(a)pyrene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Benzo(b)fluoranthene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Benzo(k)fluoranthene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Benzo[g,h,i]perylene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB21-04	SWMU318-SB22-03	SWMU318-SB22-04	SWMU318-SB23-02	SWMU318-SB23-04	SWMU318-SB24-03	SWMU318-SB25-02	SWMU318-SB25-02D
Date	2/3/2005	2/7/2005	2/7/2005	2/3/2005	2/3/2005	2/7/2005	2/8/2005	2/8/2005
Depth Range (ft bgs)	7-9	5-7	7-9	3-5	7-9	5-7	3-5	3-5
Bis(2-chloroethoxy) methane	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Bis(2-chloroethyl) ether	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Bis(2-ethylhexyl) phthalate	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Butyl benzyl phthalate	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Semi Volatile Organic Compounds (ug/kg)								
Caprolactam	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Carbazole	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Chrysene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Di-n-butyl phthalate	420 U	420 U	400 U	400 U	NA	1,200	380 U	360 U
Di-n-octylphthalate	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Dibenzo(a,h) anthracene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Dibenzofuran	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Diethyl phthalate	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Dimethyl phthalate	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Fluoranthene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Fluorene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Hexachlorobenzene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Hexachlorobutadiene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Hexachlorocyclopentadiene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Hexachloroethane	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Indeno(1,2,3-cd) pyrene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Isophorone	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Napthalene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Nitrobenzene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
n-Nitroso-di-n-propylamine	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
n-Nitrosodiphenylamine	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	1000 U	1000 U	1000 U	990 U	NA	1100 U	970 U	910 U
Phenanthrene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Phenol	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Pyrene	420 U	420 U	400 U	400 U	NA	420 U	380 U	360 U
Metals (mg/kg)								
Arsenic	NA	2 U	1.8 U	2.2 U	2.3 U	4 U	1.2 U	0.59 U
Barium	NA	25.5 J	23.2 J	21.4 J	21.8 J	28.6 J	9.2 J	7.9 J
Cadmium	NA	0.06 U	0.05 U	0.27 U	0.06 U	0.06 U	0.06 U	0.21 U
Chromium	NA	12	12.8	8.6	14.5	20.1	2.5 U	7.8
Lead	NA	11.4	8.2	17.4	15.2	14.4	3 U	2.3 U
Mercury	NA	0.06 U	0.01 U	0.07 U	0.11 U	0.1 U	0.04 U	0.03 U
Selenium	NA	1.8 U	0.61 U	0.64 U	0.72 U	1.2 U	0.76 U	1.8 U
Silver	NA	0.14 U	0.12 U	0.12 U	0.14 U	1.7 U	0.14 U	0.14 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB25-04	SWMU318-SB25-04D	SWMU318-SB26-01	SWMU318-SB26-02	SWMU318-SB27-02	SWMU318-SB27-02D	SWMU318-SB27-03	SWMU318-SB28-02
Date	2/8/2005	2/8/2005	2/4/2005	2/4/2005	2/7/2005	2/7/2005	2/7/2005	2/8/2005
Depth Range (ft bgs)	7-9	7-9	1-3	3-5	3-5	3-5	5-7	3-5
Volatile Organic Compounds (ug/kg)								
1,1,1-trichloroethane	NA	NA	NA	12 U	NA	NA	NA	NA
1,1,2,2-tetrachloroethane	NA	NA	NA	12 U	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	NA	NA	12 U	NA	NA	NA	NA
1,1,2-trichloroethane	NA	NA	NA	12 U	NA	NA	NA	NA
1,1-dichloroethane	NA	NA	NA	12 U	NA	NA	NA	NA
1,1-dichloroethene	NA	NA	NA	12 U	NA	NA	NA	NA
1,2,4-trichlorobenzene	NA	NA	NA	12 U	NA	NA	NA	NA
1,2-dibromo-3-chloropropane	NA	NA	NA	12 U	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	12 U	NA	NA	NA	NA
1,2-dichlorobenzene	NA	NA	NA	12 U	NA	NA	NA	NA
1,2-dichloroethane	NA	NA	NA	12 U	NA	NA	NA	NA
1,2-Dichloroethylene (total)	NA	NA	NA	21	NA	NA	NA	NA
1,2-dichloropropane	NA	NA	NA	12 U	NA	NA	NA	NA
1,3-dichlorobenzene	NA	NA	NA	12 U	NA	NA	NA	NA
1,4-dichlorobenzene	NA	NA	NA	12 U	NA	NA	NA	NA
2-butanone	NA	NA	NA	12 U	NA	NA	NA	NA
2-hexanone	NA	NA	NA	12 U	NA	NA	NA	NA
4-methyl-2-pentanone	NA	NA	NA	12 U	NA	NA	NA	NA
Acetone	NA	NA	NA	10 J	NA	NA	NA	NA
Benzene	NA	NA	NA	12 U	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	12 U	NA	NA	NA	NA
Bromoform	NA	NA	NA	12 U	NA	NA	NA	NA
Bromomethane	NA	NA	NA	12 U	NA	NA	NA	NA
Carbon Disulfide	NA	NA	NA	12 U	NA	NA	NA	NA
Carbon Tetrachloride	NA	NA	NA	12 U	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	12 U	NA	NA	NA	NA
Chloroethane	NA	NA	NA	12 U	NA	NA	NA	NA
Chloroform	NA	NA	NA	12 U	NA	NA	NA	NA
Chloromethane	NA	NA	NA	12 U	NA	NA	NA	NA
cis-1,2-Dichloroethane	NA	NA	NA	18	NA	NA	NA	NA
cis-1,2-Dichloropropene	NA	NA	NA	12 U	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	12 U	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	12 U	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	12 U	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	12 U	NA	NA	NA	NA
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	12 U	NA	NA	NA	NA
M-,P-Xylene	NA	NA	NA	12 U	NA	NA	NA	NA
Methyl Acetate	NA	NA	NA	12 U	NA	NA	NA	NA
Methyl Tert-Butyl Ether	NA	NA	NA	12 U	NA	NA	NA	NA
Methylcyclohexane	NA	NA	NA	12 U	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	16 U	NA	NA	NA	NA
Napthalene	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB25-04	SWMU318-SB25-04D	SWMU318-SB26-01	SWMU318-SB26-02	SWMU318-SB27-02	SWMU318-SB27-02D	SWMU318-SB27-03	SWMU318-SB28-02
Date	2/8/2005	2/8/2005	2/4/2005	2/4/2005	2/7/2005	2/7/2005	2/7/2005	2/8/2005
Depth Range (ft bgs)	7-9	7-9	1-3	3-5	3-5	3-5	5-7	3-5
Volatile Organic Compounds (ug/kg)								
o-Xylene	NA	NA	NA	12 U	NA	NA	NA	NA
Styrene	NA	NA	NA	12 U	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	12 U	NA	NA	NA	NA
Toluene	NA	NA	NA	12 U	NA	NA	NA	NA
trans-1,3-Dichloroethene	NA	NA	NA	3 J	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	12 U	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	12 U	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	12 U	NA	NA	NA	NA
Vinyl Chloride	NA	NA	NA	12 U	NA	NA	NA	NA
Xylenes (total)	NA	NA	NA	12 U	NA	NA	NA	NA
Semi Volatile Organic Compounds (ug/kg)								
1,1-Biphenyl	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
2,2'-Oxybis (1-chloropropane)	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
2,4,5-Trichlorophenol	1200 U	1200 U	1000 U	1100 U	1100 U	1000 U	1200 U	1000 U
2,4,6-Trichlorophenol	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
2,4-Dichlorophenol	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
2,4-Dimethylphenol	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
2,4-Dinitrophenol	1200 U	1200 U	1000 U	1100 U	1100 U	1000 U	1200 U	1000 U
2,4-Dinitrotoluene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
2,6-Dinitrotoluene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
2-Chloronaphthalene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
2-Chlorophenol	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
2-Methylnaphthalene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
2-Methylphenol	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
2-Nitroaniline	1200 U	1200 U	1000 U	1100 U	1100 U	1000 U	1200 U	1000 U
2-Nitrophenol	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
3,3'-Dichlorobenzidine	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
3-Nitroaniline	1200 U	1200 U	1000 U	1100 U	1100 U	1000 U	1200 U	1000 U
4,6-Dinitro-2-methyl-phenol	1200 U	1200 U	1000 U	1100 U	1100 U	1000 U	1200 U	1000 U
4-Bromophenyl Phenyl Ether	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
4-Chloro-3-methylphenol	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
4-Chloroaniline	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
4-Chlorophenyl Phenyl Ether	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
4-Methylphenol	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
4-Nitroanaline	1200 U	1200 U	1000 U	1100 U	1100 U	1000 U	1200 U	1000 U
4-Nitrophenol	1200 U	1200 U	1000 U	1100 U	1100 U	1000 U	1200 U	1000 U
Acenapthene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Acenapthylene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Acetophenone	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Anthracene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Atrazine	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Benzaldehyde	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Benzo(a)anthracene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Benzo(a)pyrene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Benzo(b)fluoranthene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Benzo(k)fluoranthene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Benzo[g,h,i]perylene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB25-04	SWMU318-SB25-04D	SWMU318-SB26-01	SWMU318-SB26-02	SWMU318-SB27-02	SWMU318-SB27-02D	SWMU318-SB27-03	SWMU318-SB28-02
Date	2/8/2005	2/8/2005	2/4/2005	2/4/2005	2/7/2005	2/7/2005	2/7/2005	2/8/2005
Depth Range (ft bgs)	7-9	7-9	1-3	3-5	3-5	3-5	5-7	3-5
Bis(2-chloroethoxy) methane	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Bis(2-chloroethyl) ether	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Bis(2-ethylhexyl) phthalate	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Butyl benzyl phthalate	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Semi Volatile Organic Compounds (ug/kg)								
Caprolactam	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Carbazole	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Chrysene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Di-n-butyl phthalate	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Di-n-octylphthalate	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Dibenzo(a,h) anthracene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Dibenzofuran	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Diethyl phthalate	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Dimethyl phthalate	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Fluoranthene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Fluorene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Hexachlorobenzene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Hexachlorobutadiene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Hexachlorocyclopentadiene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Hexachloroethane	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Indeno(1,2,3-cd) pyrene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Isophorone	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Napthalene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Nitrobenzene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
n-Nitroso-di-n-propylamine	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
n-Nitrosodiphenylamine	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	1200 U	1200 U	1000 U	1100 U	1100 U	1000 U	1200 U	1000 U
Phenanthrene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Phenol	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Pyrene	500 U	490 U	410 U	430 U	420 U	420 U	470 U	400 U
Metals (mg/kg)								
Arsenic	6 U	2.5 U	2.6 U	5 U	7.2 U	2 U	17 U	1.4 U
Barium	29.8 J	30.1 J	15.1 J	25.2 J	22.5 J	20 J	27.4 J	14.1 J
Cadmium	0.07 U	0.09 U	0.12 U	0.05 U	0.06 U	0.06 U	0.06 U	0.05 U
Chromium	34.5	36.3	7.7	25.8	21	21.2	36.5	5.2
Lead	16.8	17.1	5.2	14.4	13.4	12.4	14.9	6.9
Mercury	0.13 U	0.11 U	0.07 U	0.11 U	0.09 U	0.08 U	0.06 U	0.06 U
Selenium	1.3 U	0.99 U	0.8 U	1 U	1.4 U	0.76 U	1.1 U	0.59 U
Silver	0.16 U	0.11 U	0.15 U	0.12 U	0.16 U	0.14 U	0.28 U	0.11 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB28-02D	SWMU318-SB28-04	SWMU318-SB28-04D
Date	2/8/2005	2/8/2005	2/8/2005
Depth Range (ft bgs)	3-5	7-9	7-9
Volatile Organic Compounds (ug/kg)			
1,1,1-trichloroethane	NA	NA	NA
1,1,2,2-tetrachloroethane	NA	NA	NA
1,1,2-Trichloro-1,2,2-Trifluoroethane	NA	NA	NA
1,1,2-trichloroethane	NA	NA	NA
1,1-dichloroethane	NA	NA	NA
1,1-dichloroethene	NA	NA	NA
1,2,4-trichlorobenzene	NA	NA	NA
1,2-dibromo-3-chloropropane	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA
1,2-dichlorobenzene	NA	NA	NA
1,2-dichloroethane	NA	NA	NA
1,2-Dichloroethylene (total)	NA	NA	NA
1,2-dichloropropane	NA	NA	NA
1,3-dichlorobenzene	NA	NA	NA
1,4-dichlorobenzene	NA	NA	NA
2-butanone	NA	NA	NA
2-hexanone	NA	NA	NA
4-methyl-2-pentanone	NA	NA	NA
Acetone	NA	NA	NA
Benzene	NA	NA	NA
Bromodichloromethane	NA	NA	NA
Bromoform	NA	NA	NA
Bromomethane	NA	NA	NA
Carbon Disulfide	NA	NA	NA
Carbon Tetrachloride	NA	NA	NA
Chlorobenzene	NA	NA	NA
Chloroethane	NA	NA	NA
Chloroform	NA	NA	NA
Chloromethane	NA	NA	NA
cis-1,2-Dichloroethane	NA	NA	NA
cis-1,2-Dichloropropene	NA	NA	NA
Cyclohexane	NA	NA	NA
Dibromochloromethane	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA
Ethylbenzene	NA	NA	NA
Ethylene Dibromide	NA	NA	NA
Isopropylbenzene	NA	NA	NA
M-,P-Xylene	NA	NA	NA
Methyl Acetate	NA	NA	NA
Methyl Tert-Butyl Ether	NA	NA	NA
Methylcyclohexane	NA	NA	NA
Methylene chloride	NA	NA	NA
Napthalene	NA	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB28-02D	SWMU318-SB28-04	SWMU318-SB28-04D
Date	2/8/2005	2/8/2005	2/8/2005
Depth Range (ft bgs)	3-5	7-9	7-9
Volatile Organic Compounds (ug/kg)			
o-Xylene	NA	NA	NA
Styrene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Toluene	NA	NA	NA
trans-1,3-Dichloroethene	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA
Trichloroethene	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA
Vinyl Chloride	NA	NA	NA
Xylenes (total)	NA	NA	NA
Semi Volatile Organic Compounds (ug/kg)			
1,1-Biphenyl	410 U	420 U	450 U
2,2'-Oxybis (1-chloropropane)	410 U	420 U	450 U
2,4,5-Trichlorophenol	1000 U	1100 U	1100 U
2,4,6-Trichlorophenol	410 U	420 U	450 U
2,4-Dichlorophenol	410 U	420 U	450 U
2,4-Dimethylphenol	410 U	420 U	450 U
2,4-Dinitrophenol	1000 U	1100 U	1100 U
2,4-Dinitrotoluene	410 U	420 U	450 U
2,6-Dinitrotoluene	410 U	420 U	450 U
2-Chloronaphthalene	410 U	420 U	450 U
2-Chlorophenol	410 U	420 U	450 U
2-Methylnaphthalene	410 U	420 U	450 U
2-Methylphenol	410 U	420 U	450 U
2-Nitroaniline	1000 U	1100 U	1100 U
2-Nitrophenol	410 U	420 U	450 U
3,3'-Dichlorobenzidine	410 U	420 U	450 U
3-Nitroaniline	1000 U	1100 U	1100 U
4,6-Dinitro-2-methyl-phenol	1000 U	1100 U	1100 U
4-Bromophenyl Phenyl Ether	410 U	420 U	450 U
4-Chloro-3-methylphenol	410 U	420 U	450 U
4-Chloroaniline	410 U	420 U	450 U
4-Chlorophenyl Phenyl Ether	410 U	420 U	450 U
4-Methylphenol	410 U	420 U	450 U
4-Nitroanaline	1000 U	1100 U	1100 U
4-Nitrophenol	1000 U	1100 U	1100 U
Acenapthene	410 U	420 U	450 U
Acenapthylene	410 U	420 U	450 U
Acetophenone	410 U	420 U	450 U
Anthracene	410 U	420 U	450 U
Atrazine	410 U	420 U	450 U
Benzaldehyde	410 U	420 U	450 U
Benzo(a)anthracene	410 U	420 U	450 U
Benzo(a)pyrene	410 U	420 U	450 U
Benzo(b)fluoranthene	410 U	420 U	450 U
Benzo(k)fluoranthene	410 U	420 U	450 U
Benzo[g,h,i]perylene	410 U	420 U	450 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-SB28-02D	SWMU318-SB28-04	SWMU318-SB28-04D
Date	2/8/2005	2/8/2005	2/8/2005
Depth Range (ft bgs)	3-5	7-9	7-9
Bis(2-chloroethoxy) methane	410 U	420 U	450 U
Bis(2-chloroethyl) ether	410 U	420 U	450 U
Bis(2-ethylhexyl) phthalate	410 U	420 U	450 U
Butyl benzyl phthalate	410 U	420 U	450 U
Semi Volatile Organic Compounds (ug/kg)			
Caprolactam	410 U	420 U	450 U
Carbazole	410 U	420 U	450 U
Chrysene	410 U	420 U	450 U
Di-n-butyl phthalate	410 U	1,100	450 U
Di-n-octylphthalate	410 U	420 U	450 U
Dibenzo(a,h) anthracene	410 U	420 U	450 U
Dibenzofuran	410 U	420 U	450 U
Diethyl phthalate	410 U	420 U	450 U
Dimethyl phthalate	410 U	420 U	450 U
Fluoranthene	410 U	420 U	450 U
Fluorene	410 U	420 U	450 U
Hexachlorobenzene	410 U	420 U	450 U
Hexachlorobutadiene	410 U	420 U	450 U
Hexachlorocyclopentadiene	410 U	420 U	450 U
Hexachloroethane	410 U	420 U	450 U
Indeno(1,2,3-cd) pyrene	410 U	420 U	450 U
Isophorone	410 U	420 U	450 U
Napthalene	410 U	420 U	450 U
Nitrobenzene	410 U	420 U	450 U
n-Nitroso-di-n-propylamine	410 U	420 U	450 U
n-Nitrosodiphenylamine	410 U	420 U	450 U
Nitrobenzene	NA	NA	NA
Pentachlorophenol	1000 U	1100 U	1100 U
Phenanthrene	410 U	420 U	450 U
Phenol	410 U	420 U	450 U
Pyrene	410 U	420 U	450 U
Metals (mg/kg)			
Arsenic	1.6 U	12.2	3.6 U
Barium	15.2 J	17.9 J	26.2 J
Cadmium	0.08 U	0.43 U	0.07 U
Chromium	6	22	22.6
Lead	6.5	11.8	14.5
Mercury	0.05 U	0.08 U	0.08 U
Selenium	0.9 U	2.1 U	0.73 U
Silver	0.13 U	0.12 U	0.14 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SHALLOW GROUNDWATER, SWMUs 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW01	SWMU318-GW02	SWMU318-GW02D	SWMU318-GW03	SWMU318-GW04	SWMU318-GW05	SWMU318-GW07	SWMU318-GW10	SWMU318-GW13	SWMU318-GW15
Sample Date	3/19/2004	3/17/2004	3/17/2004	3/18/2004	3/18/2004	3/17/2004	3/18/2004	3/20/2004	3/20/2004	3/22/2004
Sample Depth (ft bgs)	12-16	10-14	10-14	12-16	12-16	10-14	10-14	15-19	12-16	12-16
Volatile Organic Compounds (ug/L)										
1,1,1-Trichloroethane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
1,1,2,2-Tetrachloroethane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	10 U	NA	NA	NA	NA	NA	10 U	NA	54	NA
1,1,2-Trichloroethane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
1,1-Dichloroethane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
1,1-Dichloroethene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
1,2,4-Trichlorobenzene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
1,2-Dibromo-3-chloropropane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 R	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
1,2-Dichloroethane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
1,2-Dichloroethylene	2 J	NA	NA	NA	NA	NA	10 U	NA	19	NA
1,2-Dichloropropane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
1,3-Dichlorobenzene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
1,4-Dichlorobenzene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
2-Butanone	10 UJ	NA	NA	NA	NA	NA	10 UJ	NA	10 U	NA
2-Hexanone	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
4-Methyl-2-pentanone	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Acetone	10 UJ	NA	NA	NA	NA	NA	10 UJ	NA	10 U	NA
Benzene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Bromodichloromethane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Bromoform	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Bromomethane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Carbon Disulfide	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Carbon Tetrachloride	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Chlorobenzene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Chloroethane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Chloroform	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Chloromethane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
cis-1,2-Dichloroethene	2 J	NA	NA	NA	NA	NA	10 U	NA	19	NA
cis-1,3-Dichloropropene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Cyclohexane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Dibromochloromethane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Dichlorodifluoromethane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Ethylbenzene	1 J	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Ethylene dibromide	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Isopropylbenzene	2 J	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
m-,p- Xylene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Methyl acetate	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Methyl-tert-butyl ether (MTBE)	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Methylcylcohexane	1 J	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Metheylene chloride	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
o-Xylene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Styrene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Tetrachloroethene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Toluene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
trans-1,2-Dichloroethene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
trans-1,3-Dichloropropene	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SHALLOW GROUNDWATER, SWMUs 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW01	SWMU318-GW02	SWMU318-GW02D	SWMU318-GW03	SWMU318-GW04	SWMU318-GW05	SWMU318-GW07	SWMU318-GW10	SWMU318-GW13	SWMU318-GW15
Sample Date	3/19/2004	3/17/2004	3/17/2004	3/18/2004	3/18/2004	3/17/2004	3/18/2004	3/20/2004	3/20/2004	3/22/2004
Sample Depth (ft bgs)	12-16	10-14	10-14	12-16	12-16	10-14	10-14	15-19	12-16	12-16
Volatile Organic Compounds (ug/L)										
Trichloroethene	10 U	NA	NA	NA	NA	NA	10 U	NA	57	NA
Trichlorofluoromethane	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Vinyl chloride	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Xylenes (total)	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U	NA
Semivolatile Organic Compounds (ug/L)										
1,1'-Biphenyl	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	27
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	21
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
2-Chloronapthalene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
2-Methylnapthalene	10 U	10 U	10 U	10 U	8 J	10 U	NA	10 U	10 U	130 D
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 UJ	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 UJ
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
4-Bromophenyl phenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
4-Chlorophenyl phenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
4-Nitroaniline	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ	NA	25 UJ	25 UJ	25 UJ
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
Acenapthene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	130 D
Acenapthylene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Acetophenone	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Antracene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Atrazine	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Benzaldehyde	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Benzo[g,h,i]perylene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Bis(2-chloroethoxy) methane	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Bis(2-chloroethyl) ether	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Bis(2-ethylhexyl) phthalate	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Butyl benzyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Caprolactam	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	44
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SHALLOW GROUNDWATER, SWMUs 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW01	SWMU318-GW02	SWMU318-GW02D	SWMU318-GW03	SWMU318-GW04	SWMU318-GW05	SWMU318-GW07	SWMU318-GW10	SWMU318-GW13	SWMU318-GW15
Sample Date	3/19/2004	3/17/2004	3/17/2004	3/18/2004	3/18/2004	3/17/2004	3/18/2004	3/20/2004	3/20/2004	3/22/2004
Sample Depth (ft bgs)	12-16	10-14	10-14	12-16	12-16	10-14	10-14	15-19	12-16	12-16
Semivolatile Organic Compounds (ug/L)										
Di-n-butyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Di-n-octylphalate	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	68
Diethyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Dimethyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	49
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	NA	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
n-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
n-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Napthalene	9 J	10 U	10 U	10 U	12	10 U	NA	10 U	10 U	340 D
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	11
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
Total Metals (ug/L)										
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SHALLOW GROUNDWATER, SWMUs 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW17	SWMU318-GW31	SWMU318-GW32	SWMU318-GW33	SWMU318-GW34	SWMU318-GW35	SWMU318-GW36	SWMU318-GW37	SWMU318-GW38	SWMU318-MW07-05A
Sample Date	6/23/2004	2/3/2005	2/3/2005	2/4/2005	2/2/2005	2/5/2005	2/3/2005	2/3/2005	2/2/2005	2/19/2005
Sample Depth (ft bgs)	10-14	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	14-24
Volatile Organic Compounds (ug/L)										
1,1,1-Trichloroethane	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
1,1,2,2-Tetrachloroethane	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
1,1,2-Trichloroethane	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
1,1-Dichloroethane	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	1 J
1,1-Dichloroethene	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
1,2,4-Trichlorobenzene	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
1,2-Dibromo-3-chloropropane	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
1,2-Dibromoethane	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
1,2-Dichlorobenzene	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
1,2-Dichloroethane	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
1,2-Dichloroethylene	0.9 J	10 U	NA	NA	NA	NA	NA	2 J	NA	5 J
1,2-Dichloropropane	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
1,3-Dichlorobenzene	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
1,4-Dichlorobenzene	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
2-Butanone	5 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
2-Hexanone	5 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
4-Methyl-2-pentanone	5 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Acetone	5 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Benzene	1 U	10 U	NA	NA	NA	NA	NA	17	NA	2 J
Bromodichloromethane	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Bromoform	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Bromomethane	2 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Carbon Disulfide	0.4 J	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Carbon Tetrachloride	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Chlorobenzene	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Chloroethane	2 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Chloroform	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Chloromethane	2 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
cis-1,2-Dichloroethene	0.9 J	10 U	NA	NA	NA	NA	NA	2 J	NA	5 J
cis-1,3-Dichloropropene	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Cyclohexane	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Dibromochloromethane	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Dichlorodifluoromethane	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Ethylbenzene	1 U	10 U	NA	NA	NA	NA	NA	15	NA	10 U
Ethylene dibromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
m-,p- Xylene	2 U	10 U	NA	NA	NA	NA	NA	32	NA	10 U
Methyl acetate	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Methyl-tert-butyl ether (MTBE)	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Methylcylcohexane	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Metheylene chloride	2 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
o-Xylene	1 U	10 U	NA	NA	NA	NA	NA	15	NA	10 U
Styrene	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Tetrachloroethene	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Toluene	3	10 U	NA	NA	NA	NA	NA	12	NA	10 U
trans-1,2-Dichloroethene	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
trans-1,3-Dichloropropene	1 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SHALLOW GROUNDWATER, SWMUs 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW17	SWMU318-GW31	SWMU318-GW32	SWMU318-GW33	SWMU318-GW34	SWMU318-GW35	SWMU318-GW36	SWMU318-GW37	SWMU318-GW38	SWMU318-MW07-05A
Sample Date	6/23/2004	2/3/2005	2/3/2005	2/4/2005	2/2/2005	2/5/2005	2/3/2005	2/3/2005	2/2/2005	2/19/2005
Sample Depth (ft bgs)	10-14	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	14-24
Volatile Organic Compounds (ug/L)										
Trichloroethene	0.3 J	10 U	NA	NA	NA	NA	NA	10 U	NA	13
Trichlorofluoromethane	NA	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Vinyl chloride	2 U	10 U	NA	NA	NA	NA	NA	10 U	NA	10 U
Xylenes (total)	3 U	10 U	NA	NA	NA	NA	NA	47	NA	10 U
Semivolatile Organic Compounds (ug/L)										
1,1'-Biphenyl	NA	10 U	10 U	10 U	10 U	31	10 U	32	10 U	10 U
2,2'-Oxybis(1-chloropropane)	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	NA	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	NA	10 U	10 U	10 U	10 U	370 J	10 U	28 J	10 U	10 U
2,4-Dinitrophenol	NA	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronapthalene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnapthalene	NA	10 U	10 U	10 U	10 U	250	10 U	68	10 U	10 U
2-Methylphenol	NA	10 U	10 U	10 U	10 U	65	10 U	10 U	10 U	10 U
2-Nitroaniline	NA	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Nitrophenol	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	NA	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	NA	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Bromophenyl phenyl ether	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl phenyl ether	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	NA	10 U	10 U	10 U	10 U	46	10 U	10 U	10 U	10 U
4-Nitroaniline	NA	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	NA	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acenapthene	NA	10 U	10 U	10 U	10 U	240	10 U	72	10 U	10 U
Acenapthylene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetophenone	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Antracene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Atrazine	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzaldehyde	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy) methane	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl) ether	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl) phthalate	NA	10 U	10 U	10 U	9 J	6 J	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Caprolactam	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	NA	10 U	10 U	10 U	10 U	52	10 U	49	10 U	10 U
Chrysene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI SHALLOW GROUNDWATER, SWMUs 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW17	SWMU318-GW31	SWMU318-GW32	SWMU318-GW33	SWMU318-GW34	SWMU318-GW35	SWMU318-GW36	SWMU318-GW37	SWMU318-GW38	SWMU318-MW07-05A
Sample Date	6/23/2004	2/3/2005	2/3/2005	2/4/2005	2/2/2005	2/5/2005	2/3/2005	2/3/2005	2/2/2005	2/19/2005
Sample Depth (ft bgs)	10-14	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	14-24
Semivolatile Organic Compounds (ug/L)										
Di-n-butyl phthalate	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphalate	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NA	10 U	10 U	10 U	10 U	56	10 U	56	10 U	10 U
Diethyl phthalate	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	NA	10 U	10 U	10 U	10 U	49	10 U	50	10 U	10 U
Hexachlorobenzene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
n-Nitroso-di-n-propylamine	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
n-Nitrosodiphenylamine	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Napthalene	NA	10 U	8 J	10 U	10 U	1,200	10 U	430	10 U	10 U
Nitrobenzene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	NA	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	NA	10 U	10 U	10 U	10 U	20	10 U	18	10 U	10 U
Phenol	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total Metals (ug/L)										
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.81 U
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	89.5 J
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.41 U
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	1 U
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.07 U
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05 U
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.08 U
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.74 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-MW01	SWMU318-MW02	SWMU318-MW02D	SWMU318-MW03	SWMU318-MW03D	IR86-MW25IW	IR86-MW27
Sample Date	4/3/2004	4/4/2004	4/4/2004	4/4/2004	4/4/2004	4/4/2004	4/3/2004
Sample Depth (ft bgs)	20-30	20-30	20-30	20-30	20-30	20-30	20-30
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	10 U	10 U	NA	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	NA	10 U	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10 U	10 U	NA	180	160	630 D	24 J
1,1,2-Trichloroethane	10 U	10 U	NA	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	NA	10 U	10 U	53	10 U
1,1-Dichloroethene	10 U	2 J	NA	10 U	10 U	440 D	5 J
1,2,4-Trichlorobenzene	10 U	10 U	NA	10 U	10 U	10 U	10 U
1,2-Dibromo-3-chloropropane	10 U	10 U	NA	10 U	10 U	10 U	10 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	10 U	10 U	NA	10 U	10 U	73	10 U
1,2-Dichloroethane	10 U	10 U	NA	10 U	10 U	5 J	10 U
1,2-Dichloroethylene	1 J	120	NA	550 D	590 D	18	400 D
1,2-Dichloropropane	10 U	10 U	NA	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	NA	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	NA	10 U	10 U	10 U	10 U
2-Butanone	10 UJ	10 UJ	NA	10 UJ	10 UJ	10 UJ	10 UJ
2-Hexanone	10 UJ	10 UJ	NA	10 UJ	10 UJ	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	NA	10 U	10 U	10 U	10 U
Acetone	10 UJ	10 UJ	NA	10 UJ	10 UJ	10 UJ	10 U
Benzene	10 U	38	NA	1 J	10 U	10 U	5 J
Bromodichloromethane	10 U	10 U	NA	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	NA	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	NA	10 U	10 U	10 U	10 U
Carbon Disulfide	1 J	10 U	NA	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	NA	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	NA	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	NA	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	NA	10 U	10 U	10 U	10 U
Chloromethane	10 U	10 U	NA	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	1 J	120	NA	550 D	590 D	18	400 D
cis-1,3-Dichloropropene	10 U	10 U	NA	10 U	10 U	10 U	10 U
Cyclohexane	10 U	10 U	NA	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	NA	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	10 U	10 U	NA	10 U	10 U	11 U	10 U
Ethylbenzene	10 U	30	NA	3 J	3 J	3 J	10 U
Ethylene dibromide	10 U	10 U	NA	10 U	10 U	10 U	10 U
Isopropylbenzene	10 U	2 J	NA	1 J	10 U	1 J	10 U
m-,p- Xylene	10 U	19	NA	2 J	2 J	1 J	10 U
Methyl acetate	10 U	10 U	NA	10 U	10 U	10 U	10 U
Methyl-tert-butyl ether (MTBE)	10 U	10 U	NA	10 U	10 U	10 U	10 U
Methylcylcohexane	10 U	10 U	NA	12	10 U	10 U	10 U
Metheylene chloride	10 U	10 U	NA	10 U	10 U	10 U	10 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-MW01	SWMU318-MW02	SWMU318-MW02D	SWMU318-MW03	SWMU318-MW03D	IR86-MW25IW	IR86-MW27
Sample Date	4/3/2004	4/4/2004	4/4/2004	4/4/2004	4/4/2004	4/4/2004	4/3/2004
Sample Depth (ft bgs)	20-30	20-30	20-30	20-30	20-30	20-30	20-30
Volatile Organic Compounds (ug/L)							
o-Xylene	10 U	8 J	NA	5 J	5 J	3 J	10 U
Styrene	10 U	10 U	NA	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	NA	10 U	10 U	10 U	10 U
Toluene	10 U	10	NA	28	28	1 J	1 J
trans-1,2-Dichloroethene	10 U	2 J	NA	2 J	1 J	10 U	4 J
trans-1,3-Dichloropropene	10 U	10 U	NA	10 U	10 U	10 U	10 U
Trichloroethene	10 U	240 D	NA	960 D	1000 D	30	1200 D
Trichlorofluoromethane	10 U	10 U	NA	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	13	NA	96	88	2 J	78 J
Xylenes (total)	10 U	27	NA	7 J	7 J	4 J	10 U
Semivolatile Organic Compounds (ug/L)							
1,1'-Biphenyl	10 U	8 J	8 J	10 U	NA	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	NA	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	NA	25 U	25 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	NA	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	NA	10 U	10 U
2,4-Dimethylphenol	10 U	67	74	10 U	NA	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	NA	25 U	25 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	NA	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	NA	10 U	10 U
2-Chloronapthalene	10 U	10 U	10 U	10 U	NA	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	NA	10 U	10 U
2-Methylnapthalene	10 U	62	97 D	10 U	NA	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	NA	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	NA	25 U	25 U
2-Nitrophenol	10 U	10 U	10 U	10 U	NA	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	NA	10 U	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U	NA	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	NA	25 U	25 U
4-Bromophenyl phenyl ether	10 U	10 U	10 U	10 U	NA	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	NA	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	NA	10 U	10 U
4-Chlorophenyl phenyl ether	10 U	10 U	10 U	10 U	NA	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	NA	10 U	10 U
4-Nitroaniline	25 UJ	25 UJ	25 UJ	25 UJ	NA	25 UJ	25 UJ
4-Nitrophenol	25 U	25 U	25 U	25 U	NA	25 U	25 U
Acenapthene	10 U	35	32	10 U	NA	10 U	10 U
Acenapthylene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Acetophenone	10 U	10 U	10 U	10 U	NA	10 U	10 U
Antracene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Atrazine	10 U	10 U	10 U	10 U	NA	10 U	10 U
Benzaldehyde	10 U	10 U	10 U	10 U	NA	10 U	10 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-MW01	SWMU318-MW02	SWMU318-MW02D	SWMU318-MW03	SWMU318-MW03D	IR86-MW25IW	IR86-MW27
Sample Date	4/3/2004	4/4/2004	4/4/2004	4/4/2004	4/4/2004	4/4/2004	4/3/2004
Sample Depth (ft bgs)	20-30	20-30	20-30	20-30	20-30	20-30	20-30
Semivolatile Organic Compounds (ug/L)							
Benzo(a)anthracene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Benzo(b)fluoranthene	10 UJ	10 UJ	10 UJ	10 UJ	NA	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Benzo[g,h,i]perylene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Bis(2-chloroethoxy) methane	10 U	10 U	10 U	10 U	NA	10 U	10 U
Bis(2-chloroethyl) ether	10 U	10 U	10 U	10 U	NA	10 U	10 U
Bis(2-ethylhexyl) phthalate	10 U	10 U	10 U	10 U	NA	10 U	10 U
Butyl benzyl phthalate	10 U	10 U	10 U	10 U	NA	10 U	10 U
Caprolactam	10 U	10 U	10 U	10 U	NA	10 U	10 U
Carbazole	10 U	10	9 J	10 U	NA	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Di-n-butyl phthalate	10 U	10 U	10 U	10 U	NA	10 U	10 U
Di-n-octylphalate	10 U	10 U	10 U	10 U	NA	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Dibenzofuran	10 U	10	9 J	10 U	NA	10 U	10 U
Diethyl phthalate	10 U	10 U	10 U	10 U	NA	10 U	10 U
Dimethyl phthalate	10 U	10 U	10 U	10 U	NA	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Fluorene	10 U	9	8 J	10 U	NA	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	NA	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	NA	10 U	10 U
n-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	NA	10 U	10 U
n-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	NA	10 U	10 U
Napthalene	10 U	260 D	360 D	10 U	NA	15	14
Nitrobenzene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	NA	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Phenol	10 U	10 U	10 U	38	NA	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	NA	10 U	10 U
Total Metals (ug/L)							
Arsenic	3.1 J	3.03 U	NA	3.03 U	NA	3.03 U	3.03 U
Barium	26 J	7.1 J	NA	25.1 J	NA	5.9 B	4 B
Cadmium	0.3 U	0.3 U	NA	0.3 U	NA	0.3 U	0.3 U
Chromium	10 U	0.8 U	NA	10 U	NA	0.8 U	0.8 U
Lead	1.7 U	1.7 U	NA	1.7 U	NA	1.7 U	1.7 U
Mercury	0.01 U	0.01 U	NA	0.01 U	NA	0.01 U	0.01 U
Selenium	3.71 U	3.71 U	NA	3.71 U	NA	3.71 U	3.71 U
Silver	0.7 U	0.7 U	NA	0.7 U	NA	0.7 U	0.7 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	318-MW01-05A	318-MW02-05A	318-MW02D-05A	318-MW03-05A	318-MW04-05A	318-MW04D-05A	318-MW05-05A
Sample Date	2/15/2005	2/16/2005	2/16/2005	2/16/2005	2/17/2005	2/17/2005	2/17/2005
Sample Depth (ft bgs)	20-30	20-30	20-30	20-30	20-30	20-30	20-30
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10 U	10 U	10 U	140	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	1 J	10 U	10 U	10 U
1,1-Dichloroethene	10 U	3 J	3 J	3 J	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromoethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	1 J	1 J	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethylene	10 U	92	94	640	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	29	30	2 J	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	3 J	3 J	2 J
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	10 U	90	92	640	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	10 U	10 U	10 U	2 J	10 U	10 U	10 U
Ethylbenzene	10 U	20	20	5 J	10 U	10 U	10 U
Ethylene dibromide	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	10 U	1 J	1 J	10 U	10 U	10 U	10 U
m-,p- Xylene	10 U	9 J	9 J	4 J	10 U	10 U	10 U
Methyl acetate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-tert-butyl ether (MTBE)	10 U	10 U	10 U	10 U	3 J	4 J	10 U
Methylcylcohexane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Metheylene chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	318-MW01-05A	318-MW02-05A	318-MW02D-05A	318-MW03-05A	318-MW04-05A	318-MW04D-05A	318-MW05-05A
Sample Date	2/15/2005	2/16/2005	2/16/2005	2/16/2005	2/17/2005	2/17/2005	2/17/2005
Sample Depth (ft bgs)	20-30	20-30	20-30	20-30	20-30	20-30	20-30
Volatile Organic Compounds (ug/L)							
o-Xylene	10 U	3 J	3 J	5 J	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	5 J	5 J	26	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	2 J	2 J	1 J	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	79	78	940	10 U	10 U	10 U
Trichlorofluoromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	14	14	110	10 U	10 U	10 U
Xylenes (total)	10 U	12	12	9 J	10 U	10 U	10 U
Semivolatile Organic Compounds (ug/L)							
1,1'-Biphenyl	10 U	6 J	6 J	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	35	32	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronapthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnapthalene	10 U	34	37	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Bromophenyl phenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl phenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acenapthene	10 U	30	29	10 U	10 U	10 U	10 U
Acenapthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetophenone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Antracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Atrazine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzaldehyde	10 U	10 U	10 U	10 U	10 U	10 U	10 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	318-MW01-05A	318-MW02-05A	318-MW02D-05A	318-MW03-05A	318-MW04-05A	318-MW04D-05A	318-MW05-05A
Sample Date	2/15/2005	2/16/2005	2/16/2005	2/16/2005	2/17/2005	2/17/2005	2/17/2005
Sample Depth (ft bgs)	20-30	20-30	20-30	20-30	20-30	20-30	20-30
Semivolatile Organic Compounds (ug/L)							
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy) methane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl) ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl) phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Caprolactam	10 U	10 U	10 U	5 J	10 U	10 U	10 U
Carbazole	10 U	9 J	8 J	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10	9 J	10 U	10 U	10 U	10 U
Diethyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	8 J	7 J	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
n-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
n-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Napthalene	10 U	260	300	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total Metals (ug/L)							
Arsenic	3.03 U	3.03 U	3.03 U	3.1 U	3.03 U	3.03 U	3.03 U
Barium	15.2 J	2.4 U	2.5 U	2.4 U	20.6 J	20.6 J	21.8 J
Cadmium	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chromium	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Lead	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Mercury	0.06 U	0.02 U	0.04 U	0.07 U	0.11 U	0.06 U	0.02 U
Selenium	3.71 U	3.71 U	3.71 U	3.71 U	3.71 U	3.71 U	3.71 U
Silver	0.7 U	0.7 U	0.87 U	0.7 U	0.7 U	0.7 U	0.7 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-MW06-05A	SWMU318-MW08-05A	86-GW02IW-05A	86-GW27IW-05A	SWMU318-GW04-01	SWMU318-GW06-01
Sample Date	2/19/2005	2/19/2005	2/16/2005	2/16/2005	3/18/2004	3/17/2004
Sample Depth (ft bgs)	20-30	20-30	20-30	20-30	24-28	20-24
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	NA
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	10 U	10 U	10 U	8 J	10 U	NA
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	NA
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	NA
1,1-Dichloroethene	10 U	10 U	10 U	3 J	10 U	NA
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	NA
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	10 U	10 U	NA
1,2-Dibromoethane	10 U	10 U	10 U	10 U	NA	NA
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	NA
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	NA
1,2-Dichloroethylene	2 J	10 U	10 U	310	2 J	NA
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	NA
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	NA
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	NA
2-Butanone	10 U	10 U	10 U	10 U	10 UJ	NA
2-Hexanone	10 U	10 U	10 U	10 U	10 U	NA
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	NA
Acetone	10 U	10 U	10 U	10 U	10 UJ	NA
Benzene	13	10 U	10 U	6 J	5 J	NA
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	NA
Bromoform	10 U	10 U	10 U	10 U	10 U	NA
Bromomethane	10 U	10 U	10 U	10 U	10 U	NA
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	NA
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	NA
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	NA
Chloroethane	10 U	10 U	10 U	10 U	10 U	NA
Chloroform	10 U	2 J	10 U	10 U	10 U	NA
Chloromethane	10 U	10 U	10 U	10 U	10 U	NA
cis-1,2-Dichloroethene	2 J	10 U	10 U	310	2 J	NA
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	NA
Cyclohexane	6 J	10 U	10 U	10 U	10 U	NA
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	NA
Dichlorodifluoromethane	10 U	10 U	10 U	1 J	10 U	NA
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	NA
Ethylene dibromide	NA	NA	NA	NA	10 U	NA
Isopropylbenzene	10 U	10 U	10 U	10 U	10 U	NA
m-,p- Xylene	10 U	10 U	10 U	10 U	10 U	NA
Methyl acetate	10 U	10 U	10 U	10 U	10 U	NA
Methyl-tert-butyl ether (MTBE)	10 U	10 U	10 U	10 U	10 U	NA
Methylcylcohexane	3 J	10 U	10 U	10 U	10 U	NA
Metheylene chloride	10 U	10 U	10 U	10 U	10 U	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-MW06-05A	SWMU318-MW08-05A	86-GW02IW-05A	86-GW27IW-05A	SWMU318-GW04-01	SWMU318-GW06-01
Sample Date	2/19/2005	2/19/2005	2/16/2005	2/16/2005	3/18/2004	3/17/2004
Sample Depth (ft bgs)	20-30	20-30	20-30	20-30	24-28	20-24
Volatile Organic Compounds (ug/L)						
o-Xylene	10 U	10 U	10 U	10 U	10 U	NA
Styrene	10 U	10 U	10 U	10 U	10 U	NA
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	NA
Toluene	10 U	10 U	10 U	10 U	10 U	NA
trans-1,2-Dichloroethene	10 U	10 U	10 U	2 J	10 U	NA
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	NA
Trichloroethene	6 J	10 U	10 U	350	2 J	NA
Trichlorofluoromethane	10 U	10 U	10 U	10 U	10 U	NA
Vinyl chloride	10 U	10 U	10 U	32	10 U	NA
Xylenes (total)	10 U	10 U	10 U	10 U	10 U	NA
Semivolatile Organic Compounds (ug/L)						
1,1'-Biphenyl	10 U	10 U	10 U	10 U	NA	36
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	NA	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	NA	25 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	NA	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	NA	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	NA	990 D
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	NA	25 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	NA	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	NA	10 U
2-Chloronapthalene	10 U	10 U	10 U	10 U	NA	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	NA	10 U
2-Methylnapthalene	10 U	10 U	10 U	10 U	NA	480 D
2-Methylphenol	10 U	10 U	10 U	10 U	NA	410 D
2-Nitroaniline	25 U	25 U	25 U	25 U	NA	25 U
2-Nitrophenol	10 U	10 U	10 U	10 U	NA	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	NA	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U	NA	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	NA	25 U
4-Bromophenyl phenyl ether	10 U	10 U	10 U	10 U	NA	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	NA	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	NA	10 U
4-Chlorophenyl phenyl ether	10 U	10 U	10 U	10 U	NA	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	NA	250 DJ
4-Nitroaniline	25 U	25 U	25 U	25 U	NA	25 UJ
4-Nitrophenol	25 U	25 U	25 U	25 U	NA	25 U
Acenapthene	10 U	10 U	10 U	10 U	NA	280 DJ
Acenapthylene	10 U	10 U	10 U	10 U	NA	10 U
Acetophenone	10 U	10 U	10 U	10 U	NA	10 U
Antracene	10 U	10 U	10 U	10 U	NA	10 U
Atrazine	10 U	10 U	10 U	10 U	NA	10 U
Benzaldehyde	10 U	10 U	10 U	10 U	NA	10 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-MW06-05A	SWMU318-MW08-05A	86-GW02IW-05A	86-GW27IW-05A	SWMU318-GW04-01	SWMU318-GW06-01
Sample Date	2/19/2005	2/19/2005	2/16/2005	2/16/2005	3/18/2004	3/17/2004
Sample Depth (ft bgs)	20-30	20-30	20-30	20-30	24-28	20-24
Semivolatile Organic Compounds (ug/L)						
Benzo(a)anthracene	10 U	10 U	10 U	10 U	NA	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	NA	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	NA	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	NA	10 U
Benzo[g,h,i]perylene	10 U	10 U	10 U	10 U	NA	10 U
Bis(2-chloroethoxy) methane	10 U	10 U	10 U	10 U	NA	10 U
Bis(2-chloroethyl) ether	10 U	10 U	10 U	10 U	NA	10 U
Bis(2-ethylhexyl) phthalate	10 U	10 U	10 U	10 U	NA	10 U
Butyl benzyl phthalate	10 U	10 U	10 U	10 U	NA	10 U
Caprolactam	10 U	10 U	10 U	10 U	NA	10 U
Carbazole	10 U	10 U	10 U	10 U	NA	26
Chrysene	10 U	10 U	10 U	10 U	NA	10 U
Di-n-butyl phthalate	10 U	8 J	10 U	10 U	NA	10 U
Di-n-octylphalate	10 U	10 U	10 U	10 U	NA	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	NA	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	NA	73
Diethyl phthalate	10 U	10 U	10 U	10 U	NA	10 U
Dimethyl phthalate	10 U	10 U	10 U	10 U	NA	10 U
Fluoranthene	10 U	10 U	10 U	10 U	NA	10 U
Fluorene	10 U	10 U	10 U	10 U	NA	46
Hexachlorobenzene	10 U	10 U	10 U	10 U	NA	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	NA	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	NA	10 UJ
Hexachloroethane	10 U	10 U	10 U	10 U	NA	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	NA	10 U
Isophorone	10 U	10 U	10 U	10 U	NA	10 U
n-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	NA	10 U
n-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	NA	10 U
Napthalene	10 U	10 U	10 U	10 U	NA	2100 D
Nitrobenzene	10 U	10 U	10 U	10 U	NA	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	NA	25 U
Phenanthrene	10 U	10 U	10 U	10 U	NA	10 U
Phenol	10 U	10 U	10 U	10 U	NA	10 U
Pyrene	10 U	10 U	10 U	10 U	NA	10 U
Total Metals (ug/L)						
Arsenic	4.1 U	2.81 U	3.03 U	3.03 U	NA	NA
Barium	13.1 J	72.6 J	3.4 U	2.6 U	NA	NA
Cadmium	0.41 U	0.41 U	0.3 U	0.3 U	NA	NA
Chromium	1 U	1 U	0.8 U	0.8 U	NA	NA
Lead	2.07 U	2.07 U	1.7 U	1.7 U	NA	NA
Mercury	0.06 U	0.04 U	0.07 U	0.06 U	NA	NA
Selenium	4.08 U	4.08 U	3.71 U	3.71 U	NA	NA
Silver	0.74 U	0.74 U	0.7 U	0.7 U	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW07-01	SWMU318-GW08-01	SWMU318-GW09-01	SWMU318-GW10-01	SWMU318-GW11-01	SWMU318-GW12-01
Sample Date	3/18/2004	3/17/2004	3/19/2004	3/20/2004	3/20/2004	3/20/2004
Sample Depth (ft bgs)	24-28	24-28	24-28	20-24	24-28	24-28
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	NA	NA	NA	10 U	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	10 U	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	180	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	10 U	NA	NA
1,1-Dichloroethane	NA	NA	NA	10 U	NA	NA
1,1-Dichloroethene	NA	NA	NA	4 J	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	10 U	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	10 U	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	10 U	NA	NA
1,2-Dichloroethane	NA	NA	NA	10 U	NA	NA
1,2-Dichloroethylene	NA	NA	NA	670 D	NA	NA
1,2-Dichloropropane	NA	NA	NA	10 U	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	10 U	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	10 U	NA	NA
2-Butanone	NA	NA	NA	10 UJ	NA	NA
2-Hexanone	NA	NA	NA	10 U	NA	NA
4-Methyl-2-pentanone	NA	NA	NA	10 U	NA	NA
Acetone	NA	NA	NA	10 UJ	NA	NA
Benzene	NA	NA	NA	2 J	NA	NA
Bromodichloromethane	NA	NA	NA	10 U	NA	NA
Bromoform	NA	NA	NA	10 U	NA	NA
Bromomethane	NA	NA	NA	10 U	NA	NA
Carbon Disulfide	NA	NA	NA	10 U	NA	NA
Carbon Tetrachloride	NA	NA	NA	10 U	NA	NA
Chlorobenzene	NA	NA	NA	10 U	NA	NA
Chloroethane	NA	NA	NA	10 U	NA	NA
Chloroform	NA	NA	NA	10 U	NA	NA
Chloromethane	NA	NA	NA	10 U	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	670 D	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	10 U	NA	NA
Cyclohexane	NA	NA	NA	10 U	NA	NA
Dibromochloromethane	NA	NA	NA	10 U	NA	NA
Dichlorodifluoromethane	NA	NA	NA	10 U	NA	NA
Ethylbenzene	NA	NA	NA	3 J	NA	NA
Ethylene dibromide	NA	NA	NA	10 U	NA	NA
Isopropylbenzene	NA	NA	NA	10 U	NA	NA
m-,p- Xylene	NA	NA	NA	5 J	NA	NA
Methyl acetate	NA	NA	NA	10 U	NA	NA
Methyl-tert-butyl ether (MTBE)	NA	NA	NA	10 U	NA	NA
Methylcylcohexane	NA	NA	NA	10 U	NA	NA
Metheylene chloride	NA	NA	NA	10 U	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW07-01	SWMU318-GW08-01	SWMU318-GW09-01	SWMU318-GW10-01	SWMU318-GW11-01	SWMU318-GW12-01
Sample Date	3/18/2004	3/17/2004	3/19/2004	3/20/2004	3/20/2004	3/20/2004
Sample Depth (ft bgs)	24-28	24-28	24-28	20-24	24-28	24-28
Volatile Organic Compounds (ug/L)						
o-Xylene	NA	NA	NA	4 J	NA	NA
Styrene	NA	NA	NA	10 U	NA	NA
Tetrachloroethene	NA	NA	NA	10 U	NA	NA
Toluene	NA	NA	NA	33	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	6 J	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	10 U	NA	NA
Trichloroethene	NA	NA	NA	1200 D	NA	NA
Trichlorofluoromethane	NA	NA	NA	10 U	NA	NA
Vinyl chloride	NA	NA	NA	140	NA	NA
Xylenes (total)	NA	NA	NA	8 J	NA	NA
Semivolatile Organic Compounds (ug/L)						
1,1'-Biphenyl	19 U	10 U	10 U	NA	10 U	10 U
2,2'-Oxybis(1-chloropropane)	19 U	10 U	10 U	NA	10 U	10 U
2,4,5-Trichlorophenol	47 U	25 U	25 U	NA	25 U	25 U
2,4,6-Trichlorophenol	19 U	10 U	10 U	NA	10 U	10 U
2,4-Dichlorophenol	19 U	10 U	10 U	NA	10 U	10 U
2,4-Dimethylphenol	12 J	10 U	10 U	NA	10 U	10 U
2,4-Dinitrophenol	47 U	25 U	25 U	NA	25 U	25 U
2,4-Dinitrotoluene	19 U	10 U	10 U	NA	10 U	10 U
2,6-Dinitrotoluene	19 U	10 U	10 U	NA	10 U	10 U
2-Chloronapthalene	19 U	10 U	10 U	NA	10 U	10 U
2-Chlorophenol	19 U	10 U	10 U	NA	10 U	10 U
2-Methylnapthalene	19 U	10 U	10 U	NA	10 U	10 U
2-Methylphenol	19 U	10 U	10 U	NA	10 U	10 U
2-Nitroaniline	47 U	25 U	25 U	NA	25 U	25 U
2-Nitrophenol	19 U	10 U	10 U	NA	10 U	10 U
3,3'-Dichlorobenzidine	19 UJ	10 UJ	10 UJ	NA	10 U	10 UJ
3-Nitroaniline	47 U	25 U	25 U	NA	25 U	25 U
4,6-Dinitro-2-methylphenol	47 U	25 U	25 U	NA	25 U	25 U
4-Bromophenyl phenyl ether	19 U	10 U	10 U	NA	10 U	10 U
4-Chloro-3-methylphenol	19 U	10 U	10 U	NA	10 U	10 U
4-Chloroaniline	19 U	10 U	10 U	NA	10 U	10 U
4-Chlorophenyl phenyl ether	19 U	10 U	10 U	NA	10 U	10 U
4-Methylphenol	19 U	10 U	10 U	NA	10 U	10 U
4-Nitroaniline	47 UJ	25 UJ	25 UJ	NA	25 UJ	25 UJ
4-Nitrophenol	47 U	25 U	25 U	NA	25 U	25 U
Acenapthene	19 U	10 U	10 U	NA	10 U	11
Acenapthylene	19 U	10 U	10 U	NA	10 U	10 U
Acetophenone	19 U	10 U	10 U	NA	10 U	10 U
Antracene	19 U	10 U	10 U	NA	10 U	10 U
Atrazine	19 U	10 U	10 U	NA	10 U	10 U
Benzaldehyde	19 U	10 U	10 U	NA	10 U	10 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW07-01	SWMU318-GW08-01	SWMU318-GW09-01	SWMU318-GW10-01	SWMU318-GW11-01	SWMU318-GW12-01
Sample Date	3/18/2004	3/17/2004	3/19/2004	3/20/2004	3/20/2004	3/20/2004
Sample Depth (ft bgs)	24-28	24-28	24-28	20-24	24-28	24-28
Semivolatile Organic Compounds (ug/L)						
Benzo(a)anthracene	19 U	10 U	10 U	NA	10 U	10 U
Benzo(a)pyrene	19 U	10 U	10 U	NA	10 U	10 U
Benzo(b)fluoranthene	19 U	10 U	10 U	NA	10 U	10 U
Benzo(k)fluoranthene	19 U	10 U	10 U	NA	10 U	10 U
Benzo[g,h,i]perylene	19 U	10 U	10 U	NA	10 U	10 U
Bis(2-chloroethoxy) methane	19 U	10 U	10 U	NA	10 U	10 U
Bis(2-chloroethyl) ether	19 U	10 U	10 U	NA	10 U	10 U
Bis(2-ethylhexyl) phthalate	19 U	10 U	10 U	NA	10 U	10 U
Butyl benzyl phthalate	19 U	10 U	10 U	NA	10 U	10 U
Caprolactam	19 U	10 U	10 U	NA	10 U	10 U
Carbazole	19 U	10 U	10 U	NA	10 U	10 U
Chrysene	19 U	10 U	10 U	NA	10 U	10 U
Di-n-butyl phthalate	19 U	10 U	10 U	NA	10 U	10 U
Di-n-octylphalate	19 U	10 U	10 U	NA	10 U	10 U
Dibenz(a,h)anthracene	19 U	10 U	10 U	NA	10 U	10 U
Dibenzofuran	19 U	10 U	10 U	NA	10 U	10 U
Diethyl phthalate	19 U	10 U	10 U	NA	10 U	10 U
Dimethyl phthalate	19 U	10 U	10 U	NA	10 U	10 U
Fluoranthene	19 U	10 U	10 U	NA	10 U	10 U
Fluorene	19 U	10 U	10 U	NA	10 U	10 U
Hexachlorobenzene	19 U	10 U	10 U	NA	10 U	10 U
Hexachlorobutadiene	19 U	10 U	10 U	NA	10 U	10 U
Hexachlorocyclopentadiene	19 UJ	10 U	10 U	NA	10 U	10 U
Hexachloroethane	19 U	10 U	10 U	NA	10 U	10 U
Indeno(1,2,3-cd)pyrene	19 U	10 U	10 U	NA	10 U	10 U
Isophorone	19 U	10 U	10 U	NA	10 U	10 U
n-Nitroso-di-n-propylamine	19 U	10 U	10 U	NA	10 U	10 U
n-Nitrosodiphenylamine	19 U	10 U	10 U	NA	10 U	10 U
Napthalene	98	10 U	10 U	NA	10 U	26
Nitrobenzene	19 U	10 U	10 U	NA	10 U	10 U
Pentachlorophenol	47 U	25 U	25 U	NA	25 U	25 U
Phenanthrene	19 U	10 U	10 U	NA	10 U	10 U
Phenol	19 U	10 U	10 U	NA	10 U	10 U
Pyrene	19 U	10 U	10 U	NA	10 U	10 U
Total Metals (ug/L)						
Arsenic	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW14-01	SWMU318-GW20-02A	SWMU318-GW23-01	SWMU318-GW24-01	SWMU318-GW33-01	SWMU318-GW34-01
Sample Date	3/23/2004	6/24/2004	6/23/2004	6/22/2004	2/4/2005	2/2/2005
Sample Depth (ft bgs)	26-30	20-24	25-29	25-29	24-28	24-28
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	NA	1 U	1 U	1 U	10 U	NA
1,1,2,2-Tetrachloroethane	NA	1 U	1 U	1 U	10 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	10 U	NA
1,1,2-Trichloroethane	NA	1 U	1 U	1 U	10 U	NA
1,1-Dichloroethane	NA	10	1 U	1 U	10 U	NA
1,1-Dichloroethene	NA	0.3 J	1 U	1 U	10 U	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	10 U	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	10 U	NA
1,2-Dibromoethane	NA	NA	NA	NA	10 U	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	10 U	NA
1,2-Dichloroethane	NA	1 U	1 U	1 U	10 U	NA
1,2-Dichloroethylene	NA	26	460 D	2 U	10 U	NA
1,2-Dichloropropane	NA	1 U	1 U	1 U	10 U	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	1 J	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	10 U	NA
2-Butanone	NA	5 U	5 U	5 U	10 U	NA
2-Hexanone	NA	5 U	5 U	5 U	10 U	NA
4-Methyl-2-pentanone	NA	5 U	5 U	5 U	10 U	NA
Acetone	NA	2 J	5 U	5 U	10 U	NA
Benzene	NA	1	1	1 U	2 J	NA
Bromodichloromethane	NA	1 U	1 U	1 U	10 U	NA
Bromoform	NA	1 U	1 U	1 U	10 U	NA
Bromomethane	NA	2 U	2 U	2 U	10 U	NA
Carbon Disulfide	NA	0.7 J	1 U	1 U	10 U	NA
Carbon Tetrachloride	NA	1 U	1 UJ	1 UJ	10 U	NA
Chlorobenzene	NA	1	1 U	1 U	10 U	NA
Chloroethane	NA	2 U	2 U	2 U	10 U	NA
Chloroform	NA	1 U	1 U	1 U	10 U	NA
Chloromethane	NA	2 U	2 U	2 U	10 U	NA
cis-1,2-Dichloroethene	NA	24	460 D	1 U	10 U	NA
cis-1,3-Dichloropropene	NA	1 U	1 U	1 U	10 U	NA
Cyclohexane	NA	NA	NA	NA	10 U	NA
Dibromochloromethane	NA	1 U	1 U	1 U	10 U	NA
Dichlorodifluoromethane	NA	NA	NA	NA	10 U	NA
Ethylbenzene	NA	2	1 U	1 U	10 U	NA
Ethylene dibromide	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	10 U	NA
m-,p- Xylene	NA	0.9 J	2 U	2 U	10 U	NA
Methyl acetate	NA	NA	NA	NA	10 U	NA
Methyl-tert-butyl ether (MTBE)	NA	NA	NA	NA	120	NA
Methylcylcohexane	NA	NA	NA	NA	10 U	NA
Metheylene chloride	NA	2 U	2 U	2 U	10 U	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW14-01	SWMU318-GW20-02A	SWMU318-GW23-01	SWMU318-GW24-01	SWMU318-GW33-01	SWMU318-GW34-01
Sample Date	3/23/2004	6/24/2004	6/23/2004	6/22/2004	2/4/2005	2/2/2005
Sample Depth (ft bgs)	26-30	20-24	25-29	25-29	24-28	24-28
Volatile Organic Compounds (ug/L)						
o-Xylene	NA	0.3 J	0.3 J	1 U	10 U	NA
Styrene	NA	1 U	1 U	1 U	10 U	NA
Tetrachloroethene	NA	1 U	1 U	1 U	10 U	NA
Toluene	NA	3	3	1 U	10 U	NA
trans-1,2-Dichloroethene	NA	2	3	1 U	10 U	NA
trans-1,3-Dichloropropene	NA	1 U	1 U	1 U	10 U	NA
Trichloroethene	NA	64	140	1 U	10 U	NA
Trichlorofluoromethane	NA	NA	NA	NA	10 U	NA
Vinyl chloride	NA	5	140	2 U	10 U	NA
Xylenes (total)	NA	1 J	0.9 J	3 U	10 U	NA
Semivolatile Organic Compounds (ug/L)						
1,1'-Biphenyl	12	NA	NA	NA	NA	10 U
2,2'-Oxybis(1-chloropropane)	10 U	NA	NA	NA	NA	10 U
2,4,5-Trichlorophenol	25 U	NA	NA	NA	NA	25 U
2,4,6-Trichlorophenol	10 U	NA	NA	NA	NA	10 U
2,4-Dichlorophenol	10 U	NA	NA	NA	NA	10 U
2,4-Dimethylphenol	13	NA	NA	NA	NA	10 U
2,4-Dinitrophenol	25 U	NA	NA	NA	NA	25 U
2,4-Dinitrotoluene	10 U	NA	NA	NA	NA	10 U
2,6-Dinitrotoluene	10 U	NA	NA	NA	NA	10 U
2-Chloronapthalene	10 U	NA	NA	NA	NA	10 U
2-Chlorophenol	10 U	NA	NA	NA	NA	10 U
2-Methylnapthalene	130 D	NA	NA	NA	NA	10 U
2-Methylphenol	10 U	NA	NA	NA	NA	10 U
2-Nitroaniline	25 U	NA	NA	NA	NA	25 U
2-Nitrophenol	10 U	NA	NA	NA	NA	10 U
3,3'-Dichlorobenzidine	10 U	NA	NA	NA	NA	10 U
3-Nitroaniline	25 UJ	NA	NA	NA	NA	25 U
4,6-Dinitro-2-methylphenol	25 U	NA	NA	NA	NA	25 U
4-Bromophenyl phenyl ether	10 U	NA	NA	NA	NA	10 U
4-Chloro-3-methylphenol	10 U	NA	NA	NA	NA	10 U
4-Chloroaniline	10 U	NA	NA	NA	NA	10 U
4-Chlorophenyl phenyl ether	10 U	NA	NA	NA	NA	10 U
4-Methylphenol	10 U	NA	NA	NA	NA	10 U
4-Nitroaniline	25 UJ	NA	NA	NA	NA	25 U
4-Nitrophenol	25 U	NA	NA	NA	NA	25 U
Acenapthene	95 DJ	NA	NA	NA	NA	10 U
Acenapthylene	10 U	NA	NA	NA	NA	10 U
Acetophenone	10 U	NA	NA	NA	NA	10 U
Antracene	10 U	NA	NA	NA	NA	10 U
Atrazine	10 U	NA	NA	NA	NA	10 U
Benzaldehyde	10 U	NA	NA	NA	NA	10 U

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FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW14-01	SWMU318-GW20-02A	SWMU318-GW23-01	SWMU318-GW24-01	SWMU318-GW33-01	SWMU318-GW34-01
Sample Date	3/23/2004	6/24/2004	6/23/2004	6/22/2004	2/4/2005	2/2/2005
Sample Depth (ft bgs)	26-30	20-24	25-29	25-29	24-28	24-28
Semivolatile Organic Compounds (ug/L)						
Benzo(a)anthracene	10 U	NA	NA	NA	NA	10 U
Benzo(a)pyrene	10 U	NA	NA	NA	NA	10 U
Benzo(b)fluoranthene	10 U	NA	NA	NA	NA	10 U
Benzo(k)fluoranthene	10 U	NA	NA	NA	NA	10 U
Benzo[g,h,i]perylene	10 U	NA	NA	NA	NA	10 U
Bis(2-chloroethoxy) methane	10 U	NA	NA	NA	NA	10 U
Bis(2-chloroethyl) ether	10 U	NA	NA	NA	NA	10 U
Bis(2-ethylhexyl) phthalate	2 J	NA	NA	NA	NA	9 J
Butyl benzyl phthalate	10 U	NA	NA	NA	NA	10 U
Caprolactam	10 U	NA	NA	NA	NA	10 U
Carbazole	24 J	NA	NA	NA	NA	10 U
Chrysene	10 U	NA	NA	NA	NA	10 U
Di-n-butyl phthalate	10 U	NA	NA	NA	NA	10 U
Di-n-octylphalate	10 U	NA	NA	NA	NA	10 U
Dibenz(a,h)anthracene	10 U	NA	NA	NA	NA	10 U
Dibenzofuran	26	NA	NA	NA	NA	10 U
Diethyl phthalate	10 U	NA	NA	NA	NA	10 U
Dimethyl phthalate	10 U	NA	NA	NA	NA	10 U
Fluoranthene	10 U	NA	NA	NA	NA	10 U
Fluorene	16	NA	NA	NA	NA	10 U
Hexachlorobenzene	10 U	NA	NA	NA	NA	10 U
Hexachlorobutadiene	10 U	NA	NA	NA	NA	10 U
Hexachlorocyclopentadiene	10 U	NA	NA	NA	NA	10 U
Hexachloroethane	10 U	NA	NA	NA	NA	10 U
Indeno(1,2,3-cd)pyrene	10 U	NA	NA	NA	NA	10 U
Isophorone	10 U	NA	NA	NA	NA	10 U
n-Nitroso-di-n-propylamine	10 U	NA	NA	NA	NA	10 U
n-Nitrosodiphenylamine	10 U	NA	NA	NA	NA	10 U
Napthalene	800 D	NA	NA	NA	NA	10 U
Nitrobenzene	10 U	NA	NA	NA	NA	10 U
Pentachlorophenol	25 U	NA	NA	NA	NA	25 U
Phenanthrene	0.6 J	NA	NA	NA	NA	10 U
Phenol	0.5 J	NA	NA	NA	NA	10 U
Pyrene	10 U	NA	NA	NA	NA	10 U
Total Metals (ug/L)						
Arsenic	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW35-01	SWMU318-GW51-01
Sample Date	2/5/2005	2/7/2005
Sample Depth (ft bgs)	24-28	24-28
Volatile Organic Compounds (ug/L)		
1,1,1-Trichloroethane	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U
1,1-Dichloroethane	5 J	1 J
1,1-Dichloroethene	10 U	1 J
1,2,4-Trichlorobenzene	10 U	10 U
1,2-Dibromo-3-chloropropane	10 U	10 U
1,2-Dibromoethane	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U
1,2-Dichloroethane	10 U	10 U
1,2-Dichloroethylene	12	7 J
1,2-Dichloropropane	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U
2-Butanone	10 U	10 U
2-Hexanone	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U
Acetone	10 U	10 U
Benzene	140	4 J
Bromodichloromethane	10 U	10 U
Bromoform	10 U	10 U
Bromomethane	10 U	10 U
Carbon Disulfide	10 U	10 U
Carbon Tetrachloride	10 U	10 U
Chlorobenzene	10 U	10 U
Chloroethane	10 U	10 U
Chloroform	10 U	10 U
Chloromethane	10 U	10 U
cis-1,2-Dichloroethene	12	7 J
cis-1,3-Dichloropropene	10 U	10 U
Cyclohexane	10 U	10 U
Dibromochloromethane	10 U	10 U
Dichlorodifluoromethane	10 U	10 U
Ethylbenzene	110	10 U
Ethylene dibromide	NA	NA
Isopropylbenzene	5 J	10 U
m-,p- Xylene	78	10 U
Methyl acetate	10 U	10 U
Methyl-tert-butyl ether (MTBE)	10 U	10 U
Methylcylcohexane	10 U	10 U
Metheylene chloride	10 U	10 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW35-01	SWMU318-GW51-01
Sample Date	2/5/2005	2/7/2005
Sample Depth (ft bgs)	24-28	24-28
Volatile Organic Compounds (ug/L)		
o-Xylene	110	10 U
Styrene	10 U	10 U
Tetrachloroethene	10 U	10 U
Toluene	130	10 U
trans-1,2-Dichloroethene	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U
Trichloroethene	2 J	4 J
Trichlorofluoromethane	10 U	10 U
Vinyl chloride	6 J	10 U
Xylenes (total)	190	10 U
Semivolatile Organic Compounds (ug/L)		
1,1'-Biphenyl	NA	NA
2,2'-Oxybis(1-chloropropane)	NA	NA
2,4,5-Trichlorophenol	NA	NA
2,4,6-Trichlorophenol	NA	NA
2,4-Dichlorophenol	NA	NA
2,4-Dimethylphenol	NA	NA
2,4-Dinitrophenol	NA	NA
2,4-Dinitrotoluene	NA	NA
2,6-Dinitrotoluene	NA	NA
2-Chloronapthalene	NA	NA
2-Chlorophenol	NA	NA
2-Methylnapthalene	NA	NA
2-Methylphenol	NA	NA
2-Nitroaniline	NA	NA
2-Nitrophenol	NA	NA
3,3'-Dichlorobenzidine	NA	NA
3-Nitroaniline	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA
4-Bromophenyl phenyl ether	NA	NA
4-Chloro-3-methylphenol	NA	NA
4-Chloroaniline	NA	NA
4-Chlorophenyl phenyl ether	NA	NA
4-Methylphenol	NA	NA
4-Nitroaniline	NA	NA
4-Nitrophenol	NA	NA
Acenapthene	NA	NA
Acenapthylene	NA	NA
Acetophenone	NA	NA
Antracene	NA	NA
Atrazine	NA	NA
Benzaldehyde	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	SWMU318-GW35-01	SWMU318-GW51-01
Sample Date	2/5/2005	2/7/2005
Sample Depth (ft bgs)	24-28	24-28
Semivolatile Organic Compounds (ug/L)		
Benzo(a)anthracene	NA	NA
Benzo(a)pyrene	NA	NA
Benzo(b)fluoranthene	NA	NA
Benzo(k)fluoranthene	NA	NA
Benzo[g,h,i]perylene	NA	NA
Bis(2-chloroethoxy) methane	NA	NA
Bis(2-chloroethyl) ether	NA	NA
Bis(2-ethylhexyl) phthalate	NA	NA
Butyl benzyl phthalate	NA	NA
Caprolactam	NA	NA
Carbazole	NA	NA
Chrysene	NA	NA
Di-n-butyl phthalate	NA	NA
Di-n-octylphalate	NA	NA
Dibenz(a,h)anthracene	NA	NA
Dibenzofuran	NA	NA
Diethyl phthalate	NA	NA
Dimethyl phthalate	NA	NA
Fluoranthene	NA	NA
Fluorene	NA	NA
Hexachlorobenzene	NA	NA
Hexachlorobutadiene	NA	NA
Hexachlorocyclopentadiene	NA	NA
Hexachloroethane	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA
Isophorone	NA	NA
n-Nitroso-di-n-propylamine	NA	NA
n-Nitrosodiphenylamine	NA	NA
Napthalene	NA	NA
Nitrobenzene	NA	NA
Pentachlorophenol	NA	NA
Phenanthrene	NA	NA
Phenol	NA	NA
Pyrene	NA	NA
Total Metals (ug/L)		
Arsenic	NA	NA
Barium	NA	NA
Cadmium	NA	NA
Chromium	NA	NA
Lead	NA	NA
Mercury	NA	NA
Selenium	NA	NA
Silver	NA	NA

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL DATA
RFI DEEP GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	86-GW17IW-05A	86-GW20IW-05A	86-GW21IW-05A	86-GW22IW-05A	SWMU318-MW04DW-05A	SWMU318-MW05DW-05A	SWMU318-MW05DW-05AD	SWMU318-MW06DW-05A
Sample Date	2/17/2005	2/16/2005	2/17/2005	2/17/2005	2/19/2005	2/20/2005	2/20/2005	2/19/2005
Sample Depth (ft bgs)	45-55	50-55	44-54	54-64	40-45	40-45	40-45	40-45
Volatile Organic Compounds (ug/L)								
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	3 J	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromoethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethylene	10 U	8 J	140	10 U	12	10 U	10 U	4 J
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	1 J	10 U	1 J	10 U	10 U	6 J
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	2 J	2 J	1 J
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	10 U	8 J	99	10 U	12	10 U	10 U	4 J
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J
Ethylene dibromide	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
m-,p- Xylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl acetate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-tert-butyl ether (MTBE)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylcylcohexane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Metheylene chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL DATA
RFI DEEP GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	86-GW17IW-05A	86-GW20IW-05A	86-GW21IW-05A	86-GW22IW-05A	SWMU318-MW04DW-05A	SWMU318-MW05DW-05A	SWMU318-MW05DW-05AD	SWMU318-MW06DW-05A
Sample Date	2/17/2005	2/16/2005	2/17/2005	2/17/2005	2/19/2005	2/20/2005	2/20/2005	2/19/2005
Sample Depth (ft bgs)	45-55	50-55	44-54	54-64	40-45	40-45	40-45	40-45
Volatile Organic Compounds (ug/L)								
o-Xylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	10 U	42	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	46	17	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	12	1 J	28	10 U	10 U	1 J
Xylenes (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Semivolatile Organic Compounds (ug/L)								
1,1'-Biphenyl	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronapthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnapthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Bromophenyl phenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl phenyl ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acenapthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenapthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetophenone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Antracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Atrazine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzaldehyde	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

APPENDIX F
FIXED BASE LABORATORY ANALYTICAL DATA
RFI DEEP GROUNDWATER, SWMU 303/318 AND IR 86
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	86-GW17IW-05A	86-GW20IW-05A	86-GW21IW-05A	86-GW22IW-05A	SWMU318-MW04DW-05A	SWMU318-MW05DW-05A	SWMU318-MW05DW-05AD	SWMU318-MW06DW-05A
Sample Date	2/17/2005	2/16/2005	2/17/2005	2/17/2005	2/19/2005	2/20/2005	2/20/2005	2/19/2005
Sample Depth (ft bgs)	45-55	50-55	44-54	54-64	40-45	40-45	40-45	40-45
Semivolatile Organic Compounds (ug/L)								
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy) methane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl) ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl) phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Caprolactam	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
n-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
n-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Napthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total Metals (ug/L)								
Arsenic	3.03 U	3.03 U	3.03 U	3.03 U	2.81 U	2.81 U	NA	2.81 U
Barium	17.5 J	9.8 J	9.9 J	4.2 U	18.1 J	15.9 J	NA	12.3 J
Cadmium	0.3 U	0.3 U	0.3 U	0.3 U	0.41 U	0.41 U	NA	0.41 U
Chromium	0.8 U	0.8 U	0.8 U	0.8 U	1 U	1 U	NA	1 U
Lead	1.7 U	1.7 U	1.7 U	1.7 U	2.07 U	2.07 U	NA	2.07 U
Mercury	0.04 U	0.04 U	0.05 U	0.02 U	0.04 U	0.05 U	NA	0.05 U
Selenium	3.71 U	3.71 U	3.71 U	3.71 U	4.08 U	4.08 U	NA	4.08 U
Silver	0.86 U	0.7 U	0.7 U	0.7 U	0.74 U	0.74 U	NA	0.74 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB01-00	SWMU318-SB02-00	SWMU318-SB02-00D	SWMU318-SB03-00	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB07-00	SWMU318-SB08-00	SWMU318-SB09-00
SAMPLE DATE	3/16/2004	3/16/2004	3/16/2004	3/19/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004	3/22/2004
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)									
1,1,1,2-tetrachloroethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,1,1-trichloroethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,1,2,2-tetrachloroethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,1,2-trichloroethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,1-dichloroethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,1-dichloroethene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,1-dichloropropene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,2,3-trichlorobenzene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-trichlorobenzene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,2,4-trimethylbenzene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,2-dibromo-3-chloropropane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichlorobenzene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,2-dichloroethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,2-dichloropropane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,3,5-trimethylbenzene	116 U	119 U	116 U	13 U	12 U	12 U	455	593	6.3 U
1,3-dichlorobenzene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,3-dichloropropane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
1,4-dichlorobenzene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
2,2-dichloropropane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
2-Chlorotoluene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
4-Chlorotoluene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
4-Isopropyltoluene	116 U	226	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Benzene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Bromodichloromethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	13 U
Bromoform	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Bromomethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Butyl Benzene	1430	976	3670	13 U	12 U	12 U	31700	18100	6.3 U
Carbon Tetrachloride	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Chlorobenzene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Chloroethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	13 U
Chloroform	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Chloromethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	13 U
Cis-1,2-dichloroethene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Cis-1,3-dichloropropene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Dibromochloromethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Ethylbenzene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Ethylene Dibromide	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Hexachlorobutadiene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Isopropylbenzene	698	1786	384	13 U	12 U	12 U	568 U	2220 U	6.3 U
Meta-xylene	233 U	238 U	233 U	26 U	2 J	25 U	25 J	19 J	6.3 U
Methylene Bromide	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Methylene Chloride	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	13 U
Monobromobenzene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Naphthalene	2490	2140	5380	13 U	12 U	12 U	10600	57800	6.3 U
Ortho-xylene	116 U	119 U	116 U	4 J	12 U	12 U	44 J	35 J	6.3 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Tetrachloroethene	116 U	119 U	116 U	13 U	12 U	12 U	42 J	110 U	6.3 U
Toluene	116 U	119 U	116 U	13 U	4 J	12 U	114 U	34 J	6.3 U
Trans-1,2-dichloroethene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Trans-1,3-dichloropropene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Trichloroethene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	13 U
n-Propylbenzene	116 U	119 U	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U
sec-Butylbenzene	116 U	81 J	116 U	13 U	12 U	12 U	125	109 J	6.3 U
tert-Butylbenzene	116 U	190	116 U	13 U	12 U	12 U	114 U	110 U	6.3 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB10-00	SWMU318-SB11-00	SWMU318-SB12-00	SWMU318-SB13-00	SWMU318-SB16-00	SWMU318-SB16-00D	SWMU318-SB18-00	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB21-00	SWMU318-SB22-00
SAMPLE DATE	3/23/2004	3/22/2004	3/22/2004	3/23/2004	2/4/2005	2/4/2005	2/7/2005	2/4/2005	2/3/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)											
1,1,1,2-tetrachloroethane	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,1-trichloroethane	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-tetrachloroethane	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-trichloroethane	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethane	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethene	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloropropene	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-trichlorobenzene	5.6 U	5.7 U	6.2 U	5.4 U	0.78 J	6 U	0.67 J	6 U	0.82 J	5 U	0.7 J
1,2,3-Trichloropropane	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-trichlorobenzene	5.6 U	5.7 U	6.2 U	5.4 U	0.65 J	6 U	0.47 J	6 U	0.56 J	5 U	0.53 J
1,2,4-trimethylbenzene	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	0.59 J	2 U	2 U
1,2-dibromo-3-chloropropane	5.6 U	5.7 U	6.2 U	5.4 U	6 U	6 U	6 U	6 U	6 U	5 U	5 U
1,2-Dibromoethane	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-dichlorobenzene	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-dichloroethane	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichloropropane	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-trimethylbenzene	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	0.47 J	2 U	2 U
1,3-dichlorobenzene	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-dichloropropane	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-dichlorobenzene	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2,2-dichloropropane	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Chlorotoluene	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	5.6 U	5.7 U	6.2 U	5.4 U	NA	NA	NA	NA	NA	NA	NA
Benzene	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	0.9 J	1 U	1 U	1 U	1 U
Bromobenzene	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromochloromethane	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	11 U	11 U	12 U	11 U	6 U	6 U	6 U	6 U	6 U	5 U	5 U
Butyl Benzene	5.6 U	5.7 U	6.2 U	5.4 U	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	11 U	11 U	12 U	11 U	6 U	6 U	6 U	6 U	6 U	5 U	5 U
Chloroform	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	11 U	11 U	12 U	11 U	6 U	6 U	6 U	6 U	6 U	5 U	5 U
Cis-1,2-dichloroethene	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	0.86 J	1 U	1 U	1 U	1 U
Cis-1,3-dichloropropene	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromomethane	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	5.6 U	5.7 U	6.2 U	5.4 U	6 U	6 U	6 U	6 U	6 U	5 U	5 U
Ethylbenzene	5.6 U	5.7 U	6.2 U	7.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylene Dibromide	5.6 U	5.7 U	6.2 U	5.4 U	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	5.6 U	5.7 U	6.2 U	5.4 U	6 U	6 U	6 U	6 U	6 U	5 U	5 U
Isopropylbenzene	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Meta-xylene	4.7 J	5.7 U	6.2 U	26	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Bromide	5.6 U	5.7 U	6.2 U	5.4 U	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	11 U	11 U	13	11 U	6 U	6 U	6 U	6 U	6 U	5 U	5 U
Monobromobenzene	5.6 U	5.7 U	6.2 U	5.4 U	NA	NA	NA	NA	NA	NA	NA
Naphthalene	5.6 U	5.7 U	6.2 U	5.4 U	6 U	6 U	6 U	6 U	1.1 J	5 U	5 U
Ortho-xylene	5.6 U	5.7 U	6.2 U	8.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
n-Butylbenzene	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U
p-Isopropltoluene	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5.6 U	5.7 U	6.2 U	3.6 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5.6 U	5.7 U	6.2 U	5.4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	NA	NA	NA	NA	6 U	6 U	6 U	6 U	6 U	5 U	5 U
Vinyl Chloride	11 U	11 U	12 U	11 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
tert-Butylbenzene	5.6 U	5.7 U	6.2 U	5.4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB23-00	SWMU318-SB24-00	SWMU318-SB25-00	SWMU318-SB26-00	SWMU318-SB27-00	SWMU318-SB28-00
SAMPLE DATE	2/3/2005	2/7/2005	2/8/2005	2/4/2005	2/7/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)						
1,1,1,2-tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U
1,1,1-trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-trichlorobenzene	6 U	6 U	6 U	1.3 J	6 U	6 U
1,2,3-Trichloropropane	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-trichlorobenzene	6 U	6 U	6 U	0.94 J	6 U	6 U
1,2,4-trimethylbenzene	2 U	2 U	2 U	0.65 J	2 U	2 U
1,2-dibromo-3-chloropropane	6 U	6 U	6 U	6 U	6 U	6 U
1,2-Dibromoethane	2 U	2 U	2 U	2 U	2 U	2 U
1,2-dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U
1,2-dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U
1,3-dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U
1,3-dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
1,4-dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U
2,2-dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA
Benzene	1 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	2 U	2 U	2 U	2 U	2 U	2 U
Bromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	6 U	6 U	6 U	6 U	6 U	6 U
Butyl Benzene	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	6 U	6 U	6 U	6 U	6 U	6 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	6 U	6 U	6 U	6 U	6 U	6 U
Cis-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U
Dibromomethane	2 U	2 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	6 U	6 U	6 U	6 U	6 U	6 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Ethylene Dibromide	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	6 U	6 U	6 U	6 U	6 U	6 U
Isopropylbenzene	2 U	2 U	2 U	2 U	2 U	2 U
Meta-xylene	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Bromide	NA	NA	NA	NA	NA	NA
Methylene Chloride	6 U	6 U	6 U	6 U	6 U	6 U
Monobromobenzene	NA	NA	NA	NA	NA	NA
Naphthalene	6 U	6 U	6 U	1.5 J	6 U	6 U
Ortho-xylene	1 U	1 U	1 U	1 U	1 U	1 U
n-Butylbenzene	2 U	2 U	2 U	0.66 J	2 U	2 U
p-Isopropltoluene	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	6 U	6 U	6 U	6 U	6 U	6 U
Vinyl Chloride	2 U	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U
tert-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB01-03	SWMU318-SB01-04	SWMU318-SB02-04	SWMU318-SB02-06	SWMU318-SB03-01	SWMU318-SB03-04	SWMU318-SB04-01	SWMU318-SB04-02	SWMU318-SB04-04	SWMU318-SB05-02	SWMU318-SB05-02D
SAMPLE DATE	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/19/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004
SAMPLE DEPTH (ft bgs)	5-7	7-9	7-9	11-13	1-3	7-9	1-3	3-5	7-9	3-5	3-5
Volatile Organic Compounds (ug/kg)											
1,1,1,2-tetrachloroethane	13 U	15 U	133 U	13 U	11 U	3 J	5.9 U	13 U	13 U	13 U	12 U
1,1,1-trichloroethane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
1,1,2,2-tetrachloroethane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
1,1,2-trichloroethane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
1,1-dichloroethane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
1,1-dichloroethene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
1,1-dichloropropene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
1,2,3-trichlorobenzene	13 U	15 U	133 U	13 U	11 U	4 J	5.9 U	13 U	13 U	13 U	12 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-trichlorobenzene	13 U	15 U	133 U	13 U	11 U	6 J	5.9 U	13 U	13 U	13 U	12 U
1,2,4-trimethylbenzene	13 U	15 U	133 U	13 U	11 U	3 J	15	13 U	13 U	13 U	12 U
1,2-dibromo-3-chloropropane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichlorobenzene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
1,2-dichloroethane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
1,2-dichloropropane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
1,3,5-trimethylbenzene	13 U	15 U	133 U	13 U	11 U	46	5.9 U	13 U	13 U	13 U	12 U
1,3-dichlorobenzene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
1,3-dichloropropane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
1,4-dichlorobenzene	13 U	15 U	133 U	13 U	11 U	11 U	3.2 J	13 U	13 U	13 U	12 U
2,2-dichloropropane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
2-Chlorotoluene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
4-Chlorotoluene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
4-Isopropyltoluene	13 U	15 U	133 U	13 U	11 U	46	14	13 U	13 U	13 U	12 U
Benzene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Bromodichloromethane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Bromoform	13 U	15 U	133 U	13 U	11 U	5 J	5.9 U	13 U	13 U	13 U	12 U
Bromomethane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Butyl Benzene	13 U	15 U	133 U	13 U	11 U	1230	6	13 U	13 U	13 U	12 U
Carbon Tetrachloride	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Chlorobenzene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Chloroethane	13 U	15 U	133 U	13 U	11 U	11 U	12 U	13 U	13 U	13 U	12 U
Chloroform	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Chloromethane	13 U	15 U	133 U	13 U	11 U	11 U	12 U	13 U	13 U	13 U	12 U
Cis-1,2-dichloroethene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Cis-1,3-dichloropropene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Dibromochloromethane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Ethylbenzene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Ethylene Dibromide	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Hexachlorobutadiene	13 U	15 U	133 U	13 U	11 U	7 J	5.9 U	13 U	13 U	13 U	12 U
Isopropylbenzene	13 U	15 U	133 U	13 U	11 U	549 U	5.9 U	13 U	13 U	13 U	12 U
Meta-xylene	27 U	30 U	267 U	25 U	23 U	3 J	2.8 J	27 U	25 U	3 J	2 J
Methylene Bromide	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Methylene Chloride	13 U	15 U	133 U	13 U	11 U	11 U	12 U	13 U	13 U	13 U	12 U
Monobromobenzene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Naphthalene	13 U	15 U	320	51	11 U	3630	84	13 U	13 U	13 U	12 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-xylene	13 U	15 U	133 U	13 U	11 U	4 J	5.9 U	13 U	13 U	13 U	4 J
p-Isopropltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	13 U	15 U	133 U	13 U	11 U	2 J	5.9 U	13 U	13 U	13 U	12 U
Tetrachloroethene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Toluene	13 U	15 U	133 U	13 U	11 U	3 J	5.9 J	13 U	13 U	13 U	12 U
Trans-1,2-dichloroethene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Trans-1,3-dichloropropene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Trichloroethene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	13 U	15 U	133 U	13 U	11 U	11 U	12 U	13 U	13 U	13 U	12 U
n-Propylbenzene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U
sec-Butylbenzene	13 U	15 U	133 U	13 U	11 U	17	5.9 U	13 U	13 U	13 U	12 U
tert-Butylbenzene	13 U	15 U	133 U	13 U	11 U	11 U	5.9 U	13 U	13 U	13 U	12 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB05-03	SWMU318-SB06-02	SWMU318-SB06-02D	SWMU318-SB06-04	SWMU318-SB07-02	SWMU318-SB07-04	SWMU318-SB08-02	SWMU318-SB08-04	SWMU318-SB09-02	SWMU318-SB09-03	SWMU318-SB10-02
SAMPLE DATE	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004	3/20/2004	3/20/2004	3/22/2004	3/22/2004	3/23/2004
SAMPLE DEPTH (ft bgs)	5-7	3-5	3-5	7-9	3-5	7-9	3-5	7-9	1-3	5-7	3-5
Volatile Organic Compounds (ug/kg)											
1,1,1,2-tetrachloroethane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,1,1-trichloroethane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,1,2,2-tetrachloroethane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,1,2-trichloroethane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,1-dichloroethane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,1-dichloroethene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,1-dichloropropene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,2,3-trichlorobenzene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-trichlorobenzene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,2,4-trimethylbenzene	12 U	125 U	123 U	14 U	3.2 J	2 J	23	6.3 U	6 U	6 U	6.3 U
1,2-dibromo-3-chloropropane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-dichlorobenzene	12 U	125 U	123 U	14 U	6.6	14 U	6.3 U	6.3 U	6 U	4 J	6.3 U
1,2-dichloroethane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,2-dichloropropane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,3,5-trimethylbenzene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,3-dichlorobenzene	12 U	125 U	123 U	14 U	6.2 U	41	6.3 U	6.3 U	6 U	6 U	6.3 U
1,3-dichloropropane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
1,4-dichlorobenzene	12 U	125 U	123 U	14 U	6.2 U	7 J	6.3 U	6.3 U	6 U	6.3	6.3 U
2,2-dichloropropane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
2-Chlorotoluene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
4-Chlorotoluene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
4-Isopropyltoluene	12 U	125 U	123 U	16	6.2 U	7 J	6.3 U	6.3 U	6 U	6 U	6.3 U
Benzene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Bromodichloromethane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Bromoform	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Bromomethane	12 U	125 U	123 U	14 U	12 U	14 U	13 U	13 U	12 U	6 U	13 U
Butyl Benzene	12 U	125 U	123 U	9 J	3.2 J	80	27	6.3 U	6 U	6 U	6.3 U
Carbon Tetrachloride	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Chlorobenzene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	17	6.3 U
Chloroethane	12 U	125 U	123 U	14 U	12 U	14 U	13 U	13 U	12 U	12 U	13 U
Chloroform	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Chloromethane	12 U	125 U	123 U	14 U	12 U	14 U	13 U	13 U	12 U	12 U	13 U
Cis-1,2-dichloroethene	12 U	125 U	123 U	14 U	2.2 J	4 J	6.3 U	6.3 U	6 U	6 U	6.3 U
Cis-1,3-dichloropropene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Dibromochloromethane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Ethylbenzene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Ethylene Dibromide	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Hexachlorobutadiene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Isopropylbenzene	12 U	125 U	123 U	14 U	6.2 U	39	6.3 U	6.3 U	6 U	6 U	6.3 U
Meta-xylene	3 J	250 U	247 U	29 U	6.2 U	28 U	6.3 U	6.3 U	6 U	6 U	2.7 J
Methylene Bromide	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Methylene Chloride	12 U	125 U	123 U	14 U	12 U	14 U	13 U	13 U	12 U	12 U	13 U
Monobromobenzene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Naphthalene	12 U	71 J	160	59	14	243 E	120	6.3 U	6 U	6 U	6.3 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ortho-xylene	3 J	125 U	123 U	14 U	6.2 U	5 J	6.3 U	6.3 U	6 U	6 U	6.3 U
p-Isopropltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Tetrachloroethene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Toluene	12 U	125 U	123 U	14 U	6.2 U	4 J	6.3 U	6.3 U	6 U	6 U	6.3 U
Trans-1,2-dichloroethene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Trans-1,3-dichloropropene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Trichloroethene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	12 U	125 U	123 U	14 U	12 U	14 U	13 U	13 U	12 U	12 U	13 U
n-Propylbenzene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
sec-Butylbenzene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U
tert-Butylbenzene	12 U	125 U	123 U	14 U	6.2 U	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB10-03	SWMU318-SB11-01	SWMU318-SB11-03	SWMU318-SB11-03D	SWMU318-SB12-01	SWMU318-SB12-04	SWMU318-SB13-01	SWMU318-SB13-03	SWMU318-SB14-01	SWMU318-SB14-02	SWMU318-SB14-03	SWMU318-SB15-01
SAMPLE DATE	3/23/2004	3/22/2004	3/22/2004	3/22/2004	3/22/2004	3/22/2004	3/23/2004	3/23/2004	2/5/2005	2/5/2005	2/5/2005	2/5/2005
SAMPLE DEPTH (ft bgs)	5-7	1-3	5-7	5-7	1-3	7-9	1-3	5-7	1-3	3-5	5-7	1-3
Volatile Organic Compounds (ug/kg)												
1,1,1,2-tetrachloroethane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
1,1,1-trichloroethane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
1,1,2,2-tetrachloroethane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
1,1,2-trichloroethane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
1,1-dichloroethane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
1,1-dichloroethene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
1,1-dichloropropene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
1,2,3-trichlorobenzene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	0.79 J	0.66 J	0.73 J	0.53 J
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	3 U	2 U
1,2,4-trichlorobenzene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	0.64 J	0.52 J	0.57 J	0.54 J
1,2,4-trimethylbenzene	7.6 U	5.9 U	22	100	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
1,2-dibromo-3-chloropropane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	6 U	6 U	7 U	6 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	3 U	2 U
1,2-dichlorobenzene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
1,2-dichloroethane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
1,2-dichloropropane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
1,3,5-trimethylbenzene	7.6 U	5.9 U	2.7 J	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
1,3-dichlorobenzene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
1,3-dichloropropane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
1,4-dichlorobenzene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
2,2-dichloropropane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
2-Chlorotoluene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
4-Chlorotoluene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
4-Isopropyltoluene	7.6 U	5.9 U	6.9	19	5.8 U	6.4 U	6.1 U	7.7 U	NA	NA	NA	NA
Benzene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	3 U	2 U
Bromochloromethane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
Bromodichloromethane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
Bromoform	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
Bromomethane	15 U	12 U	12 U	12 U	12 U	13 U	12 U	15 U	6 U	6 U	7 U	6 U
Butyl Benzene	7.6 U	5.9 U	170	659	5.8 U	6.4 U	6.1 U	7.7 U	NA	NA	NA	NA
Carbon Tetrachloride	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Chlorobenzene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Chloroethane	15 U	12 U	12 U	12 U	12 U	13 U	12 U	15 U	6 U	6 U	7 U	6 U
Chloroform	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Chloromethane	15 U	12 U	12 U	12 U	12 U	13 U	12 U	15 U	6 U	6 U	7 U	6 U
Cis-1,2-dichloroethene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Cis-1,3-dichloropropene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Dibromochloromethane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	3 U	2 U
Dichlorodifluoromethane	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	6 U	6 U	7 U	6 U
Ethylbenzene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Ethylene Dibromide	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	NA	NA	NA	NA
Hexachlorobutadiene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	6 U	6 U	7 U	6 U
Isopropylbenzene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
Meta-xylene	3.5 J	5.9 U	6.2 U	2.9 J	5.8 U	6.4 U	4.2 J	7.7 U	2 U	2 U	3 U	2 U
Methylene Bromide	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	NA	NA	NA	NA
Methylene Chloride	15 U	12 U	12 U	12 U	12 U	13 U	12 U	15 U	6 U	6 U	7 U	6 U
Monobromobenzene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	NA	NA	NA	NA
Naphthalene	7.6 U	5.9 U	352	148	5.8 U	6.4 U	6.1 U	7.7 U	0.99 J	6 U	7 U	6 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	3 U	2 U
Ortho-xylene	7.6 U	5.9 U	6.2 U	2.7 J	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
p-Isopropltoluene	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	3 U	2 U
Styrene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Tetrachloroethene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Toluene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Trichloroethene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	6 U	6 U	7 U	6 U
Vinyl Chloride	15 U	12 U	12 U	12 U	12 U	13 U	12 U	15 U	2 U	2 U	3 U	2 U
n-Propylbenzene	7.6 U	5.9 U	6.2 U	2.6 J	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
sec-Butylbenzene	7.6 U	5.9 U	6.7	41	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U
tert-Butylbenzene	7.6 U	5.9 U	6.2 U	6.1 U	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2 U	3 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB15-02	SWMU318-SB15-02D	SWMU318-SB15-03	SWMU318-SB16-02	SWMU318-SB16-03	SWMU318-SB17-01	SWMU318-SB17-02	SWMU318-SB17-03	SWMU318-SB18-02	SWMU318-SB18-03	SWMU318-SB19-02	SWMU318-SB19-05
SAMPLE DATE	2/5/2005	2/5/2005	2/5/2005	2/4/2005	2/4/2005	2/5/2005	2/5/2005	2/5/2005	2/7/2005	2/7/2005	2/4/2005	2/4/2005
SAMPLE DEPTH (ft bgs)	3-5	3-5	5-7	3-5	5-7	1-3	3-5	5-7	3-5	5-7	3-5	9-11
Volatile Organic Compounds (ug/kg)												
1,1,1,2-tetrachloroethane	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
1,1,1-trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-tetrachloroethane	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
1,1,2-trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-trichlorobenzene	0.72 J	0.64 J	0.57 J	0.59 J	7 U	0.57 J	1 J	0.95 J	6 U	0.83 J	0.91 J	7 U
1,2,3-Trichloropropane	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
1,2,4-trichlorobenzene	0.45 J	0.43 J	0.52 J	0.42 J	0.44 J	0.4 J	0.8 J	0.81 J	6 U	0.53 J	0.75 J	7 U
1,2,4-trimethylbenzene	2 U	2 U	3 U	2 U	3 U	2 U	0.46 J	0.43 J	3 U	3 U	0.43 J	3 U
1,2-dibromo-3-chloropropane	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	6 U	7 U	6 U	7 U
1,2-Dibromoethane	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
1,2-dichlorobenzene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
1,2-dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-trimethylbenzene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
1,3-dichlorobenzene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
1,3-dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-dichlorobenzene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
2,2-dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Chlorotoluene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
4-Chlorotoluene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
Bromochloromethane	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
Bromodichloromethane	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
Bromoform	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
Bromomethane	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	6 U	7 U	6 U	7 U
Butyl Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	6 U	7 U	6 U	7 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	6 U	7 U	6 U	7 U
Cis-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
Dibromomethane	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
Dichlorodifluoromethane	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	6 U	7 U	6 U	7 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	6 U	7 U	6 U	7 U
Isopropylbenzene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
Meta-xylene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
Methylene Bromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	6 U	7 U	6 U	7 U
Monobromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	6 U	6 U	7 U	6 U	7 U	6 U	1.4 J	1.1 J	6 U	7 U	6 U	7 U
n-Butylbenzene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
Ortho-xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
p-Isopropltoluene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	6 U	7 U	6 U	7 U
Vinyl Chloride	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
n-Propylbenzene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
sec-Butylbenzene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U
tert-Butylbenzene	2 U	2 U	3 U	2 U	3 U	2 U	3 U	3 U	3 U	3 U	3 U	3 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB20-02	SWMU318-SB20-04	SWMU318-SB21-02	SWMU318-SB21-04	SWMU318-SB22-03	SWMU318-SB22-04	SWMU318-SB23-02	SWMU318-SB23-04	SWMU318-SB24-03	SWMU318-SB24-05	SWMU318-SB25-02	SWMU318-SB25-04
SAMPLE DATE	2/3/2005	2/3/2005	2/3/2005	2/3/2005	2/7/2005	2/7/2005	2/3/2005	2/3/2005	2/7/2005	2/7/2005	2/8/2005	2/8/2005
SAMPLE DEPTH (ft bgs)	3-5	7-9	3-5	7-9	5-7	7-9	3-5	7-9	5-7	9-11	3-5	7-9
Volatile Organic Compounds (ug/kg)												
1,1,1,2-tetrachloroethane	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
1,1,1-trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-tetrachloroethane	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
1,1,2-trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-trichlorobenzene	6 U	6 U	6 U	1 J	0.84 J	7 U	1.3 J	0.64 J	7 U	7 U	6 U	7 U
1,2,3-Trichloropropane	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
1,2,4-trichlorobenzene	6 U	6 U	6 U	0.97 J	0.71 J	7 U	1.1 J	0.59 J	7 U	7 U	6 U	7 U
1,2,4-trimethylbenzene	3 U	2 U	3 U	0.63 J	3 U	3 U	0.64 J	3 U	3 U	3 U	2 U	3 U
1,2-dibromo-3-chloropropane	6 U	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	7 U	6 U	7 U
1,2-Dibromoethane	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
1,2-dichlorobenzene	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
1,2-dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-trimethylbenzene	3 U	2 U	3 U	0.53 J	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
1,3-dichlorobenzene	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
1,3-dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-dichlorobenzene	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
2,2-dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Chlorotoluene	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
4-Chlorotoluene	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
Bromochloromethane	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
Bromodichloromethane	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
Bromoform	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
Bromomethane	6 U	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	7 U	6 U	7 U
Butyl Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	6 U	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	7 U	6 U	7 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	6 U	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	7 U	6 U	7 U
Cis-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
Dibromomethane	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
Dichlorodifluoromethane	6 U	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	7 U	6 U	7 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	6 U	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	7 U	6 U	7 U
Isopropylbenzene	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
Meta-xylene	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
Methylene Bromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	6 U	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	7 U	6 U	7 U
Monobromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	6 U	6 U	6 U	1.4 J	1.2 J	7 U	1.3 J	0.97 J	7 U	7 U	6 U	7 U
n-Butylbenzene	3 U	2 U	3 U	0.66 J	3 U	3 U	0.61 J	3 U	3 U	3 U	2 U	3 U
Ortho-xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
p-Isopropltoluene	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	6 U	6 U	6 U	7 U	6 U	7 U	6 U	6 U	7 U	7 U	6 U	7 U
Vinyl Chloride	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
n-Propylbenzene	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
sec-Butylbenzene	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U
tert-Butylbenzene	3 U	2 U	3 U	3 U	3 U	3 U	2 U	3 U	3 U	3 U	2 U	3 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SUBSURFACE SOIL, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB26-01	SWMU318-SB26-02	SWMU318-SB27-02	SWMU318-SB27-03	SWMU318-SB27-03D	SWMU318-SB28-02	SWMU318-SB28-02D	SWMU318-SB28-04	SWMU318-SB35-01	SWMU318-SB35-01D	SWMU318-SB35-02	SWMU318-SB35-03
SAMPLE DATE	2/4/2005	2/4/2005	2/7/2005	2/7/2005	2/7/2005	2/8/2005	2/8/2005	2/8/2005	2/5/2005	2/5/2005	2/5/2005	2/5/2005
SAMPLE DEPTH (ft bgs)	1-3	3-5	3-5	5-7	5-7	3-5	3-5	7-9	1-3	1-3	3-5	5-7
Volatile Organic Compounds (ug/kg)												
1,1,1,2-tetrachloroethane	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
1,1,1-trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-tetrachloroethane	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
1,1,2-trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-trichlorobenzene	6 U	6 U	6 U	7 U	7 U	6 U	6 U	7 U	6 U	6 U	1 J	6 U
1,2,3-Trichloropropane	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
1,2,4-trichlorobenzene	0.47 J	0.46 J	6 U	0.52 J	7 U	6 U	6 U	7 U	6 U	6 U	0.76 J	6 U
1,2,4-trimethylbenzene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
1,2-dibromo-3-chloropropane	6 U	6 U	6 U	7 U	7 U	6 U	6 U	7 U	6 U	6 U	6 U	6 U
1,2-Dibromoethane	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
1,2-dichlorobenzene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
1,2-dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-trimethylbenzene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
1,3-dichlorobenzene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
1,3-dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-dichlorobenzene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
2,2-dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Chlorotoluene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
Bromochloromethane	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
Bromoform	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
Bromomethane	6 U	6 U	6 U	7 U	7 U	6 U	6 U	7 U	6 U	6 U	6 U	6 U
Butyl Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	6 U	6 U	6 U	7 U	7 U	6 U	6 U	7 U	6 U	6 U	6 U	6 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	6 U	6 U	6 U	7 U	7 U	6 U	6 U	7 U	6 U	6 U	6 U	6 U
Cis-1,2-dichloroethene	1 U	0.7 J	0.84 J	0.95 J	2.9	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
Dibromomethane	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	6 U	6 U	6 U	7 U	7 U	6 U	6 U	7 U	6 U	6 U	6 U	6 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	6 U	6 U	6 U	7 U	7 U	6 U	6 U	7 U	6 U	6 U	6 U	6 U
Isopropylbenzene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
Meta-xylene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
Methylene Bromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	6 U	6 U	6 U	7 U	7 U	6 U	6 U	7 U	6 U	6 U	6 U	6 U
Monobromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	6 U	6 U	6 U	7 U	7 U	6 U	6 U	7 U	6 U	6 U	1.2 J	6 U
n-Butylbenzene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
Ortho-xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
p-Isopropltoluene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	6 U	6 U	6 U	7 U	7 U	6 U	6 U	7 U	6 U	6 U	6 U	6 U
Vinyl Chloride	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
n-Propylbenzene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U
tert-Butylbenzene	2 U	3 U	3 U	3 U	3 U	2 U	2 U	3 U	2 U	2 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SHALLOW GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW01	SWMU318-GW02	SWMU318-GW02D	SWMU318-GW03	SWMU318-GW04	SWMU318-GW05	SWMU318-GW06	SWMU318-GW07	SWMU318-GW08	SWMU318-GW09	SWMU318-GW10
SAMPLE DATE	3/19/2004	3/17/2004	3/17/2004	3/18/2004	3/18/2004	3/17/2004	3/17/2004	3/18/2004	3/17/2004	3/19/2004	3/20/2004
SAMPLE DEPTH (ft range)	12-16	10-14	10-14	12-16	12-16	10-14	15-19	10-14	12-16	12-16	15-19
Volatile Organic Compounds (ug/L)											
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.7 J	2 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethane	2 U	2 U	2 U	2 U	0.5 J	0.5 J	2 U	2 U	2 U	4	2 U
1,1-Dichloroethene	2 U	2 U	2 U	2 U	2 U	2 U	4	2 U	2 U	3	2 U
1,1-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	2 U	2 U	0.9 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	2 U	2 U	3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	2 J	2 U	2 U	2 U	1 J	1 J	1 J	2 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	2 U	2 U	0.5 J	0.4 J	0.4 J	2 J	0.4 J	2 U	2 U	2 U	2 U
1,2-Dichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3,5-Trimethylbenzene	2 U	2 U	0.6 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	0.5 J	0.7 J	0.7 J	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene	2 U	2	2	0.9 J	0.9 J	0.9 J	2 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	0.9 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	0.8 J	2 U	2 U	0.8 J	2 U	0.7 J	2 U	2 U	2 U
Benzene	2 U	2 U	2 U	2 U	0.9 J	2 U	0.2 J	2 U	2 U	2 U	2 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butyl Benzene	32	2 U	2 U	0.5 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Carbon tetrachloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	2 U	2 U	2 U	2 U	2	2 U	2 U	2 U	2 U	2 U	2 U
Chloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	3	1 J	1 J	0.6 J	0.4 J	2 U	54 D	0.4 J	2 U	15	3
cis-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	2 J	0.7 J	0.6 J	0.6 J	0.6 J	0.6 J	0.7 J	2 U	0.6 J	2 U	2 U
Ethylene Dibromide	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Hexachlorobutadiene	2 U	2 U	0.5 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Isopropylbenzene	4	1 J	1 J	2 U	1 J	1 J	2 U	1 J	2 U	2 U	2 U
p&m-Xylene	2 J	4 U	2 J	4 U	2 J	4 U	4 U	2 J	4 U	4 U	0.5 J
Methylene Bromide	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Chloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Monobromobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	5	2 J	22	2 U	18	2 U	2 U	2 U	2 U	4	2 U
o-Xylene	2 U	2 U	1 J	2 U	1 J	2 U	1 J	1 J	2 U	2 U	2 U
p-Isopropltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	2 U	2 U	0.8 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	0.8 J	0.8 J	0.8 J	0.7 J	0.9 J	1 J	0.8 J	2 U	0.7 J	0.7 J	0.3 J
trans-1,2-Dichloroethene	2 U	2 U	2 U	2 U	2 U	2 U	1 J	2 U	2 U	2 U	2 U
trans-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	0.9 J	2	2 J	1 J	0.7 J	1 J	27	1 J	2 U	6	3
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	2 U	2 U	2 U	2 U	2 U	2 U	16	2 U	2 U	1 J	2 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	4	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	5	2 U	2 J	2 U	2 U	1 J	2 U	2 U	2 J	0.9 J	2 U
tert-Butylbenzene	2 U	2 U	2 U	2 U	2 U	1 J	2 U	2 U	2 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SHALLOW GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW11	SWMU318-GW12	SWMU318-GW13	SWMU318-GW14	SWMU318-GW15	SWMU-GW16	SWMU318-GW17	SWMU318-GW18	SWMU318-GW19	SWMU318-GW20	SWMU318-GW21
SAMPLE DATE	3/20/2004	3/20/2004	3/20/2004	3/22/2004	3/22/2004	6/21/04	6/23/2004	6/21/04	6/21/2004	6/21/04	6/22/04
SAMPLE DEPTH (ft range)	12-16	12-16	12-16	12-16	12-16	10-14	10-14	10-14	10-14	10-14	10-14
Volatile Organic Compounds (ug/L)											
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethane	2 U	0.5 J	0.7 J	10 U	20 U	2 U	2 U	3.2	2 U	2 U	2 U
1,1-Dichloroethene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	14.6	2 U	2 U	2 U
1,1-Dichloropropene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	17	20	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	10 U	16 J	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene	2 U	2	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene	2 U	1 J	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Chlorotoluene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	6.4 J	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	2 U	2 U	2 U	14	39	2 U	2 U	2 U	2 U	2 U	2 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Butyl Benzene	2 U	2 U	2 U	49	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Carbon tetrachloride	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroethane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloromethane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	0.6 J	3	18	86	20 U	4.7	2 U	2 U	2.6	2 U	3.1
cis-1,3-Dichloropropene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromochloromethane	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	2 U	1 J	2 U	10 U	20 U	2 U	2 U	2 U	2.3	2 U	2 U
Ethylbenzene	2 U	2 U	2 U	8.1 J	35	2 U	2 U	2 U	2 U	2 U	2 U
Ethylene Dibromide	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Hexachlorobutadiene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Isopropylbenzene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
p&m-Xylene	0.5 J	0.7 J	0.7 J	4 J	34	4 U	4 U	4 U	4 U	4 U	4 U
Methylene Bromide	2 U	2 U	2 U	10 U	20 U	NA	NA	NA	NA	NA	NA
Methylene Chloride	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Monobromobenzene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	2 U	2 U	2 U	328	736	2 U	2 U	6.4	2 U	2 U	2 U
o-Xylene	0.8 J	0.8 J	2 U	10 U	9 J	2 U	2 U	2 U	2 U	2 U	2 U
p-Isopropltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	0.4 J	0.5 J	0.4 J	4 J	13 J	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,2-Dichloroethene	2 U	2 U	1 J	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,3-Dichloropropene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	0.8 J	0.6 J	76 E	60	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	2 U	0.9 J	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	2 U	2 U	2 U	10 U	14 J	2 U	2 U	2 U	2 U	2 U	2 U
tert-Butylbenzene	2 U	2 U	2 U	10 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SHALLOW GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW21D	SWMU318-GW22	SWMU318-GW23	SWMU318-GW24	SWMU318-GW25	SWMU318-GW27	SWMV318-GW28	SWMU318-GW29	SWMU318-GW31	SWMU318-GW32
SAMPLE DATE	6/22/04	6/22/04	6/23/04	6/22/04	6/23/04	6/23/04	6/24/04	6/22/04	2/3/2005	2/3/2005
SAMPLE DEPTH (ft range)	10-14	10-14	10-14	10-14	10-14	10-14	10-14	10-14	12-16	12-16
Volatile Organic Compounds (ug/L)										
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
1,1-Dichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	4.5
1,1-Dichloroethene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	2.6
1,1-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
1,2,3-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U
1,2,4-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U
1,2-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
1,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
1,4-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA
Benzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	7.2
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U
Bromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U
Butyl Benzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA
Carbon tetrachloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
Chlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
Chloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U
Chloroform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
Chloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U
cis-1,2-Dichloroethene	3.5	2 U	2 U	2 U	31.6	2 U	3.8	2	1 U	10
cis-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
Dibromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U
Dichlorodifluoromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U
Ethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
Ethylene Dibromide	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA
Hexachlorobutadiene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U
Isopropylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
p&m-Xylene	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	2 U	2 U
Methylene Bromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U
Monobromobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA
Naphthalene	2 U	2 U	2 U	2 U	2 U	2 U	4.4	2 U	5 U	4.3 J
o-Xylene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
p-Isopropltoluene	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U
Styrene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
Tetrachloroethene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
Toluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
trans-1,2-Dichloroethene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
trans-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U
Trichloroethene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	20
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	5 U	5 U
Vinyl chloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.57 J
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
tert-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SHALLOW GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW33	SWMU318-GW34	SWMU318-GW35	SWMU318-GW36	SWMU318-GW37	SWMU318-GW38	SWMU318-GW39	SWMU318-GW40	SWMU318-GW41	SWMU318-GW42
SAMPLE DATE	2/4/2005	2/2/2005	2/5/2005	2/3/2005	2/3/2005	2/2/2005	2/2/2005	2/2/2005	2/1/2005	2/3/2005
SAMPLE DEPTH (ft range)	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16
Volatile Organic Compounds (ug/L)										
1,1,1,2-Tetrachloroethane	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	10 U	0.43 J	5 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	5 U	5 U	5.5 J	0.48 J	2.4 J	5 U	0.68 J	5 U	5 U	5 U
1,2,3-Trichloropropane	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	5 U	5 U	4.7 J	5 U	25 U	5 U	0.59 J	5 U	5 U	5 U
1,2,4-Trimethylbenzene	2 U	2 U	16 J	2 U	8.6 J	2 U	2 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane	5 U	5 U	50 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	2 U	2 U	6.1 J	2 U	3.4 J	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
2-Chlorotoluene	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1 U	1 U	14	1 U	6.7	1 U	1 U	1 U	1 U	1 U
Bromobenzene	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
Bromochloromethane	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	5 U	5 U	50 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U
Butyl Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	5 U	5 U	50 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U
Chloroform	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	5 U	5 U	50 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
Dibromomethane	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	5 U	5 U	50 U	5.5	25 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	1 U	1 U	14	1 U	6.7	1 U	1 U	1 U	1 U	1 U
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	5 U	5 U	50 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	2 U	2 U	1.3 J	2 U	0.89 J	2 U	2 U	2 U	2 U	2 U
p&m-Xylene	2 U	2 U	22	0.33 J	15	2 U	2 U	2 U	2 U	2 U
Methylene Bromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	5 U	5 U	50 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U
Monobromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	5 U	5 U	1,500	1 J	630	5 U	0.72 J	5 U	5 U	5 U
o-Xylene	1 U	1 U	16	1 U	7.3	1 U	1 U	1 U	1 U	1 U
p-Isopropltoluene	2 U	2 U	9.4 J	2 U	1.6 J	2 U	2 U	2 U	2 U	2 U
Styrene	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	26	1 U	5.5	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	10 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	10 U	0.79 J	5 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	5 U	5 U	50 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	2 U	2 U	2.3 J	2 U	10 U	2 U	2 U	2 U	2 U	2 U
n-Butylbenzene	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	2 U	2 U	20 U	2 U	0.85 J	2 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	2 U	2 U	1.2 J	2 U	0.58 J	2 U	2 U	2 U	2 U	2 U
tert-Butylbenzene	2 U	2 U	20 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI SHALLOW GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW43	SWMU318-GW44	SWMU318-GW45	SWMU318-GW46	SWMU318-GW47	SWMU318-GW48	SWMU318-GW49	SWMU318-GW50	SWMU318-GW51	xceedance Standard C	xceedance Standard T	xceedance Standard T	xceedance Standard Four
SAMPLE DATE	2/2/2005	2/3/2005	2/3/2005	2/6/2005	2/6/2005	2/5/2005	2/6/2005	2/6/2005	2/7/2005				
SAMPLE DEPTH (ft range)	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16				
Volatile Organic Compounds (ug/L)													
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.33 J	3	0	3	0
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4	0	4	0
1,1-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
1,2,3-Trichlorobenzene	5 U	5 U	5 U	5 U	0.95 J	5 U	5 U	5 U	0.52 J	2	0	2	0
1,2,3-Trichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	28	0	28
1,2,4-Trichlorobenzene	5 U	5 U	5 U	5 U	0.86 J	5 U	5 U	5 U	0.45 J	2	0	2	0
1,2,4-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.28 J	0.42 J	4	0	4	0
1,2-Dibromo-3-chloropropane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0	0	0	0
1,2-Dibromoethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	28	0	28
1,2-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.35 J	3	0	3	0
1,3-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0
1,3-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
1,4-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0
2,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	22	0	22	0
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5	0	5	0
Bromobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	28	0	28
Bromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0
Bromodichloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0
Bromoform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0
Bromomethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0	0	0	0
Butyl Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	22	21	22	0
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
Chloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0	0	0	0
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
Chloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0	0	0	0
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1.4	1 U	1 U	1 U	1.7	10	0	16	0
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
Dibromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0
Dibromomethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	28	0	28
Dichlorodifluoromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2	0	2	0
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4	0	4	0
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	21	0	21	0
Hexachlorobutadiene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0	0	0	0
Isopropylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.46 J	2 U	0	0	1	0
p&m-Xylene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4	0	3	0
Methylene Bromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	35	0	35	0
Methylene Chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0	0	0	0
Monobromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	21	0	21	0
Naphthalene	5 U	5 U	1.3 J	0.63 J	1.8 J	2 J	5 U	1 J	0.84 J	7	0	10	0
o-Xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3	0	3	0
p-Isopropltoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	28	0	28
Styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	6	0	6	0
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0	0	0	0
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.4	11	0	7	0
Trichlorofluoromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0	28	0	28
Vinyl chloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2	0	2	0
n-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.35 J	0	28	0	28
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0
sec-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1	0	1	0
tert-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0	0	0	0

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW01-01	SWMU318-GW02-01	SWMU318-GW03-01	SWMU318-GW04-01	SWMU318-GW05-01	SWMU318-GW05-01D	SWMU318-GW06-01	SWMU318-GW06-02	SWMU318-GW06-02D	SWMU318-GW07A-01	SWMU318-GW07-01
SAMPLE DATE	3/19/2004	3/17/2004	3/18/2004	3/18/2004	3/17/2004	3/17/2004	3/17/2004	3/17/2004	3/17/2004	6/24/04	3/18/2004
SAMPLE DEPTH (ft range)	24-28	24-28	24-28	24-28	24-28	24-28	20-24	26-30	26-30	25-29	24-28
Volatile Organic Compounds (ug/L)											
1,1,1,2-Tetrachloroethane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
1,1,1-Trichloroethane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
1,1,2,2-Tetrachloroethane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
1,1,2-Trichloroethane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
1,1-Dichloroethane	20 U	1 J	0.9 J	0.7 J	2 U	2 U	12 J	2 U	2 U	2 U	20 U
1,1-Dichloroethene	20 U	2 U	7	2 U	2 U	2 U	20 U	2 U	2 U	9.2	10 J
1,1-Dichloropropene	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
1,2,3-Trichlorobenzene	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
1,2,4-Trimethylbenzene	10 J	1 J	2 U	1 J	1 J	1 J	13 J	2 U	2 U	2 U	20 U
1,2-Dibromo-3-chloropropane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	20 U	2 U	2 U	2 U	0.4 J	0.4 J	4 J	0.4 J	2 U	2 U	20 U
1,2-Dichloroethane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
1,2-Dichloropropane	20 U	0.3 J	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
1,3,5-Trimethylbenzene	12 J	2 U	2 U	0.6 J	0.6 J	2 U	30	2 U	0.6 J	2 U	20 U
1,3-Dichlorobenzene	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
1,3-Dichloropropane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
1,4-Dichlorobenzene	20 U	0.8 J	0.8 J	2 U	0.8 J	2 U	20 U	2 U	2 U	2 U	20 U
2,2-Dichloropropane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
2-Chlorotoluene	20 U	2 U	2 U	2 U	0.8 J	2 U	13 J	2 U	2 U	2 U	20 U
4-Chlorotoluene	20 U	2 U	2 U	2 U	2 U	0.9 J	20 U	2 U	2 U	2 U	8 J
4-Isopropyltoluene	16 J	0.8 J	2 U	2 U	2 U	2 U	150	2 U	2 U	2 U	20 U
Benzene	73	24	4	4	2 U	2 U	98	0.3 J	0.2 J	2 U	20 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Bromodichloromethane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Bromoform	20 U	2 U	2 U	2 U	2 U	2 U	6 J	2 U	2 U	2 U	20 U
Bromomethane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Butyl Benzene	8 J	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Carbon tetrachloride	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Chlorobenzene	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Chloroethane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Chloroform	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Chloromethane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
cis-1,2-Dichloroethene	16 J	23	800 D	2	2 U	2 U	99	0.2 J	2 U	610	620 D
cis-1,3-Dichloropropene	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Dibromochloromethane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Ethylbenzene	47	2	2 J	0.8 J	0.6 J	0.6 J	91	1 J	1 J	2 U	7 J
Ethylene Dibromide	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Hexachlorobutadiene	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Isopropylbenzene	36	1 J	2 U	1 J	1 J	1 J	76	1 J	1 J	2 U	13 J
p&m-Xylene	60	2 J	2 J	2 J	4 U	2 J	160	2 J	2 J	NA	17 J
Methylene Bromide	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	NA	20 U
Methylene Chloride	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Monobromobenzene	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Naphthalene	1970 D	2 J	2 U	43 D	2 U	2 U	1878 D	2 U	2 U	2 U	31
o-Xylene	28	1 J	1 J	1 J	1 J	2 U	84	2 U	2 U	2 U	20 U
Styrene	20 U	2 U	2 U	2 U	2 U	2 U	11 J	2 U	2 U	2 U	20 U
Tetrachloroethene	7 J	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Toluene	51	2 J	2 J	0.9 J	1 J	1 J	190	1 J	1 J	2 U	10 J
trans-1,2-Dichloroethene	20 U	2 U	4	2 U	2 U	2 U	20 U	2 U	2 U	18.2	5 J
trans-1,3-Dichloropropene	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
Trichloroethene	34	29	1690 D	2	0.8 J	2 U	62	2 U	0.8 J	3130	7120 D
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	20 U	2 U	5	2 U	2 U	2 U	30	2 U	2 U	24.6	20 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	20 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	20 U
sec-Butylbenzene	20 U	2 U	2 U	0.9 J	1 J	0.9 J	9 J	2 U	2 U	2 U	20 U
tert-Butylbenzene	16 J	2 U	2 U	2 U	1 J	2 U	20 U	2 U	2 U	2 U	13 J

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW08-01	SWMU318-GW09-01	SWMU318-GW10-01	SWMU318-GW10-02	SWMU318-GW11-01	SWMU318-GW12-01	SWMU318-GW13-01	SWMU318-GW14-01	SWMU318-GW15-01	SWMU318-GW16-01	SWMU318-GW17-01	SWMU318-GW18-01
SAMPLE DATE	3/17/2004	3/19/2004	3/20/2004	3/20/2004	3/20/2004	3/20/2004	3/20/2004	3/22/2004	3/22/2004	6/21/04	6/23/04	6/21/04
SAMPLE DEPTH (ft range)	24-28	24-28	20-24	26-30	24-28	24-28	24-28	26-30	24-28	25-29	25-29	25-29
Volatile Organic Compounds (ug/L)												
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
1,1,1-Trichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
1,1,2-Trichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
1,1-Dichloroethane	2 U	2 J	1 J	2 U	0.7 J	3	2 U	25 U	100 U	5 U	2 U	2 U
1,1-Dichloroethene	2 U	2 U	4	2 U	2 U	1 J	2 J	25 U	100 U	5 U	2 U	2 U
1,1-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
1,2,3-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U	1 J	2 U	25 U	100 U	5 U	2 U	2 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	31	89 J	5 U	2 U	2 U
1,2-Dibromo-3-chloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
1,2-Dichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
1,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	45 J	5 U	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
1,3-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
1,4-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
2,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	69 J	5 U	2 U	2 U
Benzene	2 U	2 U	1 J	2 U	2 U	11	8	30	220	5 U	2 U	2 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Bromodichloromethane	2 U	2 J	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Bromoform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Bromomethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Butyl Benzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	38	100 U	5 U	2 U	2 U
Carbon tetrachloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Chlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Chloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Chloroform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Chloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
cis-1,2-Dichloroethene	2	8	575	0.8 J	0.9 J	6	23	90	100 U	37.5	30.5	25.9
cis-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Dibromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	2 U	0.6 J	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Ethylbenzene	0.6 J	2 U	2	2 U	2 U	0.5 J	2 U	23 J	144	5 U	2 U	2 U
Ethylene Dibromide	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Hexachlorobutadiene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Isopropylbenzene	2 U	2 U	1 J	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
p&m-Xylene	2 J	4 U	5	0.8 J	4 U	0.7 J	4 U	26	272	10 U	4 U	4 U
Methylene Bromide	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	NA	NA	NA
Methylene Chloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Monobromobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Naphthalene	2 U	5	2 U	20	2 U	22	2 U	945	3040	5 U	9.8	2 U
o-Xylene	2 U	2 U	4	0.5 J	2 U	0.8 J	2 U	25 U	149	5 U	2 U	2 U
Styrene	2 U	2 U	0.7 J	2 U	2 U	0.6 J	2 U	25 U	100 U	5 U	2 U	2 U
Tetrachloroethene	2 U	0.9 J	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Toluene	0.8 J	2 J	35	0.6 J	0.4 J	0.9 J	0.5 J	25 U	334	5 U	2 U	2 U
trans-1,2-Dichloroethene	2 U	0.6 J	2 J	2 U	2 U	0.8 J	0.9 J	25 U	100 U	5 U	2 U	2.3
trans-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
Trichloroethene	0.9 J	29	965	0.8 J	1 J	11	473	70	100 U	7.8	18.4	12.9
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	2 U	0.8 J	93	2 U	2 U	2 J	2 U	25 U	100 U	5.5	5.7	2 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U
sec-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	64 J	5 U	2 U	2 U
tert-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	25 U	100 U	5 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI INTERMEDIATE GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SMWU318-GW19-01	SWMU318-GW20-01	SWMU318-GW21-01	SWMU318-GW22-01	SWMU-318-GW23-01	SWMU318-GW24-01	SWMU318-GW25-01	SWMU318-GW26-01	SWMU318-GW27-01	SWMV318-GW28-01	SWMU318-GW29-01	SWMV318-GW30-01
SAMPLE DATE	6/21/04	6/21/04	6/22/04	6/22/04	6/23/04	6/22/04	6/23/04	6/23/04	6/23/04	6/24/04	6/22/04	6/24/04
SAMPLE DEPTH (ft range)	25-29	25-29	25-29	25-29	25-29	25-29	25-29	25-29	25-29	25-29	23-27	25-29
Volatile Organic Compounds (ug/L)												
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	3.2	2 U	2 U	2 U	2 U
1,1-Dichloroethene	2 U	11.3	2 U	2 U	2 U	2 U	2 U	15.4	2 U	2 U	2 U	2 U
1,1-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	13.9	2 U	2 U
1,2-Dibromo-3-chloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4.5	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	11.4	2 U	2 U	2 U	2 U	2 U	2.4	2 U	2 U	27.7	6.9	2 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butyl Benzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Carbon tetrachloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	4.5	417	101	2 U	336	2 U	2 U	2 U	2 U	2.5	2.4	2 U
cis-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	27.2	2 U	2 U
Ethylene Dibromide	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Hexachlorobutadiene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Isopropylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
p&m-Xylene	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	27.2	4 U	4 U
Methylene Bromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Monobromobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	530	108	5.6
o-Xylene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,2-Dichloroethene	2 U	14.4	8.5	2 U	23.2	2 U	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	2.4	47.6	2 U	2 U	102	2 U	5.2	2 U	2 U	14.4	2.7	2 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	2 U	63.1	2 U	2 U	203	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
tert-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI DEEP GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW01-02	SWMU318-GW02-02	SWMU318-GW03-02	SWMU318-GW04-02	SWMU318-GW05-02	SWMU318-GW07-02	SWMU318-GW08-02	SWMU318-GW09-02	SWMU318-GW09-02D	SWMU318-GW11-02	SWMU318-GW11-02D
SAMPLE DATE	3/19/2004	3/17/2004	3/18/2004	3/18/2004	3/17/2004	3/18/2004	3/17/2004	3/19/2004	3/19/2004	3/20/2004	3/20/2004
SAMPLE DEPTH (ft range)	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)											
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	1 J	2 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	2 U	2 U	2 U	2 U	0.4 J	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene	2 U	0.8 J	1 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	2 U	0.7 J	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	0.3 J	1 J	2 U	2 U	2 U	0.8 J	2 U	41	42	2 U	2 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butyl Benzene	2 U	2 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Carbon Tetrachloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	2 U	0.3 J	1 J	2 U	2 U	15	0.3 J	64	68	0.4 J	2 U
cis-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	1 J	1 J	1 J	1 J	2 J	0.9 J	1 J	11	12	2 U	2 U
Ethylene Dibromide	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Hexachlorobutadiene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Isopropylbenzene	1 J	1 J	2 U	1 J	1 J	1 J	2 U	2 U	2 U	2 U	2 U
p&m-Xylene	2 J	2 J	2 J	2 J	2 J	2 J	2 J	8	9	0.5 J	0.5 J
Methylene Bromide	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Chloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Monobromobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	20	2 U	9	2 J	2 U	2 U	2 U	2 U	2 U	2 U	1 J
o-Xylene	1 J	1 J	2 U	2 U	2 U	1 J	1 J	7	8	2 U	2 U
Styrene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 J	1 J	2 U	2 U
Tetrachloroethene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	1 J	1 J	0.9 J	1 J	1 J	0.9 J	1 J	4	4	0.5 J	0.4 J
trans-1,2-Dichloroethene	2 U	2 U	2 U	2 U	2 U	0.4 J	2 U	2 U	2 U	2 U	2 U
trans-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	2 U	0.7 J	3	2 U	2 U	28	2 U	0.8 J	2 J	2 U	2 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	2 U	2 U	2 U	2 U	2 U	1 J	2 U	2 U	2 J	2 U	2 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	0.9 J	0.9 J	2 U	2 U	2 U	0.9 J	2 U	2 U	2 U	2 U	2 U
tert-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI DEEP GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW12-02	SWMU318-GW13-02	SWMU318-GW14-02	SWMU318-GW15-02	SWMU318-16-02	SWMU318-GW17-02	SWMU318-GW18-02	SWMU318-GW19-02	SWMU318-GW20-02	SWMU318-GW21-02	SWMU318-GW22-02	SWMU318-GW23-02	SWMU318-GW24-02
SAMPLE DATE	3/20/2004	3/20/2004	3/22/2004	3/22/2004	6/21/04	6/23/2004	6/21/04	6/21/2004	6/21/04	6/22/04	6/22/04	6/23/04	6/22/04
SAMPLE DEPTH (ft range)	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)													
1,1,1,2-Tetrachloroethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2,2-Tetrachloroethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	2 U	2 J	5 U	5 U	2 U	2.6	2 U	2 U	2 U	2.8	2 U	2 U	2 U
1,1-Dichloropropene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3,5-Trimethylbenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Chlorotoluene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	2 U	2 U	5 U	16	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Butyl Benzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Carbon Tetrachloride	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloromethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	0.6 J	72	5 U	2.1 J	43.2	92.1	4.3	171	31.9	83.9	2 U	10	2 U
cis-1,3-Dichloropropene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromochloromethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	2 U	2 U	5 U	3.1 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylene Dibromide	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Hexachlorobutadiene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Isopropylbenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
p&m-Xylene	0.5 J	0.7 J	5 U	5 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Methylene Bromide	2 U	2 U	5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	2 U	1 J	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Monobromobenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	1 J	2 U	5 U	11	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
o-Xylene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Styrene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	0.5 J	0.8 J	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,2-Dichloroethene	2 U	0.9 J	5 U	5 U	3.7	16.4	2 U	3.8	2.9	9.1	2 U	2 U	2 U
trans-1,3-Dichloropropene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	2 U	13	5 U	5 U	2 U	2 U	2 U	2.6	5.3	2 U	2 U	2 U	2 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	2	1 J	5 U	5 U	2 U	172	2 U	93.9	2 U	28.6	2 U	3.7	2 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
tert-Butylbenzene	2 U	2 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI DEEP GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW25-02	SWMU318-GW25-02D	SWMU318-GW26-02	SWMU318-GW28-02	SWMU318-GW28-02D	SWMU318-GW29-02	SWMU318-GW30-02	SWMU318-GW31-02	SWMU318-GW32-02	SWMU318-GW33-02	SWMU318-GW34-02	SWMU318-GW35-02
SAMPLE DATE	6/23/04	6/23/04	6/23/04	6/24/04	6/24/04	6/22/04	6/24/04	2/3/2005	2/3/2005	2/4/2005	2/2/2005	2/5/2005
SAMPLE DEPTH (ft range)	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)												
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1.4	1 U	1 U	1 U	1 U
1,1-Dichloroethene	2 U	2 U	3.3	2 U	2 U	2 U	2 U	0.48 J	1 U	1 U	0.99 J	1 U
1,1-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U	5 U	5 U	0.46 J
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.9	1 U	0.36 J	0.89 J	14
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U
Bromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U	5 U	5 U	5 U
Butyl Benzene	1 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA	NA	NA	NA
Carbon Tetrachloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U	5 U	5 U	5 U
Chloroform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	2 U	2 U	3.7	2 U	2 U	6.1	2 U	5	1 U	1 U	32	40
cis-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
Ethylene Dibromide	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA	NA	NA	NA
Hexachlorobutadiene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
p&m-Xylene	4 U	4 U	4 U	4 U	4 U	4 U	4 U	2 U	2 U	2 U	2 U	2 U
Methylene Bromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	5 U	5 U	5 U	5 U
Monobromobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA	NA	NA	NA
Naphthalene	2 U	2 U	2 U	12.7	7.7	7.4	2 U	1 J	5 U	5 U	5 U	0.83 J
o-Xylene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
Styrene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
Toluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	2.6	1 U
trans-1,2-Dichloroethene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	2 U	2 U	2 U	2 U	2 U	2 U	12.2	8.1	0.48 J	1 U	400	1 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1.1 J	2 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
tert-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI DEEP GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW36-02	SWMU318-GW36-02D	SWMU318-GW37-02	SWMU318-GW38-02	SWMU318-GW39-02	SWMU318-GW40-02	SWMU318-GW41-02	SWMU318-GW42-02	SWMU318-GW43-02	SWMU318-GW44-02	SWMU318-GW45-02	SWMU318-GW46-02
SAMPLE DATE	2/3/2005	2/3/2005	2/3/2005	2/2/2005	2/2/2005	2/2/2005	2/1/2005	2/3/2005	2/2/2005	2/3/2005	2/3/2005	2/6/2005
SAMPLE DEPTH (ft range)	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)												
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	0.43 J	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	3.8	1 U	4.5	0.56 J	0.54 J	0.5 J
1,1-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	2.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	1 U	1 U	1 U	1 U	2.3	1.2	1.5 J	1.9	0.98 J	1.6	1.6	0.94 J
Bromobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	5 U	5 U	5 U	5 U	5 U	5 U	4.3	5 U	5 U	5 U	5 U	5 U
Butyl Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	0.56 J	98	1.4	38	95	34	51
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dibromomethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	0.45 J	1 U	1 U	1 U	1 U	1 U	1 U
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
p&m-Xylene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Bromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Monobromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	4.4 J	5 U	4.7 J	5 U	5 U	5 U	5 U	0.64 J	5 U	5 U	0.9 J	5 U
o-Xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1.8	0.77 J	1 U	0.92 J	0.91 J	12	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	28	1 U	8.8	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	0.42 J	1 U	90	0.94 J	1	1 U	1.1	0.36 J
Trichlorofluoromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	2 U	2 U	2 U	2 U	2 U	2 U	20	3.1	23	172	170	36
n-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
tert-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS
RFI DEEP GROUNDWATER, SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW47-02	SWMU318-GW48-02	SWMU318-GW49-02	SWMU318-GW50-02	SWMU318-GW51-02
SAMPLE DATE	2/6/2005	2/5/2005	2/6/2005	2/6/2005	2/7/2005
SAMPLE DEPTH (ft range)	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)					
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	0.67 J	1 U	1 U	1 U	1 U
1,1-Dichloropropene	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	5 U	5 U	5 U	5 U	0.43 J
1,2,3-Trichloropropane	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	2 U	0.37 J
1,2-Dibromo-3-chloropropane	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U
Benzene	0.53 J	1 U	0.41 J	0.53 J	1 U
Bromobenzene	2 U	2 U	2 U	2 U	2 U
Bromochloromethane	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	2 U	2 U	2 U
Bromomethane	5 U	5 U	5 U	5 U	5 U
Butyl Benzene	NA	NA	NA	NA	NA
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U
Chloroethane	5 U	5 U	5 U	5 U	5 U
Chloroform	1 U	1 U	1 U	1 U	1 U
Chloromethane	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	6.1	1 U	1 U	1 U	1.4
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	2 U	2 U	2 U	2 U	2 U
Dibromomethane	2 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U
Ethylene Dibromide	NA	NA	NA	NA	NA
Hexachlorobutadiene	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	2 U	2 U	2 U	2 U	2 U
p&m-Xylene	2 U	2 U	2 U	2 U	2 U
Methylene Bromide	NA	NA	NA	NA	NA
Methylene Chloride	5 U	5 U	5 U	5 U	5 U
Monobromobenzene	NA	NA	NA	NA	NA
Naphthalene	5 U	0.68 J	1.2 J	5 U	0.6 J
o-Xylene	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	0.4 J	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U
Trichloroethene	0.58 J	1 U	1 U	1 U	1 U
Trichlorofluoromethane	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	5.4	2 U	2 U	2 U	2 U
n-Butylbenzene	2 U	2 U	2 U	2 U	0.31 J
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U
sec-Butylbenzene	2 U	2 U	2 U	2 U	2 U
tert-Butylbenzene	2 U	2 U	2 U	2 U	2 U

APPENDIX F
GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT NO. 20 - SITE 86
MONITORING AND O&M SUPPORT
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	IR86-AS428-GW06-05A	IR86-GW08IW-05A	IR86-GW10IW-05A	IR86-GW15IW-05A	IR86-GW15DW-05A	IR86-GW16IW-05A	IR86-GW19DW-05A
Date	25-Jan-05	25-Jan-05	25-Jan-05	25-Jan-05	25-Jan-05	25-Jan-05	25-Jan-05
VOLATILES (ug/L)							
1,1,1-trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-tetrachloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-dichloroethane	5 U	5 U	7	5 U	5 U	5 U	5 U
1,1-dichloroethene	3 J	5 U	5 U	4 J	5 U	5 UJ	5 U
1,2-dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-dichloroethene	270 D	10 U	72	420 D	10 U	2 J	10 U
1,2-dichloropropane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-butanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-hexanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	5 J	5 U	3 J	3 J	5 U	0.3 J	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U
Carbon Disulfide	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cis-1,2-dichloroethene	260 D	5 U	70	400 D	5 U	2 J	5 U
Cis-1,3-dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	5 U	5 U	1 J	5 U	5 U	5 U	5 U
M,p-xylenes	10 U	10 U	1 J	10 U	10 U	10 U	10 U
Methylene Chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ortho-xylene	5 U	5 U	0.8 J	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5 U	5 U	240 D	5 U	5 U	5 U	5 U
Toluene	5 U	5 U	3 J	5 U	5 U	5 U	5 U
Trans-1,2-dichloroethene	5	5 U	2 J	14	5 U	5 U	5 U
Trans-1,3-dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	1 J	0.5 J	78	0.5 J	5 U	4 J	5 U
Vinyl Chloride	5	2 U	36	2	2 U	2 U	2 U
Xylene (total)	15 U	15 U	2 J	15 U	15 U	15 U	15 U

APPENDIX F
GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT NO. 20 - SITE 86
MONITORING AND O&M SUPPORT
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	IR86-GW23IW-05A	IR86-GW24IW-05A	IR86-GW25IW-05A	IR86-GW28IW-05A	IR86-GW29IW-05A	IR86-GW30IW-05A	IR86-GW31IW-05A
Date	25-Jan-05	25-Jan-05	25-Jan-05	26-Jan-05	26-Jan-05	26-Jan-05	25-Jan-05
VOLATILES (ug/L)							
1,1,1-trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-tetrachloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-dichloroethane	5 U	5 U	29	5 U	5 U	5 U	5 U
1,1-dichloroethene	0.4 J	5 U	230 D	5 U	0.6 J	5 U	5 U
1,2-dichloroethane	5 U	5 U	2 J	5 U	5 U	5 U	5 U
1,2-dichloroethene	48	10 U	26	10 U	58	33	1 J
1,2-dichloropropane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-butanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-hexanone	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
4-methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	0.8 J	5 U	5 U	5 U	0.9 J	0.8 J	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Disulfide	5 U	0.4 J	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cis-1,2-dichloroethene	47	5 U	26	0.5 J	58	30	1 J
Cis-1,3-dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	5 U	0.4 J	2 J	5 U	5 U	5 U	5 U
M,p-xylenes	10 U	10 U	0.9 J	10 U	10 U	10 U	10 U
Methylene Chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ortho-xylene	5 U	5 U	0.8 J	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	5 U	5 U	0.6 J	5 U	5 U	5 U	5 U
Trans-1,2-dichloroethene	0.5 J	5 U	5 U	5 U	5 U	3 J	5 U
Trans-1,3-dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	5 U	5 U	44	0.6 J	300 D	12	5 U
Vinyl Chloride	1 J	2 U	1 J	2 U	2 U	1 J	2 U
Xylene (total)	15 U	15 U	2 J	15 U	15 U	15 U	15 U

APPENDIX F
GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT NO. 20 - SITE 86
MONITORING AND O&M SUPPORT
MCB, CAMP LEJEUNE, NORTH CAROLINA

Sample ID	IR86-GW31DW-05A	IR86-GW32IW-05A	IR86-GW33IW-05A	IR86-GW33DW-05A	IR86-GW34IW-05A
Date	25-Jan-05	26-Jan-05	25-Jan-05	25-Jan-05	26-Jan-05
VOLATILES (ug/L)					
1,1,1-trichloroethane	5 U	5 U	5 U	5 U	5 U
1,1,2,2-tetrachloroethane	5 U	5 U	5 U	5 U	5 U
1,1,2-trichloroethane	5 U	5 U	5 U	5 U	5 U
1,1-dichloroethane	5 U	5 U	5 U	5 U	5 U
1,1-dichloroethene	5 U	0.7 J	0.8 J	5 U	5 U
1,2-dichloroethane	5 U	5 U	5 U	5 U	5 U
1,2-dichloroethene	10 U	28	54	10 U	0.9 J
1,2-dichloropropane	5 U	5 U	5 U	5 U	5 U
2-butanone	10 U	10 U	10 U	10 U	10 U
2-hexanone	10 U	10 UJ	10 U	10 U	10 UJ
4-methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	10 U	10 U	10 U	10 U
Benzene	5 U	3 J	1 J	5 U	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 U	5 U
Bromomethane	5 U	5 U	5 U	5 UJ	5 U
Carbon Disulfide	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U	5 U
Chloroethane	5 U	5 U	5 U	5 U	5 U
Chloroform	5 U	5 U	5 U	5 U	5 U
Chloromethane	5 U	5 U	5 U	5 U	5 U
Cis-1,2-dichloroethene	5 U	28	53	5 U	0.9 J
Cis-1,3-dichloropropene	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	5 U	5 U	5 U	5 U	5 U
M,p-xylenes	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	5 U	5 U	5 U	5 U	5 U
Ortho-xylene	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5 U	5 U	5 U	5 U	5 U
Toluene	5 U	5 U	5 U	5 U	5 U
Trans-1,2-dichloroethene	5 U	5 U	0.8 J	5 U	5 U
Trans-1,3-dichloropropene	5 U	5 U	5 U	5 U	5 U
Trichloroethene	5 U	20	290 D	5 U	4 J
Vinyl Chloride	2 U	2 U	0.8 J	2 U	2 U
Xylene (total)	15 U	15 U	15 U	15 U	15 U

EQUIPMENT RINSATE ANALYTICAL RESULTS
RCRA INVESTIGATION
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	ER01		ER02		ER03		ER04		ER06	
SAMPLE DATE	03-18-2004		03-20-2004		03-22-2004		03-23-2004		04-06-2004	
VOLATILES (ug/L)										
1,1,1-trichloroethane	10	U	10	U	10	U	10	U	10	U
1,1,2,2-tetrachloroethane	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	10	U	10	U	10	U	10	U	10	U
1,1,2-trichloroethane	10	U	10	U	10	U	10	U	10	U
1,1-dichloroethane	10	U	10	U	10	U	10	U	10	U
1,1-dichloroethene	10	U	10	U	10	U	10	U	10	U
1,2,4-trichlorobenzene	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethylene (total)	10	U	10	U	10	U	10	U	10	U
1,2-dibromo-3-chloropropane	10	U	10	R	10	R	10	R	10	U
1,2-dichlorobenzene	10	U	10	U	10	U	10	U	10	U
1,2-dichloroethane	10	U	10	U	10	U	10	U	10	U
1,2-dichloropropane	10	U	10	U	10	U	10	U	10	U
1,3-dichlorobenzene	10	U	10	U	10	U	10	U	10	U
1,4-dichlorobenzene	10	U	10	U	10	U	10	U	10	U
2-butanone	10	UJ	10	U	10	U	10	U	10	UJ
2-hexanone	10	U	10	U	10	U	10	U	10	U
4-methyl-2-pentanone	10	U	10	U	10	U	10	U	10	U
ACETONE	10	UJ	3	J	3	J	2	J	10	UJ
BENZENE	10	U	10	U	10	U	10	U	10	U
BROMODICHLOROMETHANE	10	U	10	U	10	U	10	U	10	U
BROMOFORM	10	U	10	U	10	U	10	U	10	U
BROMOMETHANE	10	U	10	U	10	U	10	U	10	UJ
CARBON DISULFIDE	10	U	10	U	10	U	10	U	10	U
CARBON TETRACHLORIDE	10	U	10	U	10	U	10	U	10	U
CHLOROBENZENE	10	U	10	U	10	U	10	U	10	U
CHLOROETHANE	10	U	10	U	10	U	10	U	10	U
CHLOROFORM	10	U	10	U	10	U	10	U	10	U
CHLOROMETHANE	10	U	10	U	10	U	10	U	10	U
CIS-1,2-DICHLOROETHENE	10	U	10	U	10	U	10	U	10	U
CIS-1,3-DICHLOROPROPENE	10	U	10	U	10	U	10	U	10	U
CYCLOHEXANE	10	U	10	U	10	U	10	U	10	U
DIBROMOCHLOROMETHANE	10	U	10	U	10	U	10	U	10	U
DICHLORODIFLUOROMETHANE	10	U	10	U	10	U	10	U	10	U
ETHYLBENZENE	10	U	10	U	10	U	10	U	10	U
Ethylene Dibromide	10	U	10	U	10	U	10	U	10	U
ISOPROPYLBENZENE	10	U	10	U	10	U	10	U	10	U
M-,P-XYLENE	10	U	10	U	10	U	10	U	10	U
METHYL ACETATE	10	U	10	U	10	U	10	U	10	U
METHYL TERT-BUTYL ETHER	10	U	10	U	10	U	10	U	10	U
METHYLCYCLOHEXANE	10	U	10	U	10	U	10	U	10	U
METHYLENE CHLORIDE	10	U	10	U	10	U	10	U	10	U
O-XYLENE	10	U	10	U	10	U	10	U	10	U
STYRENE	10	U	10	U	10	U	10	U	10	U
TETRACHLOROETHENE	10	U	10	U	10	U	10	U	10	U
TOLUENE	10	U	10	U	10	U	10	U	10	U
TRANS-1,2-DICHLOROETHENE	10	U	10	U	10	U	10	U	10	U
TRANS-1,3-DICHLOROPROPENE	10	U	10	U	10	U	10	U	10	U
TRICHLOROETHENE	10	U	10	U	10	U	10	U	10	U
TRICHLOROFLUOROMETHANE	10	U	10	U	10	U	10	U	10	U
VINYL CHLORIDE	10	U	10	U	10	U	10	U	10	U
XYLENES (TOTAL)	10	U	10	U	10	U	10	U	10	U
SEMIVOLATILES (ug/L)										
1,1-Biphenyl	10	U	10	U	10	U	10	UJ	10	U
2,2'-oxybis (1-chloropropane)	10	U	10	U	10	U	10	UJ	10	U
2,4,5-trichlorophenol	25	U	25	U	25	U	25	UJ	25	U

EQUIPMENT RINSATE ANALYTICAL RESULTS
RCRA INVESTIGATION
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	ER01		ER02		ER03		ER04		ER06	
SAMPLE DATE	03-18-2004		03-20-2004		03-22-2004		03-23-2004		04-06-2004	
2,4,6-trichlorophenol	10	U	10	UJ	10	U	10	UJ	10	U
2,4-dichlorophenol	10	U	10	U	10	U	10	UJ	10	U
2,4-dimethylphenol	10	U	10	U	10	U	10	UJ	10	U
2,4-dinitrophenol	25	U	25	U	25	U	25	UJ	25	U
2,4-dinitrotoluene	10	U	10	U	10	U	10	UJ	10	U
2,6-dinitrotoluene	10	U	10	U	10	U	10	UJ	10	U
2-chloronaphthalene	10	U	10	U	10	U	10	UJ	10	U
2-chlorophenol	10	U	10	U	10	U	10	UJ	10	U
2-methylnaphthalene	10	U	10	U	10	U	10	UJ	10	U
2-methylphenol	10	U	10	U	10	U	10	UJ	10	U
2-nitroaniline	25	U	25	U	25	U	25	UJ	25	U
2-nitrophenol	10	U	10	U	10	U	10	UJ	10	U
3,3'-dichlorobenzidine	10	UJ	10	U	10	U	10	UJ	10	U
3-nitroaniline	25	U	25	U	25	U	25	UJ	25	U
4,6-dinitro-2-methyl-phenol	25	U	25	U	25	U	25	UJ	25	U
4-NITROANILINE	25	UJ	25	U	25	UJ	25	UJ	25	UJ
4-NITROPHENOL	25	U	25	U	25	U	25	UJ	25	U
4-bromophenyl Phenyl Ether	10	U	10	U	10	U	10	UJ	10	U
4-chloro-3-methylphenol	10	U	10	U	10	U	10	UJ	10	U
4-chloroaniline	10	U	10	U	10	U	10	UJ	10	U
4-chlorophenyl Phenyl Ether	10	U	10	U	10	U	10	UJ	10	U
4-methylphenol	10	U	10	U	10	U	10	UJ	10	U
ACENAPHTHENE	10	U	10	U	10	U	10	UJ	10	U
ACENAPHTHYLENE	10	U	10	U	10	U	10	UJ	10	U
ACETOPHENONE	10	U	10	U	10	U	10	UJ	10	U
ANTHRACENE	10	U	10	U	10	U	10	UJ	10	U
ATRAZINE	10	U	10	U	10	U	10	UJ	10	U
BENZALDEHYDE	10	U	10	U	10	U	10	UJ	10	U
BENZO(A)ANTHRACENE	10	U	10	U	10	U	10	UJ	10	U
BENZO(A)PYRENE	10	U	10	U	10	U	10	UJ	10	U
BENZO(B)FLUORANTHENE	10	U	10	U	10	U	10	UJ	10	UJ
BENZO(K)FLUORANTHENE	10	U	10	U	10	U	10	UJ	10	U
BENZO[G,H,I]PERYLENE	10	U	10	U	10	U	10	UJ	10	U
BIS(2-CHLOROETHOXY) METHANE	10	U	10	U	10	U	10	UJ	10	U
BIS(2-CHLOROETHYL) ETHER	10	U	10	U	10	U	10	UJ	10	U
BIS(2-ETHYLHEXYL) PHTHALATE	10	U	10	U	10	U	0.6	J	10	U
BUTYL BENZYL PHTHALATE	10	U	10	U	10	U	10	UJ	10	U
CAPROLACTAM	10	U	10	U	10	U	10	UJ	10	U
CARBAZOLE	10	U	10	U	10	U	10	UJ	10	U
CHRYSENE	10	U	10	U	10	U	10	UJ	10	U
DI-N-BUTYL PHTHALATE	10	U	10	U	0.4	J	0.4	J	10	U
DI-N-OCTYLPHTHALATE	10	U	10	U	10	U	10	UJ	10	U
DIBENZO(A,H)ANTHRACENE	10	U	10	U	10	U	10	UJ	10	U
DIBENZOFURAN	10	U	10	U	10	U	10	UJ	10	U
DIETHYL PHTHALATE	10	U	10	U	10	U	10	UJ	10	U
DIMETHYL PHTHALATE	10	U	10	U	10	U	10	UJ	10	U
FLUORANTHENE	10	U	10	U	10	U	10	UJ	10	U
FLUORENE	10	U	10	U	10	U	10	UJ	10	U
HEXACHLOROBENZENE	10	U	10	U	10	U	10	UJ	10	U
HEXACHLOROBUTADIENE	10	U	10	U	10	U	10	UJ	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	10	U	10	UJ	10	UJ	10	U
HEXACHLOROETHANE	10	U	10	U	10	U	10	UJ	10	U
INDENO(1,2,3-CD)PYRENE	10	U	10	U	10	U	10	UJ	10	U
ISOPHORONE	10	U	10	U	10	U	10	UJ	10	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	10	U	10	U	10	UJ	10	U
N-NITROSODIPHENYLAMINE	10	U	10	U	10	U	10	UJ	10	U
NAPHTHALENE	10	U	10	U	10	U	10	UJ	10	U
NITROBENZENE	10	U	10	U	10	U	10	UJ	10	U
PENTACHLOROPHENOL	25	U	25	U	25	U	25	UJ	25	U
PHENANTHRENE	10	U	10	U	10	U	10	UJ	10	U

EQUIPMENT RINSATE ANALYTICAL RESULTS
RCRA INVESTIGATION
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	ER01		ER02		ER03		ER04		ER06	
SAMPLE DATE	03-18-2004		03-20-2004		03-22-2004		03-23-2004		04-06-2004	
PHENOL	10	U	10	U	10	U	10	UJ	10	U
PYRENE	10	U	10	U	10	U	10	UJ	10	U
PCB - PEST (ug/L)										
4,4'-DDD									0.1	U
4,4'-DDE									0.1	U
4,4'-DDT									0.1	U
ALDRIN									0.05	U
ALPHA BHC									0.05	U
ALPHA-CHLORDANE									0.05	U
BETA BHC									0.05	U
DELTA BHC									0.05	U
DIELDRIN									0.1	U
ENDOSULFAN I									0.05	U
ENDOSULFAN II									0.1	U
ENDOSULFAN SULFATE									0.1	U
ENDRIN									0.1	U
ENDRIN ALDEHYDE									0.1	U
ENDRIN KETONE									0.1	U
GAMMA BHC									0.05	U
GAMMA-CHLORDANE									0.05	U
HEPTACHLOR									0.05	U
HEPTACHLOR EPOXIDE									0.05	U
METHOXYCHLOR									0.5	U
TOXAPHENE									5	U
METALS (ug/L)										
ARSENIC					2.13	U	2.13	U	2.13	U
BARIUM					0.23	U	0.23	U	0.23	U
CADMIUM					0.33	B	0.25	U	0.55	U
CHROMIUM					0.88	U	0.88	U	0.88	U
LEAD					1.56	U	1.56	U	1.56	U
MERCURY					0.01	U	0.01	U	0.01	U
SELENIUM					2.32	U	2.32	U	2.32	U
SILVER					1.16	U	1.16	U	1.16	U

SWMU318-ER01-04B	6/22/04 8:44:40 AM	6/21/04	2:25:00 PM
Analyte	txtAnalysisDate	AnalysisResult	
1,1,1,2-Tetrachloroethane	6/22/04	<2 µg/l	
1,1,1-Trichloroethane	6/22/04	<2 µg/l	
1,1,2,2-Tetrachloroethane	6/22/04	<2 µg/l	
1,1,2-Trichloroethane	6/22/04	<2 µg/l	
1,1-Dichloroethane	6/22/04	<2 µg/l	
1,1-Dichloroethene	6/22/04	<2 µg/l	
1,1-Dichloropropene	6/22/04	<2 µg/l	
1,2,3-Trichlorobenzene	6/22/04	<2 µg/l	
1,2,4-Trichlorobenzene	6/22/04	<2 µg/l	
1,2,4-Trimethylbenzene	6/22/04	<2 µg/l	
1,2-Dibromo-3-chloropropane	6/22/04	<2 µg/l	
1,2-Dibromoethane	6/22/04	<2 µg/l	
1,2-Dichlorobenzene	6/22/04	<2 µg/l	
1,2-Dichloroethane	6/22/04	<2 µg/l	
1,2-Dichloropropane	6/22/04	<2 µg/l	
1,3,-Dichlorobenzene	6/22/04	<2 µg/l	
1,3,5-Trimethylbenzene	6/22/04	<2 µg/l	
1,3-Dichloropropane	6/22/04	<2 µg/l	
1,4,-Dichlorobenzene	6/22/04	<2 µg/l	
2,2-Dichloropropane	6/22/04	<2 µg/l	
2-Chlorotoluene	6/22/04	<2 µg/l	
4-Chlorotoluene	6/22/04	<2 µg/l	
4-Isopropyltoluene	6/22/04	<2 µg/l	
Benzene	6/22/04	<2 µg/l	
Bromobenzene	6/22/04	<2 µg/l	
Bromochloromethane	6/22/04	<2 µg/l	
Bromodichloromethane	6/22/04	<2 µg/l	
Bromoform	6/22/04	<2 µg/l	
Bromomethane	6/22/04	<2 µg/l	
Carbon tetrachloride	6/22/04	<2 µg/l	
Chlorobenzene	6/22/04	<2 µg/l	
Chloroethane	6/22/04	<2 µg/l	
Chloroform	6/22/04	<2 µg/l	
Chloromethane	6/22/04	<2 µg/l	
cis-1,2-Dichloroethene	6/22/04	<2 µg/l	
cis-1,3-Dichloropropene	6/22/04	<2 µg/l	
Dibromochloromethane	6/22/04	<2 µg/l	
Dibromomethane	6/22/04	<2 µg/l	
Dichlorodifluoromethane	6/22/04	<2 µg/l	
Ethylbenzene	6/22/04	<2 µg/l	
Hexachlorobutadiene	6/22/04	<2 µg/l	
Isopropylbenzene (Cumene)	6/22/04	<2 µg/l	
Methylene Chloride	6/22/04	<2 µg/l	
n-butylbenzene	6/22/04	<2 µg/l	
n-Propylbenzene	6/22/04	<2 µg/l	
Naphthalene	6/22/04	<2 µg/l	
o-Xylene	6/22/04	<2 µg/l	
p and m-Xylene	6/22/04	<4 µg/l	
sec-butylbenzene	6/22/04	<2 µg/l	
Styrene	6/22/04	<2 µg/l	
tert-butylbenzene	6/22/04	<2 µg/l	
Tetrachloroethene	6/22/04	<2 µg/l	
Toluene	6/22/04	<2 µg/l	
trans-1,2-Dichloroethene	6/22/04	<2 µg/l	
trans-1,3-Dichloropropene	6/22/04	<2 µg/l	
Trichloroethene	6/22/04	<2 µg/l	
Vinyl Chloride	6/22/04	<2 µg/l	

SWMU318-ER02-04B	6/24/04 8:14:38 AM	6/23/04	2:08:00 PM
Analyte	txtAnalysisDate	AnalysisResult	
1,1,1,2-Tetrachloroethane	6/24/04	<2 µg/l	
1,1,1-Trichloroethane	6/24/04	<2 µg/l	
1,1,2,2-Tetrachloroethane	6/24/04	<2 µg/l	
1,1,2-Trichloroethane	6/24/04	<2 µg/l	
1,1-Dichloroethane	6/24/04	<2 µg/l	
1,1-Dichloroethene	6/24/04	<2 µg/l	
1,1-Dichloropropene	6/24/04	<2 µg/l	
1,2,3-Trichlorobenzene	6/24/04	<2 µg/l	
1,2,4-Trichlorobenzene	6/24/04	<2 µg/l	
1,2,4-Trimethylbenzene	6/24/04	<2 µg/l	
1,2-Dibromo-3-chloropropane	6/24/04	<2 µg/l	
1,2-Dibromoethane	6/24/04	<2 µg/l	
1,2-Dichlorobenzene	6/24/04	<2 µg/l	
1,2-Dichloroethane	6/24/04	<2 µg/l	
1,2-Dichloropropane	6/24/04	<2 µg/l	
1,3,-Dichlorobenzene	6/24/04	<2 µg/l	
1,3,5-Trimethylbenzene	6/24/04	<2 µg/l	
1,3-Dichloropropane	6/24/04	<2 µg/l	
1,4,-Dichlorobenzene	6/24/04	<2 µg/l	
2,2-Dichloropropane	6/24/04	<2 µg/l	
2-Chlorotoluene	6/24/04	<2 µg/l	
4-Chlorotoluene	6/24/04	<2 µg/l	
4-Isopropyltoluene	6/24/04	<2 µg/l	
Benzene	6/24/04	<2 µg/l	
Bromobenzene	6/24/04	<2 µg/l	
Bromochloromethane	6/24/04	<2 µg/l	
Bromodichloromethane	6/24/04	<2 µg/l	
Bromoform	6/24/04	<2 µg/l	
Bromomethane	6/24/04	<2 µg/l	
Carbon tetrachloride	6/24/04	<2 µg/l	
Chlorobenzene	6/24/04	<2 µg/l	
Chloroethane	6/24/04	<2 µg/l	
Chloroform	6/24/04	<2 µg/l	
Chloromethane	6/24/04	<2 µg/l	
cis-1,2-Dichloroethene	6/24/04	<2 µg/l	
cis-1,3-Dichloropropene	6/24/04	<2 µg/l	
Dibromochloromethane	6/24/04	<2 µg/l	
Dibromomethane	6/24/04	<2 µg/l	
Dichlorodifluoromethane	6/24/04	<2 µg/l	
Ethylbenzene	6/24/04	<2 µg/l	
Hexachlorobutadiene	6/24/04	<2 µg/l	
Isopropylbenzene (Cumene)	6/24/04	<2 µg/l	
Methylene Chloride	6/24/04	<2 µg/l	
n-butylbenzene	6/24/04	<2 µg/l	
n-Propylbenzene	6/24/04	<2 µg/l	
Naphthalene	6/24/04	<2 µg/l	
o-Xylene	6/24/04	<2 µg/l	
p and m-Xylene	6/24/04	<4 µg/l	
sec-butylbenzene	6/24/04	<2 µg/l	
Styrene	6/24/04	<2 µg/l	
tert-butylbenzene	6/24/04	<2 µg/l	
Tetrachloroethene	6/24/04	<2 µg/l	
Toluene	6/24/04	<2 µg/l	
trans-1,2-Dichloroethene	6/24/04	<2 µg/l	
trans-1,3-Dichloropropene	6/24/04	<2 µg/l	
Trichloroethene	6/24/04	<2 µg/l	
Vinyl Chloride	6/24/04	<2 µg/l	

SWMV318-ER03-04A	6/25/04 7:29:01 AM	6/24/04	2:15:00 PM
Analyte	txtAnalysisDate	AnalysisResult	
1,1,1,2-Tetrachloroethane	6/25/04	<2 µg/l	
1,1,1-Trichloroethane	6/25/04	<2 µg/l	
1,1,2,2-Tetrachloroethane	6/25/04	<2 µg/l	
1,1,2-Trichloroethane	6/25/04	<2 µg/l	
1,1-Dichloroethane	6/25/04	<2 µg/l	
1,1-Dichloroethene	6/25/04	<2 µg/l	
1,1-Dichloropropene	6/25/04	<2 µg/l	
1,2,3-Trichlorobenzene	6/25/04	<2 µg/l	
1,2,4-Trichlorobenzene	6/25/04	<2 µg/l	
1,2,4-Trimethylbenzene	6/25/04	<2 µg/l	
1,2-Dibromo-3-chloropropane	6/25/04	<2 µg/l	
1,2-Dibromoethane	6/25/04	<2 µg/l	
1,2-Dichlorobenzene	6/25/04	<2 µg/l	
1,2-Dichloroethane	6/25/04	<2 µg/l	
1,2-Dichloropropane	6/25/04	<2 µg/l	
1,3,-Dichlorobenzene	6/25/04	<2 µg/l	
1,3,5-Trimethylbenzene	6/25/04	<2 µg/l	
1,3-Dichloropropane	6/25/04	<2 µg/l	
1,4,-Dichlorobenzene	6/25/04	<2 µg/l	
2,2-Dichloropropane	6/25/04	<2 µg/l	
2-Chlorotoluene	6/25/04	<2 µg/l	
4-Chlorotoluene	6/25/04	<2 µg/l	
4-Isopropyltoluene	6/25/04	<2 µg/l	
Benzene	6/25/04	<2 µg/l	
Bromobenzene	6/25/04	<2 µg/l	
Bromochloromethane	6/25/04	<2 µg/l	
Bromodichloromethane	6/25/04	<2 µg/l	
Bromoform	6/25/04	<2 µg/l	
Bromomethane	6/25/04	<2 µg/l	
Carbon tetrachloride	6/25/04	<2 µg/l	
Chlorobenzene	6/25/04	<2 µg/l	
Chloroethane	6/25/04	<2 µg/l	
Chloroform	6/25/04	<2 µg/l	
Chloromethane	6/25/04	<2 µg/l	
cis-1,2-Dichloroethene	6/25/04	<2 µg/l	
cis-1,3-Dichloropropene	6/25/04	<2 µg/l	
Dibromochloromethane	6/25/04	<2 µg/l	
Dibromomethane	6/25/04	<2 µg/l	
Dichlorodifluoromethane	6/25/04	<2 µg/l	
Ethylbenzene	6/25/04	<2 µg/l	
Hexachlorobutadiene	6/25/04	<2 µg/l	
Isopropylbenzene (Cumene)	6/25/04	<2 µg/l	
Methylene Chloride	6/25/04	<2 µg/l	
n-butylbenzene	6/25/04	<2 µg/l	
n-Propylbenzene	6/25/04	<2 µg/l	
Naphthalene	6/25/04	<2 µg/l	
o-Xylene	6/25/04	<2 µg/l	
p and m-Xylene	6/25/04	<4 µg/l	
sec-butylbenzene	6/25/04	<2 µg/l	
Styrene	6/25/04	<2 µg/l	
tert-butylbenzene	6/25/04	<2 µg/l	
Tetrachloroethene	6/25/04	<2 µg/l	
Toluene	6/25/04	<2 µg/l	
trans-1,2-Dichloroethene	6/25/04	<2 µg/l	
trans-1,3-Dichloropropene	6/25/04	<2 µg/l	
Trichloroethene	6/25/04	<2 µg/l	
Vinyl Chloride	6/25/04	<2 µg/l	

FIELD BLANK ANALYTICAL RESULTS 2004
RCRA FACILTY INVESTIGATION
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	FB01		FB02		FB03	
SAMPLE DATE	03-23-2004		04-04-2004		04-06-2004	
VOLATILES (ug/L)						
1,1,1-trichloroethane	10	U	10	U	10	U
1,1,2,2-tetrachloroethane	10	U	10	U	10	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	10	U	10	U	10	U
1,1,2-trichloroethane	10	U	10	U	10	U
1,1-dichloroethane	10	U	10	U	10	U
1,1-dichloroethene	10	U	10	U	10	U
1,2,4-trichlorobenzene	10	U	10	U	10	U
1,2-Dichloroethylene (total)	10	U	10	U	10	U
1,2-dibromo-3-chloropropane	10	R	10	U	10	U
1,2-dichlorobenzene	10	U	10	U	10	U
1,2-dichloroethane	10	U	10	U	10	U
1,2-dichloropropane	10	U	10	U	10	U
1,3-dichlorobenzene	10	U	10	U	10	U
1,4-dichlorobenzene	10	U	10	U	10	U
2-butanone	10	U	10	UJ	10	UJ
2-hexanone	10	U	10	U	10	U
4-methyl-2-pentanone	10	U	10	U	10	U
Acetone	3	J	10	UJ	10	UJ
Benzene	10	U	10	U	10	U
Bromodichloromethane	4	J	34		10	U
Bromoform	10	U	10	U	10	U
Bromomethane	10	U	10	UJ	10	UJ
Carbon Disulfide	10	U	10	U	10	U
Carbon Tetrachloride	10	U	10	U	10	U
Chlorobenzene	10	U	10	U	10	U
Chloroethane	10	U	10	U	10	U
Chloroform	8	J	50		10	U
Chloromethane	10	U	10	U	10	U
Cis-1,2-Dichloroethene	10	U	10	U	10	U
Cis-1,3-Dichloropropene	10	U	10	U	10	U
Cyclohexane	10	U	10	U	10	U
Dibromochloromethane	2	J	21		10	U
Dichlorodifluoromethane	10	U	10	U	10	U
Ethylbenzene	10	U	10	U	10	U
Ethylene Dibromide	10	U	10	U	10	U
Isopropylbenzene	10	U	10	U	10	U
M-,P-Xylene	10	U	10	U	10	U
Methyl Acetate	10	U	10	U	10	U
Methyl Tert-Butyl Ether	10	U	10	U	10	U
Methylcyclohexane	10	U	10	U	10	U
Methylene Chloride	10	U	10	U	10	U
O-Xylene	10	U	10	U	10	U
Styrene	10	U	10	U	10	U
Tetrachloroethene	10	U	10	U	10	U
Toluene	10	U	10	U	10	U
Trans-1,2-Dichloroethene	10	U	10	U	10	U
Trans-1,3-Dichloropropene	10	U	10	U	10	U
Trichloroethene	10	U	10	U	10	U
Trichlorofluoromethane	10	U	10	U	10	U
Vinyl Chloride	10	U	10	U	10	U
Xylenes (Total)	10	U	10	U	10	U
SEMIVOLATILES (ug/L)	1					
1,1-Biphenyl	10	UJ	10	U	10	U
2,2'-oxybis (1-chloropropane)	10	UJ	10	U	10	U
2,4,5-trichlorophenol	25	UJ	25	R	25	U
2,4,6-trichlorophenol	10	UJ	10	R	10	U
2,4-dichlorophenol	10	UJ	10	R	10	U
2,4-dimethylphenol	10	UJ	10	R	10	U

FIELD BLANK ANALYTICAL RESULTS 2004
RCRA FACILTY INVESTIGATION
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	FB01		FB02		FB03	
SAMPLE DATE	03-23-2004		04-04-2004		04-06-2004	
2,4-dinitrophenol	25	UJ	25	R	25	U
2,4-dinitrotoluene	10	UJ	10	U	10	U
2,6-dinitrotoluene	10	UJ	10	U	10	U
2-chloronaphthalene	10	UJ	10	U	10	U
2-chlorophenol	10	UJ	10	R	10	U
2-methylnaphthalene	10	UJ	10	U	10	U
2-methylphenol	10	UJ	10	R	10	U
2-nitroaniline	25	UJ	25	U	25	U
2-nitrophenol	10	UJ	10	R	10	U
3,3'-dichlorobenzidine	10	UJ	10	UJ	10	U
3-nitroaniline	25	UJ	25	U	25	U
4,6-dinitro-2-methyl-phenol	25	U	25	U	25	U
4-Nitroaniline	25	UJ	25	R	25	UJ
4-Nitrophenol	25	UJ	25	R	25	U
4-bromophenyl Phenyl Ether	10	UJ	10	U	10	U
4-chloro-3-methylphenol	10	UJ	10	R	10	U
4-chloroaniline	10	UJ	10	U	10	U
4-chlorophenyl Phenyl Ether	10	UJ	10	U	10	U
4-methylphenol	10	UJ	10	R	10	U
Acenaphthene	10	UJ	10	U	10	U
Acenaphthylene	10	UJ	10	U	10	U
Acetophenone	10	UJ	10	U	10	U
Anthracene	10	UJ	10	U	10	U
Atrazine	10	UJ	10	U	10	U
Benzaldehyde	0.3	J	10	U	10	U
Benzo(A)Anthracene	10	UJ	10	U	10	U
Benzo(A)Pyrene	10	UJ	10	U	10	U
Benzo(B)Fluoranthene	10	UJ	10	U	10	UJ
Benzo(K)Fluoranthene	10	UJ	10	U	10	U
Benzo[G,H,I]Perylene	10	UJ	10	U	10	U
Bis(2-Chloroethoxy) Methane	10	UJ	10	U	10	U
Bis(2-Chloroethyl) Ether	10	UJ	10	U	10	U
Bis(2-Ethylhexyl) Phthalate	0.7	J	10	U	10	U
Butyl Benzyl Phthalate	10	UJ	10	U	10	U
Caprolactam	10	UJ	10	U	10	U
Carbazole	10	UJ	10	U	10	U
Chrysene	10	UJ	10	U	10	U
Di-N-Butyl Phthalate	0.3	J	10	U	10	U
Di-N-Octylphthalate	10	UJ	10	U	10	U
Dibenzo(A,H)Anthracene	10	UJ	10	U	10	U
Dibenzofuran	10	UJ	10	U	10	U
Diethyl Phthalate	10	UJ	10	U	10	U
Dimethyl Phthalate	10	UJ	10	U	10	U
Fluoranthene	10	UJ	10	U	10	U
Fluorene	10	UJ	10	U	10	U
Hexachlorobenzene	10	UJ	10	U	10	U
Hexachlorobutadiene	10	UJ	10	U	10	U
Hexachlorocyclopentadiene	10	UJ	10	U	10	U
Hexachloroethane	10	UJ	10	U	10	U
Indeno(1,2,3-Cd)Pyrene	10	UJ	10	U	10	U
Isophorone	10	UJ	10	U	10	U
N-Nitroso-Di-N-Propylamine	10	UJ	10	U	10	U
N-Nitrosodiphenylamine	10	UJ	10	U	10	U
Naphthalene	10	UJ	10	U	10	U
Nitrobenzene	10	UJ	10	U	10	U
Pentachlorophenol	25	UJ	25	R	25	U
Phenanthrene	10	UJ	10	U	10	U
Phenol	10	UJ	10	R	10	U
Pyrene	10	UJ	10	U	10	U

FIELD BLANK ANALYTICAL RESULTS 2004
RCRA FACILTY INVESTIGATION
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	FB01		FB02		FB03	
SAMPLE DATE	03-23-2004		04-04-2004		04-06-2004	
PCB - PEST (ug/L)	1					
4,4'-DDD					0.1	U
4,4'-DDE					0.1	U
4,4'-DDT					0.1	U
Aldrin					0.05	U
Alpha Bhc					0.05	U
Alpha-Chlordane					0.05	U
Beta Bhc					0.05	U
Delta Bhc					0.05	U
Dieldrin					0.1	U
Endosulfan I					0.05	U
Endosulfan Ii					0.1	U
Endosulfan Sulfate					0.1	U
Endrin					0.1	U
Endrin Aldehyde					0.1	U
Endrin Ketone					0.1	U
Gamma Bhc					0.05	U
Gamma-Chlordane					0.05	U
Heptachlor					0.05	U
Heptachlor Epoxide					0.05	U
Methoxychlor					0.5	U
Toxaphene					5	U
METALS (ug/L)	1					
Arsenic	2.13	U	2.13	UJ	2.13	U
Barium	6.4		0.89	B	0.23	U
Cadmium	0.25	U	0.25	U	5	U
Chromium	0.88	U	0.88	U	0.88	U
Lead	1.56	U	1.56	UJ	1.56	U
Mercury	0.01	U	0.01	U	0.01	U
Selenium	2.32	U	2.32	U	2.32	U
Silver	1.2	B	1.16	U	1.16	U

TRIP BLANK ANALYTICAL RESULTS 2004
RCRA FACILITY INVESTIGATION
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	TB01		TB02		TB04		TB07		TB08	
SAMPLE DATE	03-16-2004		03-18-2004		03-23-2004		04-05-2004		04-06-2004	
VOLATILES (ug/L)										
1,1,1-trichloroethane	10	U	10	U	10	U	10	U	10	U
1,1,2,2-tetrachloroethane	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	10	U	10	U	10	U	10	U	10	U
1,1,2-trichloroethane	10	U	10	U	10	U	10	U	10	U
1,1-dichloroethane	10	U	10	U	10	U	10	U	10	U
1,1-dichloroethene	10	U	10	U	10	U	10	U	10	U
1,2,4-trichlorobenzene	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethylene (total)	10	U	10	U	10	U	10	U	10	U
1,2-dibromo-3-chloropropane	10	U	10	U	10	R	10	U	10	U
1,2-dichlorobenzene	10	U	10	U	10	U	10	U	10	U
1,2-dichloroethane	10	U	10	U	10	U	10	U	10	U
1,2-dichloropropane	10	U	10	U	10	U	10	U	10	U
1,3-dichlorobenzene	10	U	10	U	10	U	10	U	10	U
1,4-dichlorobenzene	10	U	10	U	10	U	10	U	10	U
2-butanone	10	UJ	10	UJ	10	U	10	UJ	10	UJ
2-hexanone	10	U	10	U	10	U	10	U	10	U
4-methyl-2-pentanone	10	U	10	U	10	U	10	U	10	U
Acetone	10	UJ	10	UJ	10	U	10	UJ	10	UJ
Benzene	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane	10	U	10	U	10	U	10	U	10	U
Bromoform	10	U	10	U	10	U	10	U	10	U
Bromomethane	10	U	10	U	10	U	10	UJ	10	UJ
Carbon Disulfide	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride	10	U	10	U	10	U	10	U	10	U
Chlorobenzene	10	U	10	U	10	U	10	U	10	U
Chloroethane	10	U	10	U	10	U	10	U	10	U
Chloroform	10	U	10	U	10	U	10	U	10	U
Chloromethane	10	U	10	U	10	U	10	U	10	U
Cis-1,2-Dichloroethene	10	U	10	U	10	U	10	U	10	U
Cis-1,3-Dichloropropene	10	U	10	U	10	U	10	U	10	U
Cyclohexane	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	10	U	10	U	10	U	10	U	10	U
Dichlorodifluoromethane	10	U	10	U	10	U	10	U	10	U
Ethylbenzene	10	U	10	U	10	U	10	U	10	U
Ethylene Dibromide	10	U	10	U	10	U	10	U	10	U
Isopropylbenzene	10	U	10	U	10	U	10	U	10	U
M-,P-Xylene	10	U	10	U	10	U	10	U	10	U
Methyl Acetate	10	U	10	U	10	U	10	U	10	U
Methyl Tert-Butyl Ether	10	U	10	U	10	U	10	U	10	U
Methylcyclohexane	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	10	U	10	U	10	U	10	U	10	U
O-Xylene	10	U	10	U	10	U	10	U	10	U
Styrene	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene	10	U	10	U	10	U	10	U	10	U
Toluene	10	U	10	U	10	U	10	U	10	U
Trans-1,2-Dichloroethene	10	U	10	U	10	U	10	U	10	U
Trans-1,3-Dichloropropene	10	U	10	U	10	U	10	U	10	U
Trichloroethene	10	U	10	U	10	U	10	U	10	U
Trichlorofluoromethane	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride	10	U	10	U	10	U	10	U	10	U
Xylenes (Total)	10	U	10	U	10	U	10	U	10	U

e*data, inc.
Environmental Data Management
& Chemistry Consulting Services

April 28, 2005

Adrienne Jones
CH2M HILL, Inc.
5700 Cleveland Ave, Suite 101
Virginia Beach, VA 23462

Subject: Data Validation Report for MCB Camp Lejeune, Jacksonville, North Carolina.
Contract No. N62470-02-D-3052, CTO#0091

Dear Ms. Jones,

Enclosed is the data validation package of CTO #0091, MCB Camp Lejeune, Jacksonville, North Carolina samples. A copy of the validated database file in MS-Excel file format has been e-mailed to your attention. The data fields, [DV_Qual] and {DV_Qual_Code] have been updated with the validation qualifiers. This report addresses 6 data packages and EDDs, which included Sample Delivery Group Nos. CTO091-1, CTO091-2, CTO091-3, CTO091-4, CTO091-5, and CTO091-6.

Please call me at (919) 829-3571 if you have any questions or need additional information.

Sincerely,

E-Data, Inc.

Christopher Ohland
Senior Environmental Chemist

Enclosures
CMO/kk

edata:CTO#0091_NARRATIVE

213 Oberlin Road, Carriage House
Raleigh, North Carolina 27605

Tel: (919) 829-3571
Fax: (603) 947-6251
chris.ohland@edatainc.biz

Data Validation Report

RFIs at SWMU 303/318 and 336
MCB Camp Lejeune
Jacksonville, North Carolina

April 28, 2005

Revision 0

Prepared For CH2MHILL
Navy CLEAN II Prime Contract No.
N62470-02-D-3052, CTO#0091

Prepared by E-Data, Inc.
213 Oberlin Road,
Carriage House
Raleigh, North Carolina 27605

Acronyms and Abbreviations

AA Atomic Absorption

AOB Analytical Operations Branch

APO Administrative Project Officer

BFB Bromofluorobenzene

BNA Base-neutral/acid

CCB Continuing Calibration Blank

CCV Continuing Calibration Verification

CF Calibration Factor

CLP Contract Laboratory Program

COC Chain-of-Custody

CRDL Contract Required Detection Limit

CRQL Contract Required Quantitation Limit

CV Coefficient of Variation

%D Percent Difference

DFTPP Decafluorotriphenylphosphine

DQO Data Quality Objective

DV Data Validation

DUP Duplicate

ECD Electron Capture Detector

EICP Extracted Ion Current Profile

EPA Environmental Protection Agency

GC Gas Chromatography

GS/MS Gas Chromatography/Mass Spectroscopy

GPC Gel Permeation Chromatography

ICB Initial Calibration Blank

ICP Inductively Coupled Plasma

ICS Inter-element Check Sample

ICV Initial Calibration Verification

IDL Instrument Detection Limit

IS Internal Standard

LCS Laboratory Control Sample

MDL Method Detection Limit

mL Milliliter

MS Matrix Spike

MSD Matrix Spike Duplicate

MSA Method of Standard Addition

m/z the ration of mass (m) to charge (z) of ions measured by GC/MS

NFG Nation Functional Guidelines

PB Preparation Blank

PCB Polychlorinated Biphenyl

PEST Pesticides

QA Quality Assurance

QAPP Quality Assurance Program Project (or Project) Plan

QC Quality Control

%R Percent Recovery of Spiked Amounts of Analytes

RIC Reconstructed Ion Chromatogram

RL Reporting Limits

RPD Relative Percent Difference

RRF Relative Response Factor

RSD Relative Standard Deviation

RT Retention Time

SDG Sample Delivery Group

SMC System Monitoring Compound

SOW Scope of Work

SVOC Semi Volatile Organic Compound

TAL Target Analyte List

TCL Target Compound List

TIC Tentatively Identified Compound

VOC Volatile Organic Compound

Overview

The U.S Department of the Navy issued a task order to conduct sampling and analysis activities at MCB Camp Lejeune,Jacksonville NC under the Navy Clean Prime Contract No. N62470-02-D-3052, CTO#0091. This report describes the validation of analytical data generated under this scope of work. E-Data Inc., located in Raleigh, NC provided the data validation services.

Field teams collected sediment and fish tissue environmental samples and associated field quality control samples between February 2 and 19, 2005. Environmental samples were taken at 73 unique field locations. A summary of the samples collected is shown in Table 1. Field quality control samples including 7 field duplicate samples, 5 equipment rinse blank, 3 field blank, and 6 trip blank sample were also submitted to the laboratory. The laboratory prepared project-specific samples for matrix spike/matrix spike duplicate (MS/MSD) analyses.

TABLE 1
Sample Cross-Reference Summary
(St. Juliens Creek Annex)

Lab ID No.	Field Sample ID No.	Type of Sample	Sampled
WV0505-5	ER01-020205	Eq. Rinse	02/02/05
WV0528-6	ER02-020405	Eq. Rinse	02/04/05
WV0589-1	ER03-020605	Eq. Rinse	02/06/05
WV0589-2	ER04-020805	Eq. Rinse	02/08/05
WV0758-8	ER05-05A	Eq. Rinse	02/20/05
WV0749-1	FB01-05A	Field Blank	02/18/05
WV0749-2	FB02-05A	Field Blank	02/18/05
WV0749-3	FB03-05A	Field Blank	02/18/05
WV0758-7	SWMU318-MW05DW-05AD	Field Dup.	02/20/05
WV0579-1	SWMU318-SB20-00D	Field Dup.	02/08/05
WV0580-1	SWMU318-SB25-02D	Field Dup.	02/08/05
WV0580-3	SWMU318-SB25-04D	Field Dup.	02/08/05
WV0581-3	SWMU318-SB27-02D	Field Dup.	02/07/05
WV0580-5	SWMU318-SB28-02D	Field Dup.	02/08/05
WV0580-7	SWMU318-SB28-04D	Field Dup.	02/08/05
WV0749-17	318-MW01-05A	Normal	02/15/05
WV0749-11	318-MW02-05A	Normal	02/16/05
WV0749-12	318-MW02D-05A	Normal	02/16/05
WV0749-14	318-MW03-05A	Normal	02/16/05
WV0749-7	318-MW04-05A	Normal	02/17/05
WV0749-8	318-MW04D-05A	Normal	02/17/05
WV0749-10	318-MW05-05A	Normal	02/17/05
WV0749-15	86-GW02IW-05A	Normal	02/16/05
WV0749-5	86-GW17IW-05A	Normal	02/17/05
WV0749-16	86-GW20IW-05A	Normal	02/16/05
WV0749-6	86-GW21IW-05A	Normal	02/17/05
WV0749-9	86-GW22IW-05A	Normal	02/17/05
WV0749-13	86-GW27IW-05A	Normal	02/16/05
WV0528-1	SWMU318-GW31	Normal	02/03/05
WV0528-4	SWMU318-GW31	Normal	02/03/05

TABLE 1
Sample Cross-Reference Summary
(St. Juliens Creek Annex)

Lab ID No.	Field Sample ID No.	Type of Sample	Sampled
WV0528-3	SWMU318-GW32	Normal	02/03/05
WV0528-5	SWMU318-GW33	Normal	02/04/05
WV0528-2	SWMU318-GW33-01	Normal	02/04/05
WV0505-3	SWMU318-GW34	Normal	02/02/05
WV0578-3	SWMU318-GW35	Normal	02/05/05
WV0578-2	SWMU318-GW35-01	Normal	02/05/05
WV0505-7	SWMU318-GW36	Normal	02/03/05
WV0505-6	SWMU318-GW37	Normal	02/03/05
WV0505-2	SWMU318-GW38	Normal	02/02/05
WV0578-4	SWMU318-GW51-01	Normal	02/07/05
WV0758-5	SWMU318-MW04DW-05A	Normal	02/19/05
WV0758-6	SWMU318-MW05DW-05A	Normal	02/20/05
WV0758-4	SWMU318-MW06-05A	Normal	02/19/05
WV0758-3	SWMU318-MW06DW-05A	Normal	02/19/05
WV0758-2	SWMU318-MW07-05A	Normal	02/19/05
WV0758-1	SWMU318-MW08-05A	Normal	02/19/05
WV0580-15	SWMU318-SB14-02	Normal	02/05/05
WV0580-16	SWMU318-SB14-03	Normal	02/05/05
WV0580-13	SWMU318-SB15-01	Normal	02/05/05
WV0580-14	SWMU318-SB15-03	Normal	02/05/05
WV0527-4	SWMU318-SB16-00	Normal	02/04/05
WV0527-5	SWMU318-SB16-02	Normal	02/04/05
WV0580-17	SWMU318-SB17-02	Normal	02/05/05
WV0580-18	SWMU318-SB17-03	Normal	02/05/05
WV0580-8	SWMU318-SB18-01	Normal	02/07/05
WV0580-9	SWMU318-SB18-02	Normal	02/07/05
WV0580-10	SWMU318-SB18-03	Normal	02/07/05
WV0580-11	SWMU318-SB19-00	Normal	02/04/05
WV0580-12	SWMU318-SB19-05	Normal	02/04/05
WV0514-8	SWMU318-SB20-00	Normal	02/03/05
WV0514-9	SWMU318-SB20-02	Normal	02/03/05
WV0514-10	SWMU318-SB20-04	Normal	02/03/05
WV0514-2	SWMU318-SB21-00	Normal	02/03/05
WV0514-3	SWMU318-SB21-02	Normal	02/03/05
WV0514-4	SWMU318-SB21-04	Normal	02/03/05
WV0580-19	SWMU318-SB22-03	Normal	02/07/05
WV0580-20	SWMU318-SB22-04	Normal	02/07/05
WV0514-5	SWMU318-SB23-00	Normal	02/03/05
WV0514-6	SWMU318-SB23-02	Normal	02/03/05
WV0527-1	SWMU318-SB23-02	Normal	02/03/05
WV0514-7	SWMU318-SB23-04	Normal	02/03/05
WV0581-5	SWMU318-SB24-00	Normal	02/07/05

TABLE 1
Sample Cross-Reference Summary
(St. Juliens Creek Annex)

Lab ID No.	Field Sample ID No.	Type of Sample	Sampled
WV0581-1	SWMU318-SB24-03	Normal	02/07/05
WV0581-6	SWMU318-SB24-03	Normal	02/07/05
WV0579-2	SWMU318-SB25-02	Normal	02/08/05
WV0580-2	SWMU318-SB25-04	Normal	02/08/05
WV0527-2	SWMU318-SB26-01	Normal	02/04/05
WV0527-3	SWMU318-SB26-02	Normal	02/04/05
WV0581-2	SWMU318-SB27-02	Normal	02/07/05
WV0581-4	SWMU318-SB27-03	Normal	02/07/05
WV0580-4	SWMU318-SB28-02	Normal	02/08/05
WV0580-6	SWMU318-SB28-04	Normal	02/08/05
WV0464-1	SWMU336-GW04-01	Normal	02/01/05
WV0505-4	SWMU336-GW09-01	Normal	02/02/05
WV0455-1	SWMU336-SB01-00	Normal	02/01/05
WV0455-2	SWMU336-SB04-02	Normal	02/01/05
WV0455-3	SWMU336-SB05-02	Normal	02/01/05
WV0514-1	SWMU336-SB09-06	Normal	02/02/05
WV0464-2	TB01-020105	Trip Blank	02/01/05
WV0505-1	TB02-020205	Trip Blank	02/02/05
WV0528-7	TB03-020405	Trip Blank	02/04/05
WV0578-1	TB04-020805	Trip Blank	02/08/05
WV0749-4	TB04-021805	Trip Blank	02/18/05
WV0758-9	TB05-022005	Trip Blank	02/20/05

Samples were delivered to Katahdin Analytical Services located in Westbrook, ME for analytical testing. Katahdin performed analytical tests for this scope of work including trace level volatile organic analyses, semi-volatile, and metals. Wet Chemisty tests including total organic carbon and methane/ethane/ethane were not validated under this scope of work. All analyses were conducted at the Westbrook facility, except the methane/ethane/ethane, which were lower tier subcontracted to Air Toxics Limited in Folsom California.

After laboratory analyses were completed and reviewed, Katahdin assembled hardcopy data packages and electronic data deliverables (EDD), which was delivered to CH2MHILL Inc., office located in Virginia Beach, VA office and forwarded to E-Data. Katahdin provided six data packages and EDDs, which included Sample Delivery Group ID Nos. CTO091-1, CTO091-2, CTO091-3, CTO091-4, CTO091-5, and CTO091-6.

Data validation was conducted as described in the USEPA National Laboratory Functional Guidelines for Organic Data Review and USEPA Region 3 Modifications to the Functional Guidelines. A copy of the project chain-of-custody forms and laboratory reports with data qualifiers applied as a result of data validation are provided in Appendix A. Appendix B contains results of all tentatively identified compounds. Appendix C contains copies of the completed checklists used to document the data validation effort.

Summary of Sample Analyses

Hardcopy Data Packages

Project completeness is calculated at 100 percent (7478 valid results of 7478 total results) of the laboratory data undergoing data validation. No major issues were identified as a result of data validation. Minor issues are described below. Project data qualifiers are added to the laboratory reports. A list of project data qualifiers is shown in Table 2.

TABLE 2
List of Project Qualifiers
(MCB Camp Lejeune)

Qualifier	Description
[*none*]	The analyte was positively identified.
J	The analyte was positively identified; however, the concentration value is an estimate. Also used if a result was measured at a concentration below the Contract Required Quantification Limit (CRQL) or Contract Required Detection Limit (CRDL).
UJ	The analyte was analyzed for, but not detected; however, the concentration value is an estimate.
U	The analyte was analyzed for, but not detected.

Field samples are qualified for the introduction of contaminants resulting from laboratory and field activities as measured in the laboratory method blank, equipment rinse blank, field blank, and trip blank audit samples. Equipment rinse blank, field blank, and trip blank audit samples are not qualified.

A summary of all qualified results is shown on Table D-1 (Appendix D).

Electronic Data Deliverable

The sample results were verified by comparing the results to the validated laboratory Form 1's. Table E-1 (Appendix E) summarizes the 8047 sample results that were verified.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues

Volatile Organic Analyses (SDG CTO091-1)

Chain of Custody and Sample Login
No deficiencies noted during the review.

Surrogate Recoveries
All surrogate recoveries were acceptable, except sample WV0514-8. Two of the three surrogates recovered below the lower control limit. A re-analysis and matrix spike duplicate analysis was performed with similar results. The results for this sample are qualified as estimates and flagged "J" if detected and "UJ" if non-detected. The re-analysis is redundant is therefore is qualified as rejected and flagged "R."

Matrix Spike
Matrix spike and matrix spike duplicate analysis was performed on sample WV0514-8. Acceptable accuracy objectives were met.

Laboratory Control Samples
Laboratory control samples were analyzed with acceptable accuracy objectives.

Method and Field Blanks
Trace levels of volatile organics were detected in one or more field, trip, equipment, or laboratory method blank analysis. Action levels were calculated using the 5X and 10X Rule. Sample results less than the calculated action level are qualified as non-detected and flagged "U." The following action levels were applied: Methylene Chloride (130 ug/Kg), 2-hexanone 10), toluene (10), and 1,2,4-trichlorobenzene (5).

Field Duplicate
Field duplicate samples were collected and analyses were performed using field sample pair WV0514 8 and WV0579-1. Sample concentrations are less than the reporting limit. Acceptable field duplicate precision objectives were obtained.

Calibrations
All initial and continuing calibrations were within acceptable control limits, except for acetone and methylene chloride. Sample results for methylene chloride were previously qualified for blank contamination and flagged "U." All acetone results detected at concentrations greater than the reporting limit are qualified as estimated and flagged "J."

Internal Standard Recovery
All internal standard spike recoveries were acceptable.

Reporting Limits
Nominal reporting limits were achieved.

Volatile Organic Analyses (SDG CTO091-2)

Chain of Custody and Sample Login
No deficiencies noted during the review.

Surrogate Recoveries
Surrogate recoveries were within acceptable QC limits.

Matrix Spike
Matrix spike and matrix spike duplicate analysis was performed on sample WV0758-1. Acceptable accuracy and precision objectives were met.

Laboratory Control Samples
Laboratory control samples were analyzed with acceptable accuracy objectives.

Method and Field Blanks
Trace levels of volatile organics were detected in one or more field, trip, equipment, or laboratory method blank analysis. Action levels were calculated using the 5X and 10X Rule. Sample results less than the calculated action level are qualified as non-detected and flagged "U." The following action levels were applied: Methylene Chloride (50 ug/L), toluene (10), and 1,2,4-trichlorobenzene (5).

Field Duplicate
Field duplicate samples were collected and analyses were performed using field sample pair WV0758 6 and WV0758-7. Sample concentrations are less than the reporting limit. Acceptable field duplicate precision objectives were obtained.

Calibrations
Minor calibration deficiencies were observed for compounds that were not detected in the associated field samples. No action was taken to qualify the sample results.

Internal Standard Recovery
Internal standard spike recoveries were acceptable.

Reporting Limits
Nominal reporting limits were achieved.

Volatile Organic Analyses (SDG CTO091-5)

Chain of Custody and Sample Login
There are no deficiencies noted during the review.

Surrogate Recoveries
Surrogate recoveries were within acceptable QC limits.

Matrix Spike
A matrix spike and matrix spike duplicate analysis was performed on sample WV0749-6. Acceptable accuracy and precision objectives were met.

Laboratory Control Samples
Laboratory control samples were analyzed with acceptable accuracy objectives.

Method and Field Blanks
Trace levels of volatile organics were detected in one or more field, trip, equipment, or laboratory method blank analysis. Action levels were calculated using the 5X and 10X Rule. Sample results less than the calculated action level are qualified as non-detected and flagged "U." The following action levels were applied: Methylene Chloride (30 ug/L), toluene (10), and 1,2,4-trichlorobenzene (5).

Field Duplicate
Field duplicate samples were not collected and analyses using field samples assigned to the SDG grouping. An assessment of this QC type could not be completed.

Calibrations
Minor calibration deficiencies were observed for compounds that were not detected in the associated field samples. No action was taken to qualify the sample results.

Internal Standard Recovery
Internal standard spike recoveries were acceptable.

Reporting Limits
Nominal reporting limits were achieved.

Semivolatile Organic Analyses (SDG CTO091-1)

Sample Holding Times, Preservations, and Receipt
No deficiencies were noted during the review.

Surrogate Recovery
Surrogate recoveries are within the acceptable control limits.

Matrix Spike
A matrix spike and matrix spike duplicate analysis was requested with samples assigned to this SDG grouping. Laboratory control samples were assigned to the extraction batches. An assessment of this QC type could not be performed.

Laboratory Control Sample
A laboratory control sample and duplicate analysis was assigned to sample extraction batches that did not contain project specific matrix spike analyses. All laboratory control samples demonstrated acceptable accuracy and precision objectives.

Blanks
Trace levels of di-n-butyl phthalate were measured in one of the method blanks. All equipment blanks were absent target analytes. Action levels were determined based on the 10X Rule. Sample results less than the action level were qualified as non-detected and flagged "U." The following action levels were applied: di-n-butyl phthalate (900 mk/Kg). Note that this compound was not detected in any of the associated field samples.

Field Duplicate
Field duplicate samples were not collected and analyses with samples assigned to this SDG grouping. An assessment of this QC type could not be performed.

Calibrations
Minor calibration deficiencies were observed for compounds that were not detected in the associated field samples. No action was taken to qualify the sample results.

Quantifications
Manual quantifications were performed on one or more of the process files associated with this SDG.

Internal Standards
Internal standard areas were within acceptable QC limits.

Reporting Limits
Nominal reporting limits were achieved for all samples.

Semivolatile Organic Analyses (SDG CTO091-2)

Sample Holding Times, Preservations, and Receipt
No deficiencies were noted during the review.

Surrogate Recovery
Surrogate recoveries are within the acceptable control limits except for sample WV0578-3 where one of the eight surrogates exceeds the upper control limit. An analysis using a diluted aliquot was performed with acceptable surrogate recoveries, indicating possible matrix interference. No action was taken to qualify the sample result.

Matrix Spike
Matrix spike and matrix spike duplicate analysis was ot requested with samples assigned to this SDG grouping. Laboratory control samples were prepared for the extraction batch. An assessment of this QC type could not be performed.

Laboratory Control Spike
Laboratory control sample and duplicate analysis were performed with the two separate extraction batches. Acceptable accuracy and precision objectives were met, except the 4-nitrophenol recoveries associated with field sample WV0578-3. These recoveries were greater than the upper control limit. Sample WV0578-3 does not contain 4-nitrophenol.

Blanks
Laboratory method and equipment blanks were absent target analytes.

Field Duplicate
Field duplicate samples were not collected and analyses with samples assigned to this SDG group. An assessment of this QC type could not be performed.

Calibrations
Minor calibration deficiencies were observed for compounds that were not detected in the associated field samples, except 2,4-dimethylphenol which is detected above the reporting limit in samples WV0505-6, WV0578-3, and WV0578-3DL. The sample result for WV0578-3 exceeds the calibration range and is not reported. The results for WV0505-6 and WV0578-3DL are qualified as estimated and flagged “J.”

Quantifications
Manual quantifications were performed on one or more of the process files associated with this SDG.

Internal Standards
Internal standard areas were within acceptable QC limits.

Reporting Limits
Nominal reporting limits were achieved for all samples.

Semivolatile Organic Analyses (SDG CTO091-3)

Sample Holding Times, Preservations, and Receipt
No deficiencies were noted during the review.

Surrogate Recovery
Surrogate recoveries are within the acceptable control limits.

Matrix Spike
Matrix spike and matrix spike duplicate analysis was performed using samples WV0580-2 and WV0580-6. Accuracy and precision objectives were met except for pentachlorophenol and 2,4-dinitrotoluene, which were recovered above the upper control limit in one or more analyses. These compounds were not detected in the associated field samples and no action was taken to qualify the sample results.

Blanks
Trace levels of di-n-butyl phthalate were measured in one of the method blanks. All equipment blanks were absent target analytes. Action levels were determined based on the 10X Rule. Sample results less than the action level were qualified as non-detected and flagged "U." The following action levels were applied: di-n-butyl phthalate (900 mk/Kg). Note that this compound was not detected in any of the associated field samples.

Field Duplicate
Field duplicate samples were collected and analyzed using field sample pairs WV0580-1 & WV0579-2; WV0580-2 & WV0580-3; WV0580-4 & WV0580-5; and WV0580-6 & WV0580-7. All analyses were absent target analytes. Precision objectives were met and no qualification of the data was required.

Calibrations
Minor calibration deficiencies were observed for compounds that were not detected in the associated field samples. No action was taken to qualify the sample results.

Quantifications
Manual quantifications were performed on one or more of the process files associated with this SDG.

Internal Standards
Internal standard areas were within acceptable QC limits.

Reporting Limits
Nominal reporting limits were achieved for all samples.

Semivolatile Organic Analyses (SDG CTO091-4)

Sample Holding Times, Preservations, and Receipt
No deficiencies were noted during the review.

Surrogate Recovery
Surrogate recoveries are within the acceptable control limits.

Matrix Spike
Matrix spike and matrix spike duplicate analysis was requested with samples assigned to this SDG grouping. An assessment of this QC type could not be performed.

Laboratory Control Sample
Laboratory control sample analysis was assigned to the extraction batch containing work orders WV0580 and WV0581. Acceptable accuracy objectives were reported.

Blanks
Laboratory method and equipment blanks were absent target analytes.

Field Duplicate
Field duplicate samples were collected and analyzed using field sample pairs WV0581-2 & WV0581-3. The analyses were absent target analytes. Precision objectives were met and no qualification of the data was required.

Calibrations
Minor calibration deficiencies were observed for compounds that were not detected in the associated field samples. No action was taken to qualify the sample results.

Quantifications
Manual quantifications were performed on one or more of the process files associated with this SDG.

Internal Standards
Internal standard areas were within acceptable QC limits.

Reporting Limits
Nominal reporting limits were achieved for all samples.

Semivolatile Organic Analyses (SDG CTO091-5)

Sample Holding Times, Preservations, and Receipt
No deficiencies were noted during the review.

Surrogate Recovery
Surrogate recoveries are within the acceptable control limits.

Matrix Spike
A matrix spike and matrix spike duplicate analysis was performed using field sample WV0749-6. Laboratory control samples were also prepared with this extraction batch. Recoveries for pentachlorophenol and 4-nitrophenol were greater than the upper control limit. Similar results were observed with the laboratory control sample. Calibration deficiencies were also noted which may be the source of the measurement error. No action was taken to qualify the non-detected results.

Laboratory Control Spike
Laboratory control sample and duplicate analysis were performed with the two separate extraction batches. Acceptable accuracy and precision objectives were met, except the 4-nitrophenol recoveries associated with field sample WV0589-1 and WV0589-2 and pentachlorophenol recoveries associated with work order WV0749. These recoveries were greater than the upper control limit. Neither compound was detected in any of the associated field sample. No action was taken to qualify the sample results.

Blanks
Laboratory method and equipment blanks were absent target analytes.

Field Duplicate
Field duplicate samples were not collected and analyses with samples assigned to this SDG grouping. An assessment of this QC type could not be performed.

Calibrations
Minor calibration deficiencies were observed for compounds that were not detected in the associated field samples.

Quantifications
Manual quantifications were performed on one or more of the process files associated with this SDG.

Internal Standards
Internal standard areas were within acceptable QC limits.

Reporting Limits
Nominal reporting limits were achieved for all samples.

Semivolatile Organic Analyses (SDG CTO091-6)

Sample Holding Times, Preservations, and Receipt
No deficiencies were noted during the review.

Surrogate Recovery
Surrogate recoveries are within the acceptable control limits.

Matrix Spike
Matrix spike and matrix spike duplicate analysis was performed using field sample WV0758-1. Laboratory control samples were also prepared with this extraction batch. Recoveries for pentachlorophenol and 4-nitrophenol were greater than the upper control limit. Similar results were observed with the laboratory control sample. Calibration deficiencies were also noted which may be the source of the measurement error. No action was taken to qualify the non-detected results.

Laboratory Control Spike
Laboratory control sample and duplicate analysis were performed with the two separate extraction batches. Acceptable accuracy and precision objectives were met, except the 4-nitrophenol and pentachlorophenol recoveries associated with work order WV0758. These recoveries were greater than the upper control limit. Neither compound was detected in any of the associated field sample. No action was taken to qualify the sample results.

Blanks
Laboratory method and equipment blanks were absent target analytes.

Field Duplicate
Field duplicate samples were collected and analyses with field pair samples WV0758-6 and WV0758-7. The field duplicate pairs were absent of target analytes. Field precision objectives were achieved.

Calibrations
Minor calibration deficiencies were observed for compounds that were not detected in the associated field samples. No action was taken to qualify the sample results.

Quantifications
Manual quantifications were performed on one or more of the process files associated with this SDG.

Internal Standards
Internal standard areas were within acceptable QC limits.

Reporting Limits
Nominal reporting limits were achieved for all samples.

Metal Analyses (SDG CTO091-1)

Sample Receipt and Preservation
Samples were received intact and in good condition, except Sample WV0581-3 was not listed on the Chain of Custody form received from the field. The laboratory was instructed to perform the metals analyses.

Calibrations
Calibrations were within acceptable limits for the reported measurements.

Trace Level Checks
Trace level check recovered within acceptable QC limit. Note that barium is not included in the check solutions.

Blank Contaminants
Trace levels of metals were present in one or more instrument initial calibration blank, continuing calibration blank, preparation blank, and field QC blank analyses. Action levels were determined based on the 5X rule. Sample results less than the action levels are qualified as non-detected and flagged "U." The following action levels were applied (mg/Kg): As (90), Ba (1.1), Cd (0.62), Cr (3.2), Pb (3.0), Hg (0.13), Se (8.4), and Ag (4.8).

ICP Interference Check Sample
Interference check samples were analyzed within acceptable control limits.

Laboratory Control Sample
Laboratory control samples were analyzed within acceptable control limits, except a single run for mercury. The laboratory control sample for mercury was analyzed at the beginning and through out the analytical sequence. The initial analysis exceeds the upper control limit while the remaining are acceptable. Biases resulting from mercury blank measurements are greater

than the laboratory control sample error and no action was taken to qualify the data. See discussion on blank contaminants.

Field Duplicate
A field duplicate sample was collected and analyzed with field sample pair WV0581-2 and WV0581-3. Acceptable field precision objectives were achieved.

Matrix Spike and Laboratory Duplicates
Matrix spike and laboratory duplicate samples were collected and analyzed using samples WV0514-1 and WV0581-2. Acceptable project accuracy and precision objectives were met, except the arsenic result for sample WV0581-2. For sample WV0581-2, arsenic was fortified at concentrations less than four times the native concentrations and the recovery data is inconclusive. No action was taken to qualify sample WV0581-2 results.

Serial Dilutions
Serial dilution analyses were performed using field sample WV0514-1 and WV0581-2. Acceptable results were obtained for all analyses, except the selenium result for sample WV0581-2. This result was previously qualified as non-detected and flagged "U."

Metal Analyses (SDG CTO091-2)

Sample Receipt and Preservation
Samples were received intact and in good condition.

Calibrations
Calibrations were within acceptable limits for the reported measurements.

Trace Level Checks
Trace level check recovered within acceptable QC limit, except marginal excursions for selenium and lead. Note that barium is not included in the check solutions. No action was taken to qualify the sample results for low level recovery checks.

Blank Contaminants
Trace levels of metals were present in one or more instrument initial calibration blank, continuing calibration blank, preparation blank, and field QC blank analyses. Action levels were determined based on the 5X rule. Sample results less than the action levels are qualified as non-detected and flagged "U." The following action levels were applied (mg/L): As (24.5), Ba (5.5), Cd (3.1), Cr (16), Pb (15), Hg (0.25), Se (42), and Ag (24).

ICP Interference Check Sample
Interference check samples were analyzed within acceptable control limits.

Laboratory Control Sample
Laboratory control samples were analyzed within acceptable control limits, except a single mercury analysis affecting samples included in SDG grouping CTO091-6. The associated mercury measurements have been previously qualified for blank contaminants. No additional action is needed to qualify the sample results.

Field Duplicate
Field duplicate sample were not collected field sample assigned to this SDG group. An assessment of this QC type could not be completed.

Matrix Spike and Laboratory Duplicates
Matrix spike and laboratory duplicate samples were collected and analyzed using field samples WV0749 6, WV0749-12 (Hg only) and WV0758-1. Acceptable project precision objectives were met but not all accuracy objectives were achieved. For sample WV0758 1, the recovery of mercury and selenium lay above the upper control limit. No action was taken to qualify the non-detected results.

Serial Dilutions
Serial dilution analyses were performed using field sample WV0749-6 and WV0758-1. Acceptable results were obtained for all analyses.

Metal Analyses (SDG CTO091-3)

Sample Receipt and Preservation
Samples were received intact and in good condition.

Calibrations
Calibrations were within acceptable limits for the reported measurements.

Trace Level Checks
Trace level check recovered within acceptable QC limit. Note that barium is not included in the check solutions.

Blank Contaminants
Trace levels of metals were present in one or more instrument initial calibration blank, continuing calibration blank, preparation blank, and field QC blank analyses. Action levels were determined based on the 5X rule. Sample results less than the action levels are qualified as non-detected and flagged "U." The following action levels were applied (mg/Kg): As (4.9), Ba (1.1), Cd (0.83), Pb (3.8), Hg (0.13), Se (4.5), and Ag (1.1).

ICP Interference Check Sample
Interference check samples were analyzed within acceptable control limits.

Laboratory Control Sample
Laboratory control samples were analyzed within acceptable control limits.

Field Duplicate
Field duplicate sample was collected and analyzed with field sample pairs WV0579-2 & WV0580-1, WV0580-2 & WV0580-3, WV0580-4 & WV0580-5, and WV0580-6 & WV0580-7. Acceptable field precision objectives were achieved.

Matrix Spike and Laboratory Duplicates
Matrix spike and laboratory duplicate samples were collected and analyzed using field samples WV0580 2 and WV0580 6. Acceptable project precision objectives were met but not all accuracy objectives were achieved. For sample WV0580 2, the recovery of arsenic and selenium fall below the lower control limit. Both parameters were fortified at concentrations less than four times the native concentrations and the recovery data is inconclusive. No action was taken to qualify sample WV0580-2 results. For sample WV0580 6, the recovery of arsenic, chromium, lead, and selenium fall outside the established control limits. Again, these parameters were fortified at concentrations less than four times the native concentrations and the recovery data is inconclusive. No action was taken to qualify sample WV0580-6 results.

Serial Dilutions

Serial dilution analyses were performed using field sample WV0580-2 and WV0580-6. Acceptable results were obtained for all analyses.

Appendix A

Validated Laboratory Reports and Chain-of-Custody Forms

Chain-of-Custody Forms

Appendix B
Tentatively Identified Compounds

Appendix C
Data Validation Checklists

Appendix D
Summary of Qualified Results

Appendix E
Summary of Verified EDD Data

Volatile Organic Analyses

Semivolatile Organic Analyses

Metal Analyses

SDG CTO091-1

Volatile Organic Analysis

SDG CTO091-2

Volatile Organic Analysis

SDG CTO091-5

Volatile Organic Analysis

SDG CTO091-1

Semivolatile Organic Analysis

SDG CTO091-2

Semivolatile Organic Analysis

SDG CTO091-3

Semivolatile Organic Analysis

SDG CTO091-4

Semivolatile Organic Analysis

SDG CTO091-5

Semivolatile Organic Analysis

SDG CTO091-6

Semivolatile Organic Analysis

SDG CTO091-1

Metal Analysis

SDG CTO091-2

Metal Analysis

SDG CTO091-3

Metal Analysis

Data Validation Report

Marine Corp Base Camp Lejeune

AS Database-SWMU 318

SDG: 2004-B **May, 2004**

Disclaimer

The opinions expressed and the qualifiers and values assigned by Integrate Incorporated™ (Integrate) are based on information provided to us in a hardcopy raw data package and/or an electronic deliverable.

Integrate assumes this information accurately and completely represents the samples and information received by the laboratory, the analyses performed by the laboratory, and the raw data and results provided by the laboratory.

If Integrate discovers that for any reason the information is inaccurate or incomplete, or non-representative of the site, Integrate reserves the right to modify or withdraw any information contained in this report.

DATA VALIDATION REPORT

Marine Corp Base Camp Lejeune

AS Database

SWMU 318

SDG: 2004-B

Prepared for:

CH2M HILL
Herndon, VA

Integrate Project Number: 10086
May, 2004

Purpose of the Validation Report

Analytical data validation is a confirmatory procedure that evaluates client-generated laboratory data in accordance with definitive regulatory performance standards set forth by the USEPA.[1,2] Integrate Incorporated™ (Integrate) provides client assistance with data validation to ensure that analytical data are complete, in compliance with laboratory protocols, in agreement with the project data quality objectives, and are technically valid and legally defensible.

Format of the Introduction Section

The introduction contains summary tables that permit the reader easy access to the validated detected results. The tables are identified as: 1) ***Table E 1*** *Sample Identification Cross-Reference Table*, 2) ***Table E 2*** *Summary of Validated Sample Detects Sorted by Client Sample and Fraction* and 3) ***Table E 3*** *Summary of Validated Analyte Detects Sorted by Fraction, Analyte and Client Sample.* A brief description of the contents of each table is presented below.

Executive Summaries:

1) ***Table E 1*** *Sample Identification Cross-Reference Table:* This table is a cross-reference of client sample names and laboratory names. It also references any consultants sample names, if they are available.

2) ***Table E 2*** *Summary of Validated Sample Detects Sorted by Client Sample and Fraction:* Identification of all post-validation detected analytes by client or site sample location, fraction and analyte. The order of the analytical fractions appearing in this report follows the typical order found in a laboratory data package. That is, volatiles appear first, followed by semivolatiles, pesticides, herbicides, metals and conventionals. The detected analytes of each fraction are also displayed according to their order of appearance in the data package. This table also shows the sample type, sample matrix, extraction level, dilution factor and the method quantitation limits (MQL).

3) ***Table E 3*** *Summary of Validated Analyte Detects Sorted by Fraction, Analyte and Client Sample:* Identification of all post-validation detected analytes by fraction, analyte and client site/sample location.

[1]National Functional Guidelines For Organic Data Review, USEPA, October 1999.
[2]National Functional Guidelines For Inorganic Data Review, USEPA, February 1994.

Qualifier Definitions

- U - The analyte was analyzed for , but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
- NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated value represents its approximate concentration.
- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Client Sample	Lab Sample	Sample Type	Matrix	Level	Sampling Date/Time
Volatiles						
	SWMU318-SB06-00RE	WU0691-10RA	Re-extraction/Re-analysis	Soil	Low	03/16/2004 16:00
	SWMU318-SB06-00DRE	WU0691-11RA	Re-extraction/Re-analysis	Soil	Low	03/16/2004 16:00
	SWMU318-SB02-00	WU0691-3	Site Sample	Soil	Low	03/16/2004 14:45
	SWMU318-SB02-00DL	WU0691-3DL	Site Sample Dilution	Soil	Low	03/16/2004 14:45
	SWMU318-SB04-00RE	WU0691-7RA	Re-extraction/Re-analysis	Soil	Low	03/16/2004 15:03
	SWMU318-GW04-01	WU0717-7	Site Sample	Water	Low	03/18/2004 9:15
	SWMU318-GW07	WU0717-9	Site Sample	Water	Low	03/18/2004 15:25
	SWMU318-SB09-00	WU0756-1	Site Sample	Soil	Low	03/22/2004 16:13
	SWMU318-SB09-00RE	WU0756-1RA	Re-extraction/Re-analysis	Soil	Low	03/22/2004 16:13
	SWMU318-GW01	WU0757-2	Site Sample	Water	Low	03/19/2004 9:05
	SWMU318-GW10-01	WU0757-6	Site Sample	Water	Low	03/20/2004 12:15
	SWMU318-GW10-01DL	WU0757-6DL	Site Sample Dilution	Water	Low	03/20/2004 0:00
	SWMU318-GW13RE	WU0757-7RA	Re-extraction/Re-analysis	Water	Low	03/20/2004 0:00
	SWMU318-MW01	WU0894-10	Site Sample	Water	Low	04/03/2004 16:05
	SWMU318-MW02	WU0894-11	Site Sample	Water	Low	04/04/2004 10:50
	SWMU318-MW02DL	WU0894-11DL	Site Sample Dilution	Water	Low	04/04/2004 10:50
	SWMU318-MW03	WU0894-13	Site Sample	Water	Low	04/04/2004 12:30
	SWMU318-MW03DL	WU0894-13DL	Site Sample Dilution	Water	Low	04/04/2004 0:00
	SWMU318-MW03D	WU0894-14	Site Sample	Water	Low	04/04/2004 12:30
	SWMU318-MW03DDL	WU0894-14DL	Site Sample Dilution	Water	Low	04/04/2004 0:00
Semivolatiles						
	SWMU318-SB01-00	WU0691-1	Site Sample	Soil	Low	03/16/2004 14:01
	SWMU318-SB06-01	WU0691-13	Site Sample	Soil	Low	03/16/2004 16:10
	SWMU318-SB06-01D	WU0691-14	Site Sample	Soil	Low	03/16/2004 16:10
	SWMU318-SB06-02	WU0691-15	Site Sample	Soil	Low	03/16/2004 16:25
	SWMU318-SB02-04	WU0691-16	Site Sample	Soil	Low	03/16/2004 15:22
	SWMU318-SB01-04	WU0691-2	Site Sample	Soil	Low	03/16/2004 14:10
	SWMU318-SB02-01	WU0691-4	Site Sample	Soil	Low	03/16/2004 14:50
	SWMU318-SB02-01D	WU0691-5	Site Sample	Soil	Low	03/16/2004 14:50
	SWMU318-SB03-01	WU0691-6	Site Sample	Soil	Low	03/16/2004 15:51
	SWMU318-SB04-02	WU0691-8	Site Sample	Soil	Low	03/16/2004 15:10
	SWMU318-SB04-04	WU0691-9	Site Sample	Soil	Low	03/16/2004 15:15
	SWMU318-GW05	WU0717-1	Site Sample	Water	Low	03/17/2004 9:55
	SWMU318-GW07-01	WU0717-11	Site Sample	Water	Low	03/18/2004 15:45
	SWMU318-GW07-01DLDL	WU0717-11DL	Site Sample Dilution	Water	Low	03/18/2004 0:00
	SWMU318-GW06-01	WU0717-2	Site Sample	Water	Low	03/17/2004 12:15
	SWMU318-GW06-01DLDL	WU0717-2DL2	Site Sample Dilution	Water	Low	03/17/2004 0:00
	SWMU318-GW02	WU0717-3	Site Sample	Water	Low	03/17/2004 18:10
	SWMU318-GW02D	WU0717-4	Site Sample	Water	Low	03/17/2004 18:10
	SWMU318-GW08-01RE	WU0717-5RA	Re-extraction/Re-analysis	Water	Low	03/17/2004 0:00
	SWMU318-GW04	WU0717-6	Site Sample	Water	Low	03/18/2004 8:25
	SWMU318-GW03	WU0717-8	Site Sample	Water	Low	03/18/2004 11:30
	SWMU318-SB05-02D	WU0732-1	Site Sample	Soil	Low	03/16/2004 16:50
	SWMU318-SB05-02	WU0732-2	Site Sample	Soil	Low	03/16/2004 16:50
	SWMU318-SB05-03	WU0732-3	Site Sample	Soil	Low	03/16/2004 17:18
	SWMU318-SB05-03DLDL	WU0732-3DL	Site Sample Dilution	Soil	Low	03/16/2004 17:18
	SWMU318-SB03-00	WU0744-1	Site Sample	Soil	Low	03/17/2004 13:38
	SWMU318-SB07-00	WU0744-2	Site Sample	Soil	Low	03/20/2004 8:39
	SWMU318-SB07-02	WU0744-3	Site Sample	Soil	Low	03/20/2004 8:41
	SWMU318-SB08-00	WU0744-4	Site Sample	Soil	Low	03/20/2004 8:08
	SWMU318-SB08-00DLDL	WU0744-4DL2	Site Sample Dilution	Soil	Low	03/20/2004 0:00
	SWMU318-SB08-04	WU0744-5	Site Sample	Soil	Low	03/20/2004 8:15
	SWMU318-SB09-00	WU0756-1	Site Sample	Soil	Low	03/22/2004 16:13
	SWMU318-SB09-02	WU0756-2	Site Sample	Soil	Low	03/22/2004 16:15
	SWMU318-GW15	WU0757-1	Site Sample	Water	Low	03/22/2004 14:10

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Client Sample	Lab Sample	Sample Type	Matrix	Level	Sampling Date/Time
	SWMU318-GW15DLDL	WU0757-1DL	Site Sample Dilution	Water	Low	03/22/2004 0:00
	SWMU318-GW01	WU0757-2	Site Sample	Water	Low	03/19/2004 9:05
	SWMU318-GW09-01	WU0757-3	Site Sample	Water	Low	03/19/2004 10:00
	SWMU318-GW12-01	WU0757-8	Site Sample	Water	Low	03/20/2004 15:30
	SWMU318-GW10	WU0758-1	Site Sample	Water	Low	03/20/2004 11:30
	SWMU318-GW13	WU0758-2	Site Sample	Water	Low	03/20/2004 14:50
	SWMU318-GW11-01	WU0758-3	Site Sample	Water	Low	03/20/2004 10:55
	SWMU318-SB10-00	WU0770-1	Site Sample	Soil	Low	03/23/2004 7:32
	SWMU318-SB10-03RARE	WU0770-2RA	Re-extraction/Re-analysis	Soil	Low	03/23/2004 0:00
	SWMU318-SB11-01	WU0770-3	Site Sample	Soil	Low	03/23/2004 17:25
	SWMU318-SB11-03	WU0770-4	Site Sample	Soil	Low	03/23/2004 17:35
	SWMU318-SB12-01	WU0770-5	Site Sample	Soil	Low	03/23/2004 16:45
	SWMU318-SB12-04	WU0770-6	Site Sample	Soil	Low	03/23/2004 16:50
	SWMU318-GW14-01	WU0785-4	Site Sample	Water	Low	03/23/2004 15:40
	SWMU318-GW14-01DLDL	WU0785-4DL2	Site Sample Dilution	Water	Low	03/23/2004 0:00
	SWMU318-GW14-01RE	WU0785-4RE	Site Sample	Water	Low	03/23/2004 0:00
	SWMU318-GW14-01REDLDL	WU0785-4REDL	Site Sample Dilution	Water	Low	03/23/2004 0:00
	SWMU318-MW01	WU0894-10	Site Sample	Water	Low	04/03/2004 16:05
	SWMU318-MW02	WU0894-11	Site Sample	Water	Low	04/04/2004 10:50
	SWMU318-MW02DLDL	WU0894-11DL	Site Sample Dilution	Water	Low	04/04/2004 10:50
	SWMU318-MW02D	WU0894-12	Site Sample	Water	Low	04/04/2004 10:50
	SWMU318-MW02DDLDL	WU0894-12DL2	Site Sample Dilution	Water	Low	04/04/2004 0:00
	SWMU318-MW03	WU0894-13	Site Sample	Water	Low	04/04/2004 12:30
Metals						
	SWMU318-SB01-00	WU0691-001	Site Sample	Soil	Low	03/16/2004 14:01
	SWMU318-SB01-04	WU0691-002	Site Sample	Soil	Low	03/16/2004 14:10
	SWMU318-SB02-01	WU0691-004	Site Sample	Soil	Low	03/16/2004 14:50
	SWMU318-SB02-01D	WU0691-005	Site Sample	Soil	Low	03/16/2004 14:50
	SWMU318-SB03-01	WU0691-006	Site Sample	Soil	Low	03/16/2004 15:51
	SWMU318-SB04-02	WU0691-008	Site Sample	Soil	Low	03/16/2004 15:10
	SWMU318-SB04-04	WU0691-009	Site Sample	Soil	Low	03/16/2004 15:15
	SWMU318-SB06-01	WU0691-013	Site Sample	Soil	Low	03/16/2004 16:10
	SWMU318-SB06-01D	WU0691-014	Site Sample	Soil	Low	03/16/2004 16:10
	SWMU318-SB06-02	WU0691-015	Site Sample	Soil	Low	03/16/2004 16:25
	SWMU318-SB02-04	WU0691-016	Site Sample	Soil	Low	03/16/2004 15:22
	SWMU318-SB05-02D	WU0732-001	Site Sample	Soil	Low	03/16/2004 16:50
	SWMU318-SB05-02	WU0732-002	Site Sample	Soil	Low	03/16/2004 16:50
	SWMU318-SB05-03	WU0732-003	Site Sample	Soil	Low	03/16/2004 17:18
	SWMU318-SB03-00	WU0744-001	Site Sample	Soil	Low	03/17/2004 13:38
	SWMU318-SB07-00	WU0744-002	Site Sample	Soil	Low	03/20/2004 8:39
	SWMU318-SB07-02	WU0744-003	Site Sample	Soil	Low	03/20/2004 8:41
	SWMU318-SB08-00	WU0744-004	Site Sample	Soil	Low	03/20/2004 8:08
	SWMU318-SB08-04	WU0744-005	Site Sample	Soil	Low	03/20/2004 8:15
	SWMU318-SB09-00	WU0756-001	Site Sample	Soil	Low	03/22/2004 16:13
	SWMU318-SB09-02	WU0756-002	Site Sample	Soil	Low	03/22/2004 16:15
	SWMU318-SB10-00	WU0770-001	Site Sample	Soil	Low	03/23/2004 7:32
	SWMU318-SB10-03	WU0770-002	Site Sample	Soil	Low	03/23/2004 7:40
	SWMU318-SB11-01	WU0770-003	Site Sample	Soil	Low	03/23/2004 17:25
	SWMU318-SB11-03	WU0770-004	Site Sample	Soil	Low	03/23/2004 17:35
	SWMU318-SB12-01	WU0770-005	Site Sample	Soil	Low	03/23/2004 16:45
	SWMU318-SB12-04	WU0770-006	Site Sample	Soil	Low	03/23/2004 16:50
	SWMU318-MW01	WU0894-010	Site Sample	Water	Low	04/03/2004 16:05
	SWMU318-MW02	WU0894-011	Site Sample	Water	Low	04/04/2004 10:50
	SWMU318-MW03	WU0894-013	Site Sample	Water	Low	04/04/2004 12:30
Conventionals						
	SWMU318-SB01-00	WU0691-1	Site Sample	Soil	Low	03/16/2004 14:01

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Client Sample	Lab Sample	Sample Type	Matrix	Level	Sampling Date/Time
	SWMU318-SB06-00	WU0691-10	Site Sample	Soil	Low	03/16/2004 16:00
	SWMU318-SB06-01	WU0691-13	Site Sample	Soil	Low	03/16/2004 16:10
	SWMU318-SB06-01D	WU0691-14	Site Sample	Soil	Low	03/16/2004 16:10
	SWMU318-SB06-02	WU0691-15	Site Sample	Soil	Low	03/16/2004 16:25
	SWMU318-SB02-04	WU0691-16	Site Sample	Soil	Low	03/16/2004 15:22
	SWMU318-SB01-04	WU0691-2	Site Sample	Soil	Low	03/16/2004 14:10
	SWMU318-SB02-00	WU0691-3	Site Sample	Soil	Low	03/16/2004 14:45
	SWMU318-SB02-01	WU0691-4	Site Sample	Soil	Low	03/16/2004 14:50
	SWMU318-SB02-01D	WU0691-5	Site Sample	Soil	Low	03/16/2004 14:50
	SWMU318-SB03-01	WU0691-6	Site Sample	Soil	Low	03/16/2004 15:51
	SWMU318-SB04-00	WU0691-7	Site Sample	Soil	Low	03/16/2004 15:03
	SWMU318-SB04-02	WU0691-8	Site Sample	Soil	Low	03/16/2004 15:10
	SWMU318-SB04-04	WU0691-9	Site Sample	Soil	Low	03/16/2004 15:15
	SWMU318-SB05-02D	WU0732-1	Site Sample	Soil	Low	03/16/2004 16:50
	SWMU318-SB05-02	WU0732-2	Site Sample	Soil	Low	03/16/2004 16:50
	SWMU318-SB05-03	WU0732-3	Site Sample	Soil	Low	03/16/2004 17:18
	SWMU318-SB03-00	WU0744-1	Site Sample	Soil	Low	03/17/2004 13:38
	SWMU318-SB07-00	WU0744-2	Site Sample	Soil	Low	03/20/2004 8:39
	SWMU318-SB07-02	WU0744-3	Site Sample	Soil	Low	03/20/2004 8:41
	SWMU318-SB08-00	WU0744-4	Site Sample	Soil	Low	03/20/2004 8:08
	SWMU318-SB08-04	WU0744-5	Site Sample	Soil	Low	03/20/2004 8:15
	SWMU318-SB09-00	WU0756-1	Site Sample	Soil	Low	03/22/2004 16:13
	SWMU318-SB09-02	WU0756-2	Site Sample	Soil	Low	03/22/2004 16:15
	SWMU318-SB10-00	WU0770-1	Site Sample	Soil	Low	03/23/2004 7:32
	SWMU318-SB10-03	WU0770-2	Site Sample	Soil	Low	03/23/2004 7:40
	SWMU318-SB11-01	WU0770-3	Site Sample	Soil	Low	03/23/2004 17:25
	SWMU318-SB11-03	WU0770-4	Site Sample	Soil	Low	03/23/2004 17:35
	SWMU318-SB12-01	WU0770-5	Site Sample	Soil	Low	03/23/2004 16:45
	SWMU318-SB12-04	WU0770-6	Site Sample	Soil	Low	03/23/2004 16:50

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
SWMU318-GW01									
	Volatiles								
		CIS-1,2-DICHLOROETHENE	Site Sample	Water	Low	1	10	2 J	µg/L
		1,2-Dichloroethylene (total)	Site Sample	Water	Low	1	10	2 J	µg/L
		ETHYLBENZENE	Site Sample	Water	Low	1	10	1 J	µg/L
		ISOPROPYLBENZENE	Site Sample	Water	Low	1	10	2 J	µg/L
		METHYLCYCLOHEXANE	Site Sample	Water	Low	1	10	1 J	µg/L
	Semivolatiles								
		NAPHTHALENE	Site Sample	Water	Low	1	10	9 J	µg/L
SWMU318-GW04									
	Semivolatiles								
		NAPHTHALENE	Site Sample	Water	Low	1	10	12	µg/L
		2-methylnaphthalene	Site Sample	Water	Low	1	10	8 J	µg/L
SWMU318-GW04-01									
	Volatiles								
		CIS-1,2-DICHLOROETHENE	Site Sample	Water	Low	1	10	2 J	µg/L
		1,2-Dichloroethylene (total)	Site Sample	Water	Low	1	10	2 J	µg/L
		BENZENE	Site Sample	Water	Low	1	10	5 J	µg/L
		TRICHLOROETHENE	Site Sample	Water	Low	1	10	2 J	µg/L
SWMU318-GW06-01									
	Semivolatiles								
		2-methylphenol	Site Sample	Water	Low	40	400	410 D	µg/L
		4-methylphenol	Site Sample	Water	Low	40	400	250 DJ	µg/L
		2,4-dimethylphenol	Site Sample	Water	Low	40	400	990 D	µg/L
		NAPHTHALENE	Site Sample	Water	Low	40	400	2,100 D	µg/L
		2-methylnaphthalene	Site Sample	Water	Low	40	400	480 D	µg/L
		1,1-Biphenyl	Site Sample	Water	Low	1	10	36	µg/L
		ACENAPHTHENE	Site Sample	Water	Low	40	400	280 DJ	µg/L
		DIBENZOFURAN	Site Sample	Water	Low	1	10	73	µg/L
		FLUORENE	Site Sample	Water	Low	1	10	46	µg/L
		CARBAZOLE	Site Sample	Water	Low	1	10	26	µg/L
SWMU318-GW07-01DLDL									
	Semivolatiles								
		2,4-dimethylphenol	Site Sample Dilution	Water	Low	2	10	12 J	µg/L
		NAPHTHALENE	Site Sample Dilution	Water	Low	2	10	98	µg/L
SWMU318-GW10-01									
	Volatiles								
		VINYL CHLORIDE	Site Sample	Water	Low	1	10	140	µg/L
		1,1-dichloroethene	Site Sample	Water	Low	1	10	4 J	µg/L
		1,1,2-Trichloro-1,2,2-Trifluoroethane	Site Sample	Water	Low	1	10	180	µg/L
		TRANS-1,2-DICHLOROETHENE	Site Sample	Water	Low	1	10	6 J	µg/L
		CIS-1,2-DICHLOROETHENE	Site Sample	Water	Low	10	100	670 D	µg/L
		1,2-Dichloroethylene (total)	Site Sample	Water	Low	10	100	670 D	µg/L
		BENZENE	Site Sample	Water	Low	1	10	2 J	µg/L

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detectio limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result		Units
SWMU318-GW10-01										
	Volatiles									
		TRICHLOROETHENE	Site Sample	Water	Low	10	100	1,200	D	µg/L
		TOLUENE	Site Sample	Water	Low	1	10	33		µg/L
		ETHYLBENZENE	Site Sample	Water	Low	1	10	3	J	µg/L
		XYLENES (TOTAL)	Site Sample	Water	Low	1	10	8	J	µg/L
		M-,P-XYLENE	Site Sample	Water	Low	1	10	5	J	µg/L
		O-XYLENE	Site Sample	Water	Low	1	10	4	J	µg/L
SWMU318-GW12-01										
	Semivolatiles									
		NAPHTHALENE	Site Sample	Water	Low	1	10	26		µg/L
		ACENAPHTHENE	Site Sample	Water	Low	1	10	11		µg/L
SWMU318-GW13RE										
	Volatiles									
		1,1,2-Trichloro-1,2,2-Trifluoroethane	Re-extraction/Re-analysis	Water	Low	1	10	54		µg/L
		CIS-1,2-DICHLOROETHENE	Re-extraction/Re-analysis	Water	Low	1	10	19		µg/L
		1,2-Dichloroethylene (total)	Re-extraction/Re-analysis	Water	Low	1	10	19		µg/L
		TRICHLOROETHENE	Re-extraction/Re-analysis	Water	Low	1	10	57		µg/L
SWMU318-GW14-01										
	Semivolatiles									
		PHENOL	Site Sample	Water	Low	1	10	0.5	J	µg/L
		2,4-dimethylphenol	Site Sample	Water	Low	1	10	13		µg/L
		NAPHTHALENE	Site Sample	Water	Low	25	120	800	D	µg/L
		2-methylnaphthalene	Site Sample	Water	Low	25	120	130	D	µg/L
		1,1-Biphenyl	Site Sample	Water	Low	1	10	12		µg/L
		ACENAPHTHENE	Site Sample	Water	Low	25	120	95	DJ	µg/L
		DIBENZOFURAN	Site Sample	Water	Low	1	10	26		µg/L
		FLUORENE	Site Sample	Water	Low	1	10	16		µg/L
		PHENANTHRENE	Site Sample	Water	Low	1	10	0.6	J	µg/L
		CARBAZOLE	Site Sample	Water	Low	1	10	24	J	µg/L
		BIS(2-ETHYLHEXYL) PHTHALATE	Site Sample	Water	Low	1	10	2	J	µg/L
SWMU318-GW15										
	Semivolatiles									
		2,4-dimethylphenol	Site Sample	Water	Low	1	10	21		µg/L
		NAPHTHALENE	Site Sample	Water	Low	5	50	340	D	µg/L
		2-methylnaphthalene	Site Sample	Water	Low	5	50	130	D	µg/L
		1,1-Biphenyl	Site Sample	Water	Low	1	10	27		µg/L
		ACENAPHTHENE	Site Sample	Water	Low	5	50	130	D	µg/L
		DIBENZOFURAN	Site Sample	Water	Low	1	10	68		µg/L
		FLUORENE	Site Sample	Water	Low	1	10	49		µg/L
		PHENANTHRENE	Site Sample	Water	Low	1	10	11		µg/L
		CARBAZOLE	Site Sample	Water	Low	1	10	44		µg/L
SWMU318-MW01										
	Volatiles									
		CARBON DISULFIDE	Site Sample	Water	Low	1	10	1	J	µg/L

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
SWMU318-MW01									
	Volatiles								
		CIS-1,2-DICHLOROETHENE	Site Sample	Water	Low	1	10	1 J	µg/L
		1,2-Dichloroethylene (total)	Site Sample	Water	Low	1	10	1 J	µg/L
	Metals								
		ARSENIC	Site Sample	Water	Low	1	10	3.1 B	µg/L
		BARIUM	Site Sample	Water	Low	1	200	26 B	µg/L
SWMU318-MW02									
	Volatiles								
		VINYL CHLORIDE	Site Sample	Water	Low	1	10	13	µg/L
		1,1-dichloroethene	Site Sample	Water	Low	1	10	2 J	µg/L
		TRANS-1,2-DICHLOROETHENE	Site Sample	Water	Low	1	10	2 J	µg/L
		CIS-1,2-DICHLOROETHENE	Site Sample	Water	Low	1	10	120	µg/L
		1,2-Dichloroethylene (total)	Site Sample	Water	Low	1	10	120	µg/L
		BENZENE	Site Sample	Water	Low	1	10	38	µg/L
		TRICHLOROETHENE	Site Sample	Water	Low	5	50	240 D	µg/L
		TOLUENE	Site Sample	Water	Low	1	10	10	µg/L
		ETHYLBENZENE	Site Sample	Water	Low	1	10	30	µg/L
		XYLENES (TOTAL)	Site Sample	Water	Low	1	10	27	µg/L
		M-,P-XYLENE	Site Sample	Water	Low	1	10	19	µg/L
		O-XYLENE	Site Sample	Water	Low	1	10	8 J	µg/L
		ISOPROPYLBENZENE	Site Sample	Water	Low	1	10	2 J	µg/L
	Semivolatiles								
		2,4-dimethylphenol	Site Sample	Water	Low	1	10	67	µg/L
		NAPHTHALENE	Site Sample	Water	Low	4	40	260 D	µg/L
		2-methylnaphthalene	Site Sample	Water	Low	1	10	62	µg/L
		1,1-Biphenyl	Site Sample	Water	Low	1	10	8 J	µg/L
		ACENAPHTHENE	Site Sample	Water	Low	1	10	35	µg/L
		DIBENZOFURAN	Site Sample	Water	Low	1	10	10	µg/L
		FLUORENE	Site Sample	Water	Low	1	10	9	µg/L
		CARBAZOLE	Site Sample	Water	Low	1	10	10	µg/L
	Metals								
		BARIUM	Site Sample	Water	Low	1	200	7.1 B	µg/L
SWMU318-MW02D									
	Semivolatiles								
		2,4-dimethylphenol	Site Sample	Water	Low	1	10	74	µg/L
		NAPHTHALENE	Site Sample	Water	Low	5	50	360 D	µg/L
		2-methylnaphthalene	Site Sample	Water	Low	5	50	97 D	µg/L
		1,1-Biphenyl	Site Sample	Water	Low	1	10	8 J	µg/L
		ACENAPHTHENE	Site Sample	Water	Low	1	10	32	µg/L
		DIBENZOFURAN	Site Sample	Water	Low	1	10	9 J	µg/L
		FLUORENE	Site Sample	Water	Low	1	10	8 J	µg/L
		CARBAZOLE	Site Sample	Water	Low	1	10	9 J	µg/L

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detectio limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result		Units
SWMU318-MW03										
	Volatiles									
		VINYL CHLORIDE	Site Sample	Water	Low	1	10	96		µg/L
		1,1,2-Trichloro-1,2,2-Trifluoroethane	Site Sample	Water	Low	1	10	180		µg/L
		TRANS-1,2-DICHLOROETHENE	Site Sample	Water	Low	1	10	2	J	µg/L
		CIS-1,2-DICHLOROETHENE	Site Sample	Water	Low	10	100	550	D	µg/L
		1,2-Dichloroethylene (total)	Site Sample	Water	Low	10	100	550	D	µg/L
		BENZENE	Site Sample	Water	Low	1	10	1	J	µg/L
		TRICHLOROETHENE	Site Sample	Water	Low	10	100	960	D	µg/L
		TOLUENE	Site Sample	Water	Low	1	10	28		µg/L
		ETHYLBENZENE	Site Sample	Water	Low	1	10	3	J	µg/L
		XYLENES (TOTAL)	Site Sample	Water	Low	1	10	7	J	µg/L
		M-,P-XYLENE	Site Sample	Water	Low	1	10	2	J	µg/L
		O-XYLENE	Site Sample	Water	Low	1	10	5	J	µg/L
		ISOPROPYLBENZENE	Site Sample	Water	Low	1	10	1	J	µg/L
		METHYLCYCLOHEXANE	Site Sample	Water	Low	1	10	12		µg/L
	Semivolatiles									
		PHENOL	Site Sample	Water	Low	1	10	38		µg/L
	Metals									
		BARIUM	Site Sample	Water	Low	1	200	25.1	B	µg/L
SWMU318-MW03D										
	Volatiles									
		VINYL CHLORIDE	Site Sample	Water	Low	1	10	88		µg/L
		1,1,2-Trichloro-1,2,2-Trifluoroethane	Site Sample	Water	Low	1	10	160		µg/L
		TRANS-1,2-DICHLOROETHENE	Site Sample	Water	Low	1	10	1	J	µg/L
		CIS-1,2-DICHLOROETHENE	Site Sample	Water	Low	10	100	590	D	µg/L
		1,2-Dichloroethylene (total)	Site Sample	Water	Low	10	100	590	D	µg/L
		TRICHLOROETHENE	Site Sample	Water	Low	10	100	1,000	D	µg/L
		TOLUENE	Site Sample	Water	Low	1	10	28		µg/L
		ETHYLBENZENE	Site Sample	Water	Low	1	10	3	J	µg/L
		XYLENES (TOTAL)	Site Sample	Water	Low	1	10	7	J	µg/L
		M-,P-XYLENE	Site Sample	Water	Low	1	10	2	J	µg/L
		O-XYLENE	Site Sample	Water	Low	1	10	5	J	µg/L
SWMU318-SB01-00										
	Semivolatiles									
		NAPHTHALENE	Site Sample	Soil	Low	1	330	2,900		µg/Kg
		2-methylnaphthalene	Site Sample	Soil	Low	1	330	180	J	µg/Kg
		1,1-Biphenyl	Site Sample	Soil	Low	1	330	11	J	µg/Kg
		ACENAPHTHENE	Site Sample	Soil	Low	1	330	220	J	µg/Kg
		DIBENZOFURAN	Site Sample	Soil	Low	1	330	150	J	µg/Kg
		FLUORENE	Site Sample	Soil	Low	1	330	160	J	µg/Kg
		PHENANTHRENE	Site Sample	Soil	Low	1	330	120	J	µg/Kg
		ANTHRACENE	Site Sample	Soil	Low	1	330	32	J	µg/Kg
		CARBAZOLE	Site Sample	Soil	Low	1	330	19	J	µg/Kg
		DI-N-BUTYL PHTHALATE	Site Sample	Soil	Low	1	330	31	J	µg/Kg
		FLUORANTHENE	Site Sample	Soil	Low	1	330	650		µg/Kg
		PYRENE	Site Sample	Soil	Low	1	330	830		µg/Kg

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detectio limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
SWMU318-SB01-00									
	Semivolatiles								
		BENZO(A)ANTHRACENE	Site Sample	Soil	Low	1	330	350 J	µg/Kg
		CHRYSENE	Site Sample	Soil	Low	1	330	390	µg/Kg
		BENZO(B)FLUORANTHENE	Site Sample	Soil	Low	1	330	430	µg/Kg
		BENZO(K)FLUORANTHENE	Site Sample	Soil	Low	1	330	300 J	µg/Kg
		BENZO(A)PYRENE	Site Sample	Soil	Low	1	330	380 J	µg/Kg
		INDENO(1,2,3-CD)PYRENE	Site Sample	Soil	Low	1	330	210 J	µg/Kg
		DIBENZO(A,H)ANTHRACENE	Site Sample	Soil	Low	1	330	68 J	µg/Kg
	Metals								
		SILVER	Site Sample	Soil	Low	1	1.6	4.6 J	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.6	0.71 B	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	32	10.3 B	mg/Kg
		CADMIUM	Site Sample	Soil	Low	1	0.81	0.43 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	1.6	6.1 J	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.49	19.8	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	0.81	0.42 J	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	85	%
SWMU318-SB01-04									
	Semivolatiles								
		NAPHTHALENE	Site Sample	Soil	Low	1	330	45 J	µg/Kg
		ACENAPHTHENE	Site Sample	Soil	Low	1	330	20 J	µg/Kg
		DIBENZOFURAN	Site Sample	Soil	Low	1	330	14 J	µg/Kg
		FLUORENE	Site Sample	Soil	Low	1	330	17 J	µg/Kg
		PHENANTHRENE	Site Sample	Soil	Low	1	330	18 J	µg/Kg
		FLUORANTHENE	Site Sample	Soil	Low	1	330	120 J	µg/Kg
		PYRENE	Site Sample	Soil	Low	1	330	120 J	µg/Kg
		BENZO(A)ANTHRACENE	Site Sample	Soil	Low	1	330	68 J	µg/Kg
		CHRYSENE	Site Sample	Soil	Low	1	330	68 J	µg/Kg
		BENZO(B)FLUORANTHENE	Site Sample	Soil	Low	1	330	68 J	µg/Kg
		BENZO(K)FLUORANTHENE	Site Sample	Soil	Low	1	330	50 J	µg/Kg
		BENZO(A)PYRENE	Site Sample	Soil	Low	1	330	54 J	µg/Kg
		INDENO(1,2,3-CD)PYRENE	Site Sample	Soil	Low	1	330	28 J	µg/Kg
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.11	0.07 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	2.2	1.4 B	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	43	15.9 B	mg/Kg
		CADMIUM	Site Sample	Soil	Low	1	1.1	0.14 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2.2	14.6 J	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.65	11	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	74	%
SWMU318-SB02-00									
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	86	%

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detectio limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
SWMU318-SB02-01									
	Semivolatiles								
		NAPHTHALENE	Site Sample	Soil	Low	1	330	140 J	µg/Kg
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.1	0.04 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.7	1 B	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	33	12.8 B	mg/Kg
		CADMIUM	Site Sample	Soil	Low	1	0.83	0.09 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	1.7	5 J	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.5	7.4	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	0.83	0.81 J	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	90	%
SWMU318-SB02-01D									
	Semivolatiles								
		NAPHTHALENE	Site Sample	Soil	Low	1	330	220 J	µg/Kg
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.11	0.05 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.8	1.8	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	35	19.3 B	mg/Kg
		CADMIUM	Site Sample	Soil	Low	1	0.89	0.11 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	1.8	8.4 J	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.53	11	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	0.89	0.66 J	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	85	%
SWMU318-SB02-04									
	Semivolatiles								
		NAPHTHALENE	Site Sample	Soil	Low	1	330	23 J	µg/Kg
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.1	0.03 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	2	10.2	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	41	9.4 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2	11.1 J	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.61	7.5	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	76	%
SWMU318-SB03-00									
	Metals								
		BARIUM	Site Sample	Soil	Low	1	0.85	4.6 J	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2.5	2.8 J	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.85	2 J	mg/Kg

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detectio limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
SWMU318-SB03-00									
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	82	%
SWMU318-SB03-01									
	Semivolatiles								
		BENZALDEHYDE	Site Sample	Soil	Low	1	330	23 J	µg/Kg
		NAPHTHALENE	Site Sample	Soil	Low	1	330	18 J	µg/Kg
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.11	0.06 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.9	3.1	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	38	15.3 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	1.9	10.2 J	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.57	8.6	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	0.95	0.86 J	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	86	%
SWMU318-SB04-00									
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	83	%
SWMU318-SB04-00RE									
	Volatiles								
		TOLUENE	Re-extraction/Re-analysis	Soil	Low	1	10	0.9 J	µg/Kg
		METHYL ACETATE	Re-extraction/Re-analysis	Soil	Low	1	10	19 J	µg/Kg
SWMU318-SB04-02									
	Semivolatiles								
		FLUORANTHENE	Site Sample	Soil	Low	1	330	67 J	µg/Kg
		PYRENE	Site Sample	Soil	Low	1	330	68 J	µg/Kg
		BENZO(A)ANTHRACENE	Site Sample	Soil	Low	1	330	42 J	µg/Kg
		CHRYSENE	Site Sample	Soil	Low	1	330	50 J	µg/Kg
		BENZO(B)FLUORANTHENE	Site Sample	Soil	Low	1	330	72 J	µg/Kg
		BENZO(K)FLUORANTHENE	Site Sample	Soil	Low	1	330	39 J	µg/Kg
		BENZO(A)PYRENE	Site Sample	Soil	Low	1	330	43 J	µg/Kg
		INDENO(1,2,3-CD)PYRENE	Site Sample	Soil	Low	1	330	32 J	µg/Kg
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.12	0.07 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	2.6	51	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	52	21.4 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2.6	34 J	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.78	14.8	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	1.3	0.89 J	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	67	%

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detectio limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
SWMU318-SB04-04									
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.12	0.03 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	2.1	1.6 B	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	43	4.8 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2.1	6.7 J	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.64	6.7	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	1.1	0.77 J	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	80	%
SWMU318-SB05-02									
	Metals								
		ARSENIC	Site Sample	Soil	Low	1	1.8	4.4	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	36	18.8 B	mg/Kg
		CADMIUM	Site Sample	Soil	Low	1	0.91	0.24 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	1.8	13.2	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.54	45.9 J	mg/Kg
		MERCURY	Site Sample	Soil	Low	1	0.12	0.04 B	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	77	%
SWMU318-SB05-02D									
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.12	0.08 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.5	5.4	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	30	22.8 B	mg/Kg
		CADMIUM	Site Sample	Soil	Low	1	0.76	0.15 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	1.5	18.6	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.46	26.1 J	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	0.76	0.5 B	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	82	%
SWMU318-SB05-03									
	Semivolatiles								
		BENZALDEHYDE	Site Sample	Soil	Low	1	330	18 J	µg/Kg
		PHENANTHRENE	Site Sample	Soil	Low	1	330	170 J	µg/Kg
		ANTHRACENE	Site Sample	Soil	Low	1	330	31 J	µg/Kg
		CARBAZOLE	Site Sample	Soil	Low	1	330	65 J	µg/Kg
		DI-N-BUTYL PHTHALATE	Site Sample	Soil	Low	2	800	4,600 D	µg/Kg
		FLUORANTHENE	Site Sample	Soil	Low	1	330	3,000	µg/Kg
		PYRENE	Site Sample	Soil	Low	1	330	2,200	µg/Kg
		3,3'-dichlorobenzidine	Site Sample	Soil	Low	1	330	87 J	µg/Kg
		BENZO(A)ANTHRACENE	Site Sample	Soil	Low	1	330	1,200	µg/Kg
		CHRYSENE	Site Sample	Soil	Low	1	330	1,900	µg/Kg
		BENZO(B)FLUORANTHENE	Site Sample	Soil	Low	1	330	1,500	µg/Kg
		BENZO(K)FLUORANTHENE	Site Sample	Soil	Low	1	330	1,200	µg/Kg

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detectio limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
SWMU318-SB05-03									
	Semivolatiles								
		BENZO(A)PYRENE	Site Sample	Soil	Low	1	330	820	µg/Kg
		INDENO(1,2,3-CD)PYRENE	Site Sample	Soil	Low	1	330	440	µg/Kg
		DIBENZO(A,H)ANTHRACENE	Site Sample	Soil	Low	1	330	180 J	µg/Kg
		BENZO[G,H,I]PERYLENE	Site Sample	Soil	Low	1	330	130 J	µg/Kg
	Metals								
		ARSENIC	Site Sample	Soil	Low	1	1.7	1.9	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	35	16.2 B	mg/Kg
		CADMIUM	Site Sample	Soil	Low	1	0.87	0.37 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	1.7	8.1	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.52	12.2 J	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	0.87	0.62 B	mg/Kg
		MERCURY	Site Sample	Soil	Low	1	0.12	0.04 B	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	82	%
SWMU318-SB06-00									
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	82	%
SWMU318-SB06-01									
	Semivolatiles								
		BENZALDEHYDE	Site Sample	Soil	Low	1	330	28 J	µg/Kg
		NAPHTHALENE	Site Sample	Soil	Low	1	330	310 J	µg/Kg
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.11	0.05 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	2.2	1 B	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	44	13.6 B	mg/Kg
		CADMIUM	Site Sample	Soil	Low	1	1.1	0.07 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2.2	5.1 J	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.67	10.1	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	1.1	1 J	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	80	%
SWMU318-SB06-01D									
	Semivolatiles								
		BENZALDEHYDE	Site Sample	Soil	Low	1	330	34 J	µg/Kg
		NAPHTHALENE	Site Sample	Soil	Low	1	330	280 J	µg/Kg
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.1	0.05 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.8	1.6 B	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	35	14.9 B	mg/Kg
		CADMIUM	Site Sample	Soil	Low	1	0.88	0.08 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	1.8	7.2 J	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.53	9.5	mg/Kg

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detectio limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
SWMU318-SB06-01D									
	Metals								
		SELENIUM	Site Sample	Soil	Low	1	0.88	0.65 J	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	80	%
SWMU318-SB06-02									
	Semivolatiles								
		NAPHTHALENE	Site Sample	Soil	Low	1	330	89 J	µg/Kg
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.099	0.11	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	2	1.1 B	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	39	23.5 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2	14 J	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.59	15.8	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	0.99	0.6 J	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	77	%
SWMU318-SB07-00									
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.11	0.01 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.2	0.48 B	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	0.75	5.9	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2.2	3.8	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.75	2.8	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	1.5	0.38 B	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	83	%
SWMU318-SB07-02									
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.11	0.05 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.5	1.6	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	0.92	19.1	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2.8	8	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.92	10.1	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	1.8	0.64 B	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	78	%
SWMU318-SB08-00									
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.099	0.01 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.2	1.1 B	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	0.72	22.1	mg/Kg
		CADMIUM	Site Sample	Soil	Low	1	1.4	1.3 B	mg/Kg

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detectio limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
SWMU318-SB08-00									
	Metals								
		CHROMIUM	Site Sample	Soil	Low	1	2.2	10.7	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.72	2.2	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	92	%
SWMU318-SB08-00DLDL									
	Semivolatiles								
		NAPHTHALENE	Site Sample Dilution	Soil	Low	25	330	32,000	µg/Kg
SWMU318-SB08-04									
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.14	0.03 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.4	4.5	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	0.89	11.5	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2.7	15.5	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.89	7.8	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	1.8	0.48 B	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	73	%
SWMU318-SB09-00									
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.11	0.03 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.9	2.6	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	38	20.3 B	mg/Kg
		CADMIUM	Site Sample	Soil	Low	1	0.96	0.55 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	1.9	10.3	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	0.96	0.69 B	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.58	21.7 J	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	85	%
SWMU318-SB09-00RE									
	Volatiles								
		TRICHLOROFLUOROMETHANE	Re-extraction/Re-analysis	Soil	Low	1	10	2 J	µg/Kg
SWMU318-SB09-02									
	Metals								
		BARIUM	Site Sample	Soil	Low	1	41	6.2 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2.1	7	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.62	3.8 J	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	84	%

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detectio limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
SWMU318-SB10-00									
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.1	0.02 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	1.7	3.7	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	35	11.7 B	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.7	0.82 B	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.52	8.4 J	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	82	%
SWMU318-SB10-03									
	Metals								
		MERCURY	Site Sample	Soil	Low	1	0.13	0.06 B	mg/Kg
		LEAD	Site Sample	Soil	Low	1	0.69	14.4 J	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	46	21.7 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2.3	29.8	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	2.3	5	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	71	%
SWMU318-SB11-01									
	Metals								
		LEAD	Site Sample	Soil	Low	1	0.6	13.7 J	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	2	2 B	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	40	59.8	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2	6.2	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	0.99	1.1	mg/Kg
		MERCURY	Site Sample	Soil	Low	1	0.11	0.05 B	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	86	%
SWMU318-SB11-03									
	Semivolatiles								
		NAPHTHALENE	Site Sample	Soil	Low	1	330	580	µg/Kg
	Metals								
		LEAD	Site Sample	Soil	Low	1	0.65	5.3 J	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	2.2	1.4 B	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	41	9.1 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	2.2	3	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	1.1	0.68 B	mg/Kg
		MERCURY	Site Sample	Soil	Low	1	0.13	0.04 B	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	77	%
SWMU318-SB12-01									
	Metals								
		LEAD	Site Sample	Soil	Low	1	0.57	3.5 J	mg/Kg

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detectio limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Client Sample	Fraction	Analyte	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
SWMU318-SB12-01									
	Metals								
		ARSENIC	Site Sample	Soil	Low	1	1.9	1.9 B	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	38	9.2 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	1.9	6.4	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	0.95	0.67 B	mg/Kg
		MERCURY	Site Sample	Soil	Low	1	0.1	0.03 B	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	87	%
SWMU318-SB12-04									
	Metals								
		LEAD	Site Sample	Soil	Low	1	0.53	15.3	mg/Kg
		ARSENIC	Site Sample	Soil	Low	1	1.8	10.6	mg/Kg
		BARIUM	Site Sample	Soil	Low	1	36	19.4 B	mg/Kg
		CADMIUM	Site Sample	Soil	Low	1	0.89	0.62 B	mg/Kg
		CHROMIUM	Site Sample	Soil	Low	1	1.8	21.2	mg/Kg
		SELENIUM	Site Sample	Soil	Low	1	0.89	1	mg/Kg
		MERCURY	Site Sample	Soil	Low	1	0.13	0.06 B	mg/Kg
	Conventionals								
		TOTAL SOLIDS	Site Sample	Soil	Low	1	-	77	%

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detectio limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Volatiles									
	1,2-Dichloroethylene (total)								
		SWMU318-GW01	Site Sample	Water	Low	1	10	2 J	µg/L
		SWMU318-GW04-01	Site Sample	Water	Low	1	10	2 J	µg/L
		SWMU318-GW10-01	Site Sample	Water	Low	10	100	670 D	µg/L
		SWMU318-GW13RE	Re-extraction/Re-analysis	Water	Low	1	10	19	µg/L
		SWMU318-MW01	Site Sample	Water	Low	1	10	1 J	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	120	µg/L
		SWMU318-MW03	Site Sample	Water	Low	10	100	550 D	µg/L
		SWMU318-MW03D	Site Sample	Water	Low	10	100	590 D	µg/L
	BENZENE								
		SWMU318-GW04-01	Site Sample	Water	Low	1	10	5 J	µg/L
		SWMU318-GW10-01	Site Sample	Water	Low	1	10	2 J	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	38	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	10	1 J	µg/L
	CARBON DISULFIDE								
		SWMU318-MW01	Site Sample	Water	Low	1	10	1 J	µg/L
	CIS-1,2-DICHLOROETHENE								
		SWMU318-GW01	Site Sample	Water	Low	1	10	2 J	µg/L
		SWMU318-GW04-01	Site Sample	Water	Low	1	10	2 J	µg/L
		SWMU318-GW10-01	Site Sample	Water	Low	10	100	670 D	µg/L
		SWMU318-GW13RE	Re-extraction/Re-analysis	Water	Low	1	10	19	µg/L
		SWMU318-MW01	Site Sample	Water	Low	1	10	1 J	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	120	µg/L
		SWMU318-MW03	Site Sample	Water	Low	10	100	550 D	µg/L
		SWMU318-MW03D	Site Sample	Water	Low	10	100	590 D	µg/L
	ISOPROPYLBENZENE								
		SWMU318-GW01	Site Sample	Water	Low	1	10	2 J	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	2 J	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	10	1 J	µg/L
	1,1-dichloroethene								
		SWMU318-GW10-01	Site Sample	Water	Low	1	10	4 J	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	2 J	µg/L

Qualifiers:

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E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Volatiles									
	ETHYLBENZENE								
		SWMU318-GW01	Site Sample	Water	Low	1	10	1 J	µg/L
		SWMU318-GW10-01	Site Sample	Water	Low	1	10	3 J	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	30	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	10	3 J	µg/L
		SWMU318-MW03D	Site Sample	Water	Low	1	10	3 J	µg/L
	METHYL ACETATE								
		SWMU318-SB04-00RE	Re-extraction/Re-analysis	Soil	Low	1	10	19 J	µg/Kg
	METHYLCYCLOHEXANE								
		SWMU318-GW01	Site Sample	Water	Low	1	10	1 J	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	10	12	µg/L
	O-XYLENE								
		SWMU318-GW10-01	Site Sample	Water	Low	1	10	4 J	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	8 J	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	10	5 J	µg/L
		SWMU318-MW03D	Site Sample	Water	Low	1	10	5 J	µg/L
	TOLUENE								
		SWMU318-GW10-01	Site Sample	Water	Low	1	10	33	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	10	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	10	28	µg/L
		SWMU318-MW03D	Site Sample	Water	Low	1	10	28	µg/L
		SWMU318-SB04-00RE	Re-extraction/Re-analysis	Soil	Low	1	10	0.9 J	µg/Kg
	TRANS-1,2-DICHLOROETHENE								
		SWMU318-GW10-01	Site Sample	Water	Low	1	10	6 J	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	2 J	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	10	2 J	µg/L
		SWMU318-MW03D	Site Sample	Water	Low	1	10	1 J	µg/L
	TRICHLOROETHENE								
		SWMU318-GW04-01	Site Sample	Water	Low	1	10	2 J	µg/L
		SWMU318-GW10-01	Site Sample	Water	Low	10	100	1,200 D	µg/L
		SWMU318-GW13RE	Re-extraction/Re-analysis	Water	Low	1	10	57	µg/L
		SWMU318-MW02	Site Sample	Water	Low	5	50	240 D	µg/L

Qualifiers:

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P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Volatiles									
		SWMU318-MW03	Site Sample	Water	Low	10	100	960 D	µg/L
		SWMU318-MW03D	Site Sample	Water	Low	10	100	1,000 D	µg/L
	TRICHLOROFLUOROMETHANE								
		SWMU318-SB09-00RE	Re-extraction/Re-analysis	Soil	Low	1	10	2 J	µg/Kg
	1,1,2-Trichloro-1,2,2-Trifluoroethane								
		SWMU318-GW10-01	Site Sample	Water	Low	1	10	180	µg/L
		SWMU318-GW13RE	Re-extraction/Re-analysis	Water	Low	1	10	54	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	10	180	µg/L
		SWMU318-MW03D	Site Sample	Water	Low	1	10	160	µg/L
	VINYL CHLORIDE								
		SWMU318-GW10-01	Site Sample	Water	Low	1	10	140	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	13	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	10	96	µg/L
		SWMU318-MW03D	Site Sample	Water	Low	1	10	88	µg/L
	XYLENES (TOTAL)								
		SWMU318-GW10-01	Site Sample	Water	Low	1	10	8 J	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	27	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	10	7 J	µg/L
		SWMU318-MW03D	Site Sample	Water	Low	1	10	7 J	µg/L
	M-,P-XYLENE								
		SWMU318-GW10-01	Site Sample	Water	Low	1	10	5 J	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	19	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	10	2 J	µg/L
		SWMU318-MW03D	Site Sample	Water	Low	1	10	2 J	µg/L
Semivolatiles									
	ACENAPHTHENE								
		SWMU318-GW06-01	Site Sample	Water	Low	40	400	280 DJ	µg/L
		SWMU318-GW12-01	Site Sample	Water	Low	1	10	11	µg/L
		SWMU318-GW14-01	Site Sample	Water	Low	25	120	95 DJ	µg/L
		SWMU318-GW15	Site Sample	Water	Low	5	50	130 D	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	35	µg/L
		SWMU318-MW02D	Site Sample	Water	Low	1	10	32	µg/L

Qualifiers:

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P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Semivolatiles									
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	220 J	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	20 J	µg/Kg
	ANTHRACENE								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	32 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	31 J	µg/Kg
	BENZALDEHYDE								
		SWMU318-SB03-01	Site Sample	Soil	Low	1	330	23 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	18 J	µg/Kg
		SWMU318-SB06-01	Site Sample	Soil	Low	1	330	28 J	µg/Kg
		SWMU318-SB06-01D	Site Sample	Soil	Low	1	330	34 J	µg/Kg
	BENZO(A)ANTHRACENE								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	350 J	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	68 J	µg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	330	42 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	1,200	µg/Kg
	BENZO(A)PYRENE								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	380 J	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	54 J	µg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	330	43 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	820	µg/Kg
	BENZO(B)FLUORANTHENE								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	430	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	68 J	µg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	330	72 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	1,500	µg/Kg
	BENZO[G,H,I]PERYLENE								
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	130 J	µg/Kg
	BENZO(K)FLUORANTHENE								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	300 J	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	50 J	µg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	330	39 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	1,200	µg/Kg

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Semivolatiles									
	1,1-Biphenyl								
		SWMU318-GW06-01	Site Sample	Water	Low	1	10	36	µg/L
		SWMU318-GW14-01	Site Sample	Water	Low	1	10	12	µg/L
		SWMU318-GW15	Site Sample	Water	Low	1	10	27	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	8 J	µg/L
		SWMU318-MW02D	Site Sample	Water	Low	1	10	8 J	µg/L
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	11 J	µg/Kg
	CARBAZOLE								
		SWMU318-GW06-01	Site Sample	Water	Low	1	10	26	µg/L
		SWMU318-GW14-01	Site Sample	Water	Low	1	10	24 J	µg/L
		SWMU318-GW15	Site Sample	Water	Low	1	10	44	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	10	µg/L
		SWMU318-MW02D	Site Sample	Water	Low	1	10	9 J	µg/L
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	19 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	65 J	µg/Kg
	CHRYSENE								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	390	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	68 J	µg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	330	50 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	1,900	µg/Kg
	DI-N-BUTYL PHTHALATE								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	31 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	2	800	4,600 D	µg/Kg
	DIBENZO(A,H)ANTHRACENE								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	68 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	180 J	µg/Kg
	DIBENZOFURAN								
		SWMU318-GW06-01	Site Sample	Water	Low	1	10	73	µg/L
		SWMU318-GW14-01	Site Sample	Water	Low	1	10	26	µg/L
		SWMU318-GW15	Site Sample	Water	Low	1	10	68	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	10	µg/L
		SWMU318-MW02D	Site Sample	Water	Low	1	10	9 J	µg/L

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Semivolatiles									
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	150 J	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	14 J	µg/Kg
	3,3'-dichlorobenzidine								
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	87 J	µg/Kg
	2,4-dimethylphenol								
		SWMU318-GW06-01	Site Sample	Water	Low	40	400	990 D	µg/L
		SWMU318-GW07-01DLDL	Site Sample Dilution	Water	Low	2	10	12 J	µg/L
		SWMU318-GW14-01	Site Sample	Water	Low	1	10	13	µg/L
		SWMU318-GW15	Site Sample	Water	Low	1	10	21	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	67	µg/L
		SWMU318-MW02D	Site Sample	Water	Low	1	10	74	µg/L
	FLUORANTHENE								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	650	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	120 J	µg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	330	67 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	3,000	µg/Kg
	FLUORENE								
		SWMU318-GW06-01	Site Sample	Water	Low	1	10	46	µg/L
		SWMU318-GW14-01	Site Sample	Water	Low	1	10	16	µg/L
		SWMU318-GW15	Site Sample	Water	Low	1	10	49	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	9	µg/L
		SWMU318-MW02D	Site Sample	Water	Low	1	10	8 J	µg/L
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	160 J	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	17 J	µg/Kg
	INDENO(1,2,3-CD)PYRENE								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	210 J	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	28 J	µg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	330	32 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	440	µg/Kg
	2-methylnaphthalene								
		SWMU318-GW04	Site Sample	Water	Low	1	10	8 J	µg/L
		SWMU318-GW06-01	Site Sample	Water	Low	40	400	480 D	µg/L

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Semivolatiles									
		SWMU318-GW14-01	Site Sample	Water	Low	25	120	130 D	µg/L
		SWMU318-GW15	Site Sample	Water	Low	5	50	130 D	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	10	62	µg/L
		SWMU318-MW02D	Site Sample	Water	Low	5	50	97 D	µg/L
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	180 J	µg/Kg
	2-methylphenol								
		SWMU318-GW06-01	Site Sample	Water	Low	40	400	410 D	µg/L
	4-methylphenol								
		SWMU318-GW06-01	Site Sample	Water	Low	40	400	250 DJ	µg/L
	NAPHTHALENE								
		SWMU318-GW01	Site Sample	Water	Low	1	10	9 J	µg/L
		SWMU318-GW04	Site Sample	Water	Low	1	10	12	µg/L
		SWMU318-GW06-01	Site Sample	Water	Low	40	400	2,100 D	µg/L
		SWMU318-GW07-01DLDL	Site Sample Dilution	Water	Low	2	10	98	µg/L
		SWMU318-GW12-01	Site Sample	Water	Low	1	10	26	µg/L
		SWMU318-GW14-01	Site Sample	Water	Low	25	120	800 D	µg/L
		SWMU318-GW15	Site Sample	Water	Low	5	50	340 D	µg/L
		SWMU318-MW02	Site Sample	Water	Low	4	40	260 D	µg/L
		SWMU318-MW02D	Site Sample	Water	Low	5	50	360 D	µg/L
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	2,900	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	45 J	µg/Kg
		SWMU318-SB02-01	Site Sample	Soil	Low	1	330	140 J	µg/Kg
		SWMU318-SB02-01D	Site Sample	Soil	Low	1	330	220 J	µg/Kg
		SWMU318-SB02-04	Site Sample	Soil	Low	1	330	23 J	µg/Kg
		SWMU318-SB03-01	Site Sample	Soil	Low	1	330	18 J	µg/Kg
		SWMU318-SB06-01	Site Sample	Soil	Low	1	330	310 J	µg/Kg
		SWMU318-SB06-01D	Site Sample	Soil	Low	1	330	280 J	µg/Kg
		SWMU318-SB06-02	Site Sample	Soil	Low	1	330	89 J	µg/Kg
		SWMU318-SB08-00DLDL	Site Sample Dilution	Soil	Low	25	330	32,000	µg/Kg
		SWMU318-SB11-03	Site Sample	Soil	Low	1	330	580	µg/Kg
	PHENANTHRENE								
		SWMU318-GW14-01	Site Sample	Water	Low	1	10	0.6 J	µg/L

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Semivolatiles									
		SWMU318-GW15	Site Sample	Water	Low	1	10	11	µg/L
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	120 J	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	18 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	170 J	µg/Kg
	PHENOL								
		SWMU318-GW14-01	Site Sample	Water	Low	1	10	0.5 J	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	10	38	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE								
		SWMU318-GW14-01	Site Sample	Water	Low	1	10	2 J	µg/L
	PYRENE								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	330	830	µg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	330	120 J	µg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	330	68 J	µg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	330	2,200	µg/Kg
Metals									
	ARSENIC								
		SWMU318-MW01	Site Sample	Water	Low	1	10	3.1 B	µg/L
		SWMU318-SB01-00	Site Sample	Soil	Low	1	1.6	0.71 B	mg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	2.2	1.4 B	mg/Kg
		SWMU318-SB02-01	Site Sample	Soil	Low	1	1.7	1 B	mg/Kg
		SWMU318-SB02-01D	Site Sample	Soil	Low	1	1.8	1.8	mg/Kg
		SWMU318-SB02-04	Site Sample	Soil	Low	1	2	10.2	mg/Kg
		SWMU318-SB03-01	Site Sample	Soil	Low	1	1.9	3.1	mg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	2.6	51	mg/Kg
		SWMU318-SB04-04	Site Sample	Soil	Low	1	2.1	1.6 B	mg/Kg
		SWMU318-SB05-02	Site Sample	Soil	Low	1	1.8	4.4	mg/Kg
		SWMU318-SB05-02D	Site Sample	Soil	Low	1	1.5	5.4	mg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	1.7	1.9	mg/Kg
		SWMU318-SB06-01	Site Sample	Soil	Low	1	2.2	1 B	mg/Kg
		SWMU318-SB06-01D	Site Sample	Soil	Low	1	1.8	1.6 B	mg/Kg
		SWMU318-SB06-02	Site Sample	Soil	Low	1	2	1.1 B	mg/Kg
		SWMU318-SB07-00	Site Sample	Soil	Low	1	1.2	0.48 B	mg/Kg

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Metals									
		SWMU318-SB07-02	Site Sample	Soil	Low	1	1.5	1.6	mg/Kg
		SWMU318-SB08-00	Site Sample	Soil	Low	1	1.2	1.1 B	mg/Kg
		SWMU318-SB08-04	Site Sample	Soil	Low	1	1.4	4.5	mg/Kg
		SWMU318-SB09-00	Site Sample	Soil	Low	1	1.9	2.6	mg/Kg
		SWMU318-SB10-00	Site Sample	Soil	Low	1	1.7	0.82 B	mg/Kg
		SWMU318-SB10-03	Site Sample	Soil	Low	1	2.3	5	mg/Kg
		SWMU318-SB11-01	Site Sample	Soil	Low	1	2	2 B	mg/Kg
		SWMU318-SB11-03	Site Sample	Soil	Low	1	2.2	1.4 B	mg/Kg
		SWMU318-SB12-01	Site Sample	Soil	Low	1	1.9	1.9 B	mg/Kg
		SWMU318-SB12-04	Site Sample	Soil	Low	1	1.8	10.6	mg/Kg
	BARIUM								
		SWMU318-MW01	Site Sample	Water	Low	1	200	26 B	µg/L
		SWMU318-MW02	Site Sample	Water	Low	1	200	7.1 B	µg/L
		SWMU318-MW03	Site Sample	Water	Low	1	200	25.1 B	µg/L
		SWMU318-SB01-00	Site Sample	Soil	Low	1	32	10.3 B	mg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	43	15.9 B	mg/Kg
		SWMU318-SB02-01	Site Sample	Soil	Low	1	33	12.8 B	mg/Kg
		SWMU318-SB02-01D	Site Sample	Soil	Low	1	35	19.3 B	mg/Kg
		SWMU318-SB02-04	Site Sample	Soil	Low	1	41	9.4 B	mg/Kg
		SWMU318-SB03-00	Site Sample	Soil	Low	1	0.85	4.6 J	mg/Kg
		SWMU318-SB03-01	Site Sample	Soil	Low	1	38	15.3 B	mg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	52	21.4 B	mg/Kg
		SWMU318-SB04-04	Site Sample	Soil	Low	1	43	4.8 B	mg/Kg
		SWMU318-SB05-02	Site Sample	Soil	Low	1	36	18.8 B	mg/Kg
		SWMU318-SB05-02D	Site Sample	Soil	Low	1	30	22.8 B	mg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	35	16.2 B	mg/Kg
		SWMU318-SB06-01	Site Sample	Soil	Low	1	44	13.6 B	mg/Kg
		SWMU318-SB06-01D	Site Sample	Soil	Low	1	35	14.9 B	mg/Kg
		SWMU318-SB06-02	Site Sample	Soil	Low	1	39	23.5 B	mg/Kg
		SWMU318-SB07-00	Site Sample	Soil	Low	1	0.75	5.9	mg/Kg
		SWMU318-SB07-02	Site Sample	Soil	Low	1	0.92	19.1	mg/Kg
		SWMU318-SB08-00	Site Sample	Soil	Low	1	0.72	22.1	mg/Kg
		SWMU318-SB08-04	Site Sample	Soil	Low	1	0.89	11.5	mg/Kg

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Metals									
		SWMU318-SB09-00	Site Sample	Soil	Low	1	38	20.3 B	mg/Kg
		SWMU318-SB09-02	Site Sample	Soil	Low	1	41	6.2 B	mg/Kg
		SWMU318-SB10-00	Site Sample	Soil	Low	1	35	11.7 B	mg/Kg
		SWMU318-SB10-03	Site Sample	Soil	Low	1	46	21.7 B	mg/Kg
		SWMU318-SB11-01	Site Sample	Soil	Low	1	40	59.8	mg/Kg
		SWMU318-SB11-03	Site Sample	Soil	Low	1	41	9.1 B	mg/Kg
		SWMU318-SB12-01	Site Sample	Soil	Low	1	38	9.2 B	mg/Kg
		SWMU318-SB12-04	Site Sample	Soil	Low	1	36	19.4 B	mg/Kg
	CADMIUM								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	0.81	0.43 B	mg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	1.1	0.14 B	mg/Kg
		SWMU318-SB02-01	Site Sample	Soil	Low	1	0.83	0.09 B	mg/Kg
		SWMU318-SB02-01D	Site Sample	Soil	Low	1	0.89	0.11 B	mg/Kg
		SWMU318-SB05-02	Site Sample	Soil	Low	1	0.91	0.24 B	mg/Kg
		SWMU318-SB05-02D	Site Sample	Soil	Low	1	0.76	0.15 B	mg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	0.87	0.37 B	mg/Kg
		SWMU318-SB06-01	Site Sample	Soil	Low	1	1.1	0.07 B	mg/Kg
		SWMU318-SB06-01D	Site Sample	Soil	Low	1	0.88	0.08 B	mg/Kg
		SWMU318-SB08-00	Site Sample	Soil	Low	1	1.4	1.3 B	mg/Kg
		SWMU318-SB09-00	Site Sample	Soil	Low	1	0.96	0.55 B	mg/Kg
		SWMU318-SB12-04	Site Sample	Soil	Low	1	0.89	0.62 B	mg/Kg
	CHROMIUM								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	1.6	6.1 J	mg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	2.2	14.6 J	mg/Kg
		SWMU318-SB02-01	Site Sample	Soil	Low	1	1.7	5 J	mg/Kg
		SWMU318-SB02-01D	Site Sample	Soil	Low	1	1.8	8.4 J	mg/Kg
		SWMU318-SB02-04	Site Sample	Soil	Low	1	2	11.1 J	mg/Kg
		SWMU318-SB03-00	Site Sample	Soil	Low	1	2.5	2.8 J	mg/Kg
		SWMU318-SB03-01	Site Sample	Soil	Low	1	1.9	10.2 J	mg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	2.6	34 J	mg/Kg
		SWMU318-SB04-04	Site Sample	Soil	Low	1	2.1	6.7 J	mg/Kg
		SWMU318-SB05-02	Site Sample	Soil	Low	1	1.8	13.2	mg/Kg

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Metals									
		SWMU318-SB05-02D	Site Sample	Soil	Low	1	1.5	18.6	mg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	1.7	8.1	mg/Kg
		SWMU318-SB06-01	Site Sample	Soil	Low	1	2.2	5.1 J	mg/Kg
		SWMU318-SB06-01D	Site Sample	Soil	Low	1	1.8	7.2 J	mg/Kg
		SWMU318-SB06-02	Site Sample	Soil	Low	1	2	14 J	mg/Kg
		SWMU318-SB07-00	Site Sample	Soil	Low	1	2.2	3.8	mg/Kg
		SWMU318-SB07-02	Site Sample	Soil	Low	1	2.8	8	mg/Kg
		SWMU318-SB08-00	Site Sample	Soil	Low	1	2.2	10.7	mg/Kg
		SWMU318-SB08-04	Site Sample	Soil	Low	1	2.7	15.5	mg/Kg
		SWMU318-SB09-00	Site Sample	Soil	Low	1	1.9	10.3	mg/Kg
		SWMU318-SB09-02	Site Sample	Soil	Low	1	2.1	7	mg/Kg
		SWMU318-SB10-00	Site Sample	Soil	Low	1	1.7	3.7	mg/Kg
		SWMU318-SB10-03	Site Sample	Soil	Low	1	2.3	29.8	mg/Kg
		SWMU318-SB11-01	Site Sample	Soil	Low	1	2	6.2	mg/Kg
		SWMU318-SB11-03	Site Sample	Soil	Low	1	2.2	3	mg/Kg
		SWMU318-SB12-01	Site Sample	Soil	Low	1	1.9	6.4	mg/Kg
		SWMU318-SB12-04	Site Sample	Soil	Low	1	1.8	21.2	mg/Kg
	LEAD								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	0.49	19.8	mg/Kg
		SWMU318-SB01-04	Site Sample	Soil	Low	1	0.65	11	mg/Kg
		SWMU318-SB02-01	Site Sample	Soil	Low	1	0.5	7.4	mg/Kg
		SWMU318-SB02-01D	Site Sample	Soil	Low	1	0.53	11	mg/Kg
		SWMU318-SB02-04	Site Sample	Soil	Low	1	0.61	7.5	mg/Kg
		SWMU318-SB03-00	Site Sample	Soil	Low	1	0.85	2 J	mg/Kg
		SWMU318-SB03-01	Site Sample	Soil	Low	1	0.57	8.6	mg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	0.78	14.8	mg/Kg
		SWMU318-SB04-04	Site Sample	Soil	Low	1	0.64	6.7	mg/Kg
		SWMU318-SB05-02	Site Sample	Soil	Low	1	0.54	45.9 J	mg/Kg
		SWMU318-SB05-02D	Site Sample	Soil	Low	1	0.46	26.1 J	mg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	0.52	12.2 J	mg/Kg
		SWMU318-SB06-01	Site Sample	Soil	Low	1	0.67	10.1	mg/Kg
		SWMU318-SB06-01D	Site Sample	Soil	Low	1	0.53	9.5	mg/Kg
		SWMU318-SB06-02	Site Sample	Soil	Low	1	0.59	15.8	mg/Kg

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Metals									
		SWMU318-SB07-00	Site Sample	Soil	Low	1	0.75	2.8	mg/Kg
		SWMU318-SB07-02	Site Sample	Soil	Low	1	0.92	10.1	mg/Kg
		SWMU318-SB08-00	Site Sample	Soil	Low	1	0.72	2.2	mg/Kg
		SWMU318-SB08-04	Site Sample	Soil	Low	1	0.89	7.8	mg/Kg
		SWMU318-SB09-00	Site Sample	Soil	Low	1	0.58	21.7 J	mg/Kg
		SWMU318-SB09-02	Site Sample	Soil	Low	1	0.62	3.8 J	mg/Kg
		SWMU318-SB10-00	Site Sample	Soil	Low	1	0.52	8.4 J	mg/Kg
		SWMU318-SB10-03	Site Sample	Soil	Low	1	0.69	14.4 J	mg/Kg
		SWMU318-SB11-01	Site Sample	Soil	Low	1	0.6	13.7 J	mg/Kg
		SWMU318-SB11-03	Site Sample	Soil	Low	1	0.65	5.3 J	mg/Kg
		SWMU318-SB12-01	Site Sample	Soil	Low	1	0.57	3.5 J	mg/Kg
		SWMU318-SB12-04	Site Sample	Soil	Low	1	0.53	15.3	mg/Kg
	MERCURY								
		SWMU318-SB01-04	Site Sample	Soil	Low	1	0.11	0.07 B	mg/Kg
		SWMU318-SB02-01	Site Sample	Soil	Low	1	0.1	0.04 B	mg/Kg
		SWMU318-SB02-01D	Site Sample	Soil	Low	1	0.11	0.05 B	mg/Kg
		SWMU318-SB02-04	Site Sample	Soil	Low	1	0.1	0.03 B	mg/Kg
		SWMU318-SB03-01	Site Sample	Soil	Low	1	0.11	0.06 B	mg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	0.12	0.07 B	mg/Kg
		SWMU318-SB04-04	Site Sample	Soil	Low	1	0.12	0.03 B	mg/Kg
		SWMU318-SB05-02	Site Sample	Soil	Low	1	0.12	0.04 B	mg/Kg
		SWMU318-SB05-02D	Site Sample	Soil	Low	1	0.12	0.08 B	mg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	0.12	0.04 B	mg/Kg
		SWMU318-SB06-01	Site Sample	Soil	Low	1	0.11	0.05 B	mg/Kg
		SWMU318-SB06-01D	Site Sample	Soil	Low	1	0.1	0.05 B	mg/Kg
		SWMU318-SB06-02	Site Sample	Soil	Low	1	0.099	0.11	mg/Kg
		SWMU318-SB07-00	Site Sample	Soil	Low	1	0.11	0.01 B	mg/Kg
		SWMU318-SB07-02	Site Sample	Soil	Low	1	0.11	0.05 B	mg/Kg
		SWMU318-SB08-00	Site Sample	Soil	Low	1	0.099	0.01 B	mg/Kg
		SWMU318-SB08-04	Site Sample	Soil	Low	1	0.14	0.03 B	mg/Kg
		SWMU318-SB09-00	Site Sample	Soil	Low	1	0.11	0.03 B	mg/Kg
		SWMU318-SB10-00	Site Sample	Soil	Low	1	0.1	0.02 B	mg/Kg

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Metals									
		SWMU318-SB10-03	Site Sample	Soil	Low	1	0.13	0.06 B	mg/Kg
		SWMU318-SB11-01	Site Sample	Soil	Low	1	0.11	0.05 B	mg/Kg
		SWMU318-SB11-03	Site Sample	Soil	Low	1	0.13	0.04 B	mg/Kg
		SWMU318-SB12-01	Site Sample	Soil	Low	1	0.1	0.03 B	mg/Kg
		SWMU318-SB12-04	Site Sample	Soil	Low	1	0.13	0.06 B	mg/Kg
	SELENIUM								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	0.81	0.42 J	mg/Kg
		SWMU318-SB02-01	Site Sample	Soil	Low	1	0.83	0.81 J	mg/Kg
		SWMU318-SB02-01D	Site Sample	Soil	Low	1	0.89	0.66 J	mg/Kg
		SWMU318-SB03-01	Site Sample	Soil	Low	1	0.95	0.86 J	mg/Kg
		SWMU318-SB04-02	Site Sample	Soil	Low	1	1.3	0.89 J	mg/Kg
		SWMU318-SB04-04	Site Sample	Soil	Low	1	1.1	0.77 J	mg/Kg
		SWMU318-SB05-02D	Site Sample	Soil	Low	1	0.76	0.5 B	mg/Kg
		SWMU318-SB05-03	Site Sample	Soil	Low	1	0.87	0.62 B	mg/Kg
		SWMU318-SB06-01	Site Sample	Soil	Low	1	1.1	1 J	mg/Kg
		SWMU318-SB06-01D	Site Sample	Soil	Low	1	0.88	0.65 J	mg/Kg
		SWMU318-SB06-02	Site Sample	Soil	Low	1	0.99	0.6 J	mg/Kg
		SWMU318-SB07-00	Site Sample	Soil	Low	1	1.5	0.38 B	mg/Kg
		SWMU318-SB07-02	Site Sample	Soil	Low	1	1.8	0.64 B	mg/Kg
		SWMU318-SB08-04	Site Sample	Soil	Low	1	1.8	0.48 B	mg/Kg
		SWMU318-SB09-00	Site Sample	Soil	Low	1	0.96	0.69 B	mg/Kg
		SWMU318-SB11-01	Site Sample	Soil	Low	1	0.99	1.1	mg/Kg
		SWMU318-SB11-03	Site Sample	Soil	Low	1	1.1	0.68 B	mg/Kg
		SWMU318-SB12-01	Site Sample	Soil	Low	1	0.95	0.67 B	mg/Kg
		SWMU318-SB12-04	Site Sample	Soil	Low	1	0.89	1	mg/Kg
	SILVER								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	1.6	4.6 J	mg/Kg
Conventionals									
	TOTAL SOLIDS								
		SWMU318-SB01-00	Site Sample	Soil	Low	1	-	85	%
		SWMU318-SB01-04	Site Sample	Soil	Low	1	-	74	%
		SWMU318-SB02-00	Site Sample	Soil	Low	1	-	86	%

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW** SDG ID: **2004-B**

Fraction	Analyte	Client Sample	Sample Type	Matrix	Level	Dilution Factor	RL	Validated Result	Units
Conventionals									
		SWMU318-SB02-01	Site Sample	Soil	Low	1	-	90	%
		SWMU318-SB02-01D	Site Sample	Soil	Low	1	-	85	%
		SWMU318-SB02-04	Site Sample	Soil	Low	1	-	76	%
		SWMU318-SB03-00	Site Sample	Soil	Low	1	-	82	%
		SWMU318-SB03-01	Site Sample	Soil	Low	1	-	86	%
		SWMU318-SB04-00	Site Sample	Soil	Low	1	-	83	%
		SWMU318-SB04-02	Site Sample	Soil	Low	1	-	67	%
		SWMU318-SB04-04	Site Sample	Soil	Low	1	-	80	%
		SWMU318-SB05-02	Site Sample	Soil	Low	1	-	77	%
		SWMU318-SB05-02D	Site Sample	Soil	Low	1	-	82	%
		SWMU318-SB05-03	Site Sample	Soil	Low	1	-	82	%
		SWMU318-SB06-00	Site Sample	Soil	Low	1	-	82	%
		SWMU318-SB06-01	Site Sample	Soil	Low	1	-	80	%
		SWMU318-SB06-01D	Site Sample	Soil	Low	1	-	80	%
		SWMU318-SB06-02	Site Sample	Soil	Low	1	-	77	%
		SWMU318-SB07-00	Site Sample	Soil	Low	1	-	83	%
		SWMU318-SB07-02	Site Sample	Soil	Low	1	-	78	%
		SWMU318-SB08-00	Site Sample	Soil	Low	1	-	92	%
		SWMU318-SB08-04	Site Sample	Soil	Low	1	-	73	%
		SWMU318-SB09-00	Site Sample	Soil	Low	1	-	85	%
		SWMU318-SB09-02	Site Sample	Soil	Low	1	-	84	%
		SWMU318-SB10-00	Site Sample	Soil	Low	1	-	82	%
		SWMU318-SB10-03	Site Sample	Soil	Low	1	-	71	%
		SWMU318-SB11-01	Site Sample	Soil	Low	1	-	86	%
		SWMU318-SB11-03	Site Sample	Soil	Low	1	-	77	%
		SWMU318-SB12-01	Site Sample	Soil	Low	1	-	87	%
		SWMU318-SB12-04	Site Sample	Soil	Low	1	-	77	%

Qualifiers:

J - Estimated

B - (Organics) Found in the associated method blank

D - Reported from a dilution

E - Exceeds calibration range

P - (Pesticides) Difference in column concentrations > 25%

B - (Inorganics) Lab qualifier - analyte detected between the instrument detection limit (IDL) and the RL

VOLATILE

Marine Corp Base Camp Lejeune
AS Database
Site: SWMU 318

DATA VALIDATION REPORT

SDG: 2004-B

Prepared for:

CH2M HILL
Herndon , VA

Integrate Project Number: 10086

May, 2004

Integrate Data Validation Reporting Method

The purpose of this section is to give the data user an understanding of the ideas and concepts associated with data validation in general and with the Integrate, Inc.™ (Integrate) method of reporting validated data.

Analyte Level Validation Issues

Integrate has developed a method for reporting validated data which utilizes a presentation of laboratory data issues and validation issues. This technique is based on the concept that issues encountered in the validation of laboratory data affect individual analytes of a sample. For instance, determining that a detected analyte in a sample was the result of laboratory contamination will cause only that analyte to be qualified.

Integrate Codes: Standardizing the Description of Analytical Defects

Integrate has standardized the data validation process by developing a database of codes employed by our analysts to describe the various analytical defects that may occur with an analysis. Each code is associated with written text describing the problem and the qualification that may be applied. For instance, the code that would be applied to an analyte that was determined to be a result of laboratory contamination would be BC (Blank Contamination). A complete listing of the analyte qualification parameters and their respective codes are presented below in *Analyte Qualification Codes*.

Analyte Qualification Codes

- CO Comment
- HT Holding Time
- IC Initial Calibration
- CC Continuing Calibration
- BC Blank Contamination
- MS Matrix Spike Effects
- TC Target Compound Identification
- CQ Compound Quantitation
- TI Tentatively Identified Compound
- SD System Monitoring Compound
- IS Internal Standard
- TU GC/MS Tune Criteria

- AS Analytical Sequence

Volatile Section Reporting Format

The Volatile Section of this data validation report is divided into 1) a text-formatted report which describes the contents of the laboratory data package and 2) a number of tabular reports which allow the data user to readily obtain information about the results of the data validation. Below is a description of the type of information contained in these tabular reports.

1) *Narrative of the Sample Delivery Group (SDG):* This section provides general information that pertains to the data package, such as the date of receipt, the number and type of samples, the laboratory performing the analysis, the instrumentation utilized to perform the analysis, the method of analysis, and the number and type of quality control parameters reported by the laboratory. Additionally, any other pertinent issues dealing with the laboratory or the data package may be noted in this section.

2) ***Table V 1*** *Summary of Volatile Data Validation Issues*: This table represents a bulleted summary of all volatile samples that were validated for analyte level defects and provides a quick view of any issues that were associated with this sample delivery group. A bullet represents the assignment of a comment and/or qualifier by the data validator for a specific sample. The nature of a qualification can be found in ***Table V 2*** *Volatile Analyte Qualification Summary*.

3) ***Table V 2*** *Volatile Analyte Qualification Summary*: This tabular report displays all of the analyte-level data validation issues checked (*Analyte Qualification Codes*). The table indicates the client sample name, the analyte that has been qualified, the qualification code, the lab result and its qualifier and units, the validated result and the validation qualifier and units. Explanations of the actions taken by the validator are explained in ***Table V 3*** *Volatile Analyte Qualification Comments.*

4) ***Table V 3*** *Volatile Analyte Qualification Comments:* This report contains an explanation of each problem and any qualification which was documented in ***Table V 2*** *Volatile Analyte Qualification Summary*.

5) ***Table V 4*** *Validated Volatile Results*: This report displays all the analytical and validated information in a one-sample per-page view. It includes the volatile analyte list, analytical extraction level, dilution factor, method quantitation limits per analyte, the results for each analyte and the units of measure for each analyte.

Narrative of Sample Delivery Group (SDG): 2004-B

On May 25 2004 Integrate, Inc. received one data package containing the results for sixteen site samples which were analyzed by Katahdin Analytical Services, Inc. for volatile organic analyses. The laboratory utilized a gas chromatograph/mass spectrometer (GC/MS) fitted with a capillary column in accordance with USEPA CLP Method OLMO 4.2. The following quality control parameters were reported in the data package:

Laboratory QC

- 3 initial calibration(s)
- 4 continuing calibration(s)
- 3 method blank(s)
- 1 matrix spike(s)
- 1 matrix spike duplicate(s)
- 0 laboratory control sample(s)

Note:

1. The ice chests were received at a temperature of <2 degrees Celcius. The samples were not frozen nor adversely affected. No further qualification was deemed necessary.
2. All field quality control samples are reported in a QA database data validation report.
3. The % RSD for 2-Butanone is 57.7% and the %RSD for Bromomethane is 39.8% in the initial calibration analyzed on instrument F on April 12, 2004.
4. The % RSD for Bromomethane is 35.5% in the initial calibration analyzed on instrument S on March 25, 2004.
5. The % RSD for Acetone is 33.8% in the initial calibration analyzed on instrument F on March 19, 2004.
6. Two chains of custody for WUO691 were not signed by the laboratory upon sample receipt.

Lab: **KASW / KASW**

SDG ID: **2004-B**

	Analyte Qualification												
Client Sample	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS
SWMU318-GW01						•	•						
SWMU318-GW04-01						•							
SWMU318-GW07						•							
SWMU318-GW10-01			•			•			•				
SWMU318-GW10-01DL			•										
SWMU318-GW13RE					•	•							
SWMU318-MW01						•	•	•					
SWMU318-MW02			•			•		•					
SWMU318-MW02DL			•										
SWMU318-MW03			•			•		•	•				
SWMU318-MW03D			•			•		•					
SWMU318-MW03DDL			•										
SWMU318-MW03DL			•										
SWMU318-SB02-00			•									•	•
SWMU318-SB02-00DL						•	•	•					
SWMU318-SB04-00RE						•	•	•					
SWMU318-SB06-00DRE						•	•	•					
SWMU318-SB06-00RE						•	•	•					
SWMU318-SB09-00			•									•	
SWMU318-SB09-00RE						•	•	•				•	

All samples were validated. A bullet (•) denotes sample qualification.

Analyte Qualification Codes:

TU - GC/MS tune time
AS - Analytical sequence
CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
BC - Blank contamination
MS - Matrix spike effects
TC - TCL compound ID
CQ - Compound/parameter quantitation
TI - Tentatively identified compound
SD - Surrogate deficiencies
IS - Internal standard

V2 - Volatile Analyte Qualification Summary

As prepared by Integrate, Inc.

Marine Corp Base Camp Lejeu

2004-B

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
SWMU318-GW01																		
	ACETONE	-	-	-	-	-	9	9	-	-	-	-	-	-	2 J	µg/L	10 UJ	µg/L
	2-butanone	-	-	-	-	-	9	-	-	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
SWMU318-GW04-01																		
	ACETONE	-	-	-	-	-	9	-	-	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	2-butanone	-	-	-	-	-	9	-	-	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
SWMU318-GW07																		
	ACETONE	-	-	-	-	-	9	-	-	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	2-butanone	-	-	-	-	-	9	-	-	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
SWMU318-GW10-01																		
	DICHLORODIFLUOROMETHANE	-	-	-	-	-	-	-	-	2	-	-	-	-	1 J	µg/L	10 U	µg/L
	ACETONE	-	-	-	-	-	9	-	-	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	CIS-1,2-DICHLOROETHENE	-	-	5	-	-	-	-	-	-	-	-	-	-	690 E	µg/L	670 D	µg/L
	1,2-Dichloroethylene (total)	-	-	5	-	-	-	-	-	-	-	-	-	-	700 E	µg/L	670 D	µg/L
	2-butanone	-	-	-	-	-	9	-	-	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	TRICHLOROETHENE	-	-	5	-	-	-	-	-	-	-	-	-	-	1,200 E	µg/L	1,200 D	µg/L
SWMU318-GW10-01DL																		
	DICHLORODIFLUOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	CHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	VINYL CHLORIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	140	µg/L	140 R	µg/L
	BROMOMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	CHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	TRICHLOROFLUOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,1-dichloroethene	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	CARBON DISULFIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L

Analyte Qualification Codes:

TU - GC/MS Tune Time
AS - Analytical Sequence
CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
BC - Blank contamination
MS - Matrix spike effects
TC - TCL compound ID
CQ - Compound/parameter quantitation
TI - Tentatively identified compound
SD - Surrogate deficiencies
IS - Internal standard

Analyte Qualifiers:

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
E - (Lab qualifier) Exceeds calibration range
S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	150		µg/L	150	R	µg/L
	METHYLENE CHLORIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	30	JB	µg/L	30	R	µg/L
	ACETONE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TRANS-1,2-DICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	METHYL TERT-BUTYL ETHER	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,1-dichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CIS-1,2-DICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	670		µg/L	670	R	µg/L
	1,2-Dichloroethylene (total)	-	-	3	-	-	-	-	-	-	-	-	-	-	670		µg/L	670	R	µg/L
	CHLOROFORM	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CARBON TETRACHLORIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,1,1-trichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	2-butanone	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	BENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CYCLOHEXANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,2-dichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TRICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	1,200		µg/L	1,200	R	µg/L
	1,2-dichloropropane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	BROMODICHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CIS-1,3-DICHLOROPROPENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TOLUENE	-	-	3	-	-	-	-	-	-	-	-	-	-	31	J	µg/L	31	R	µg/L
	4-methyl-2-pentanone	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TETRACHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TRANS-1,3-DICHLOROPROPENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,1,2-trichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	DIBROMOCHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	Ethylene Dibromide	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L

Analyte Qualification Codes:

TU - GC/MS Tune Time
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CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
BC - Blank contamination
MS - Matrix spike effects
TC - TCL compound ID
CQ - Compound/parameter quantitation
TI - Tentatively identified compound
SD - Surrogate deficiencies
IS - Internal standard

Analyte Qualifiers:

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
E - (Lab qualifier) Exceeds calibration range
S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	2-hexanone	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	CHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	ETHYLBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	XYLENES (TOTAL)	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	M-,P-XYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	O-XYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	STYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	BROMOFORM	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	ISOPROPYLBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,1,2,2-tetrachloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,3-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,4-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,2-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,2-dibromo-3-chloropropane	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,2,4-trichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	METHYL ACETATE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	METHYLCYCLOHEXANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
SWMU318-GW13RE																		
	1,2-dibromo-3-chloropropane	-	-	-	-	10	6	-	-	-	-	-	-	-	10 U	µg/L	10 R	µg/L
SWMU318-MW01																		
	DICHLORODIFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	VINYL CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BROMOMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TRICHLOROFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	1,1-dichloroethene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CARBON DISULFIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	1 J	µg/L	1 J	µg/L
	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	METHYLENE CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ACETONE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	TRANS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	METHYL TERT-BUTYL ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CIS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	1 J	µg/L	1 J	µg/L
	1,2-Dichloroethylene (total)	-	-	-	-	-	-	-	3	-	-	-	-	-	1 J	µg/L	1 J	µg/L
	CHLOROFORM	-	-	-	-	-	-	14	3	-	-	-	-	-	2 J	µg/L	10 U	µg/L
	CARBON TETRACHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1,1-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	2-butanone	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	BENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TRICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dichloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BROMODICHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CIS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TOLUENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	4-methyl-2-pentanone	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TETRACHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TRANS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1,2-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	DIBROMOCHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	Ethylene Dibromide	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	2-hexanone	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	CHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ETHYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	XYLENES (TOTAL)	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	M-,P-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	O-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	STYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BROMOFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ISOPROPYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1,2,2-tetrachloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,3-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,4-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dibromo-3-chloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2,4-trichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	METHYL ACETATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	METHYLCYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
SWMU318-MW02																		
	DICHLORODIFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	VINYL CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	13	µg/L	13	µg/L
	BROMOMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TRICHLOROFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1-dichloroethene	-	-	-	-	-	-	-	3	-	-	-	-	-	2 J	µg/L	2 J	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	CARBON DISULFIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	METHYLENE CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ACETONE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	TRANS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	2 J	µg/L	2 J	µg/L
	METHYL TERT-BUTYL ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CIS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	120	µg/L	120	µg/L
	1,2-Dichloroethylene (total)	-	-	-	-	-	-	-	3	-	-	-	-	-	120	µg/L	120	µg/L
	CHLOROFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CARBON TETRACHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1,1-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	2-butanone	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	BENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	38	µg/L	38	µg/L
	CYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TRICHLOROETHENE	-	-	5	-	-	-	-	3	-	-	-	-	-	240 E	µg/L	240 D	µg/L
	1,2-dichloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BROMODICHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CIS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TOLUENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	µg/L	10	µg/L
	4-methyl-2-pentanone	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TETRACHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TRANS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1,2-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	DIBROMOCHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L

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SDG ID: **2004-B**

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	Ethylene Dibromide	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	2-hexanone	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	CHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ETHYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	30	µg/L	30	µg/L
	XYLENES (TOTAL)	-	-	-	-	-	-	-	3	-	-	-	-	-	27	µg/L	27	µg/L
	M-,P-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	19	µg/L	19	µg/L
	O-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	8 J	µg/L	8 J	µg/L
	STYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BROMOFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ISOPROPYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	2 J	µg/L	2 J	µg/L
	1,1,2,2-tetrachloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,3-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,4-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dibromo-3-chloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2,4-trichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	METHYL ACETATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	METHYLCYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
SWMU318-MW02DL																		
	DICHLORODIFLUOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	CHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	VINYL CHLORIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	6 J	µg/L	6 R	µg/L
	BROMOMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	CHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	TRICHLOROFLUOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	1,1-dichloroethene	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	CARBON DISULFIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L

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SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	METHYLENE CHLORIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	22 BJ	µg/L	22 R	µg/L
	ACETONE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	TRANS-1,2-DICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	METHYL TERT-BUTYL ETHER	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	1,1-dichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	CIS-1,2-DICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	110	µg/L	110 R	µg/L
	1,2-Dichloroethylene (total)	-	-	3	-	-	-	-	-	-	-	-	-	-	110	µg/L	110 R	µg/L
	CHLOROFORM	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	CARBON TETRACHLORIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	1,1,1-trichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	2-butanone	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	BENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	33 J	µg/L	33 R	µg/L
	CYCLOHEXANE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	1,2-dichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	TRICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	240	µg/L	240 R	µg/L
	1,2-dichloropropane	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	BROMODICHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	CIS-1,3-DICHLOROPROPENE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	TOLUENE	-	-	3	-	-	-	-	-	-	-	-	-	-	9 J	µg/L	9 R	µg/L
	4-methyl-2-pentanone	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	TETRACHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	TRANS-1,3-DICHLOROPROPENE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	1,1,2-trichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	DIBROMOCHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	Ethylene Dibromide	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	2-hexanone	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	CHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	ETHYLBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	26 J	µg/L	26 R	µg/L
	XYLENES (TOTAL)	-	-	3	-	-	-	-	-	-	-	-	-	-	24 J	µg/L	24 R	µg/L
	M-,P-XYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	16 J	µg/L	16 R	µg/L
	O-XYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	7 J	µg/L	7 R	µg/L
	STYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	BROMOFORM	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	ISOPROPYLBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	1,1,2,2-tetrachloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	1,3-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	1,4-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	1,2-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	1,2-dibromo-3-chloropropane	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	1,2,4-trichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	METHYL ACETATE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
	METHYLCYCLOHEXANE	-	-	3	-	-	-	-	-	-	-	-	-	-	50 U	µg/L	50 R	µg/L
SWMU318-MW03																		
	DICHLORODIFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	VINYL CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	96	µg/L	96	µg/L
	BROMOMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TRICHLOROFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1-dichloroethene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CARBON DISULFIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	180	µg/L	180	µg/L
	METHYLENE CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ACETONE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	TRANS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	2 J	µg/L	2 J	µg/L
	METHYL TERT-BUTYL ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CIS-1,2-DICHLOROETHENE	-	-	5	-	-	-	-	3	-	-	-	-	-	640 E	µg/L	550 D	µg/L
	1,2-Dichloroethylene (total)	-	-	5	-	-	-	-	3	-	-	-	-	-	640 E	µg/L	550 D	µg/L
	CHLOROFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CARBON TETRACHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1,1-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	2-butanone	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	BENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	1 J	µg/L	1 J	µg/L
	CYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TRICHLOROETHENE	-	-	5	-	-	-	-	3	-	-	-	-	-	850 E	µg/L	960 D	µg/L
	1,2-dichloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BROMODICHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CIS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TOLUENE	-	-	-	-	-	-	-	3	-	-	-	-	-	28	µg/L	28	µg/L
	4-methyl-2-pentanone	-	-	-	-	-	-	-	3	2	-	-	-	-	1 J	µg/L	10 U	µg/L
	TETRACHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TRANS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1,2-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	DIBROMOCHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	Ethylene Dibromide	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L

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Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	2-hexanone	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	CHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ETHYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	3 J	µg/L	3 J	µg/L
	XYLENES (TOTAL)	-	-	-	-	-	-	-	3	-	-	-	-	-	7 J	µg/L	7 J	µg/L
	M-,P-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	2 J	µg/L	2 J	µg/L
	O-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	5 J	µg/L	5 J	µg/L
	STYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BROMOFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ISOPROPYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	1 J	µg/L	1 J	µg/L
	1,1,2,2-tetrachloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,3-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,4-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dibromo-3-chloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2,4-trichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	METHYL ACETATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	METHYLCYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	12	µg/L	12	µg/L
SWMU318-MW03D																		
	DICHLORODIFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	VINYL CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	88	µg/L	88	µg/L
	BROMOMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TRICHLOROFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1-dichloroethene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CARBON DISULFIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L

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	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	160	µg/L	160	µg/L
	METHYLENE CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ACETONE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	TRANS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	1 J	µg/L	1 J	µg/L
	METHYL TERT-BUTYL ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CIS-1,2-DICHLOROETHENE	-	-	5	-	-	-	-	3	-	-	-	-	-	560 E	µg/L	590 D	µg/L
	1,2-Dichloroethylene (total)	-	-	5	-	-	-	-	3	-	-	-	-	-	560 E	µg/L	590 D	µg/L
	CHLOROFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CARBON TETRACHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1,1-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	2-butanone	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	BENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TRICHLOROETHENE	-	-	5	-	-	-	-	3	-	-	-	-	-	860 E	µg/L	1,000 D	µg/L
	1,2-dichloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BROMODICHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CIS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TOLUENE	-	-	-	-	-	-	-	3	-	-	-	-	-	28	µg/L	28	µg/L
	4-methyl-2-pentanone	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TETRACHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	TRANS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1,2-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	DIBROMOCHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	Ethylene Dibromide	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L

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	CHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ETHYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	3 J	µg/L	3 J	µg/L
	XYLENES (TOTAL)	-	-	-	-	-	-	-	3	-	-	-	-	-	7 J	µg/L	7 J	µg/L
	M-,P-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	2 J	µg/L	2 J	µg/L
	O-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	5 J	µg/L	5 J	µg/L
	STYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BROMOFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ISOPROPYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,1,2,2-tetrachloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,3-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,4-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2-dibromo-3-chloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	1,2,4-trichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	METHYL ACETATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	METHYLCYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
SWMU318-MW03DDL																		
	DICHLORODIFLUOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	CHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	VINYL CHLORIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	91 J	µg/L	91 R	µg/L
	BROMOMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	CHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	TRICHLOROFLUOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,1-dichloroethene	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	CARBON DISULFIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	170		µg/L	170	R	µg/L
	METHYLENE CHLORIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	52	BJ	µg/L	52	R	µg/L
	ACETONE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TRANS-1,2-DICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	METHYL TERT-BUTYL ETHER	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,1-dichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CIS-1,2-DICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	590		µg/L	590	R	µg/L
	1,2-Dichloroethylene (total)	-	-	3	-	-	-	-	-	-	-	-	-	-	590		µg/L	590	R	µg/L
	CHLOROFORM	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CARBON TETRACHLORIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,1,1-trichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	2-butanone	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	BENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CYCLOHEXANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,2-dichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TRICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	1,000		µg/L	1,000	R	µg/L
	1,2-dichloropropane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	BROMODICHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CIS-1,3-DICHLOROPROPENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	U	µg/L
	TOLUENE	-	-	3	-	-	-	-	-	-	-	-	-	-	27	J	µg/L	27	R	µg/L
	4-methyl-2-pentanone	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TETRACHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TRANS-1,3-DICHLOROPROPENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,1,2-trichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	DIBROMOCHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	Ethylene Dibromide	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L

Analyte Qualification Codes:

TU - GC/MS Tune Time
AS - Analytical Sequence
CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
BC - Blank contamination
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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2-hexanone	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	ETHYLBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	XYLENES (TOTAL)	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	M-,P-XYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	O-XYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	STYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	BROMOFORM	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	ISOPROPYLBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,1,2,2-tetrachloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,3-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,4-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,2-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,2-dibromo-3-chloropropane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,2,4-trichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	METHYL ACETATE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	METHYLCYCLOHEXANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
SWMU318-MW03DL																				
	DICHLORODIFLUOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	VINYL CHLORIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	85	J	µg/L	85	R	µg/L
	BROMOMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TRICHLOROFLUOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,1-dichloroethene	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CARBON DISULFIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L

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Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	160		µg/L	160	R	µg/L
	METHYLENE CHLORIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	58	BJ	µg/L	58	R	µg/L
	ACETONE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TRANS-1,2-DICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	METHYL TERT-BUTYL ETHER	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,1-dichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CIS-1,2-DICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	550		µg/L	550	R	µg/L
	1,2-Dichloroethylene (total)	-	-	3	-	-	-	-	-	-	-	-	-	-	550		µg/L	550	R	µg/L
	CHLOROFORM	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CARBON TETRACHLORIDE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,1,1-trichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	2-butanone	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	BENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CYCLOHEXANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,2-dichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TRICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	910		µg/L	910	R	µg/L
	1,2-dichloropropane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	BROMODICHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	CIS-1,3-DICHLOROPROPENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TOLUENE	-	-	3	-	-	-	-	-	-	-	-	-	-	26	J	µg/L	26	R	µg/L
	4-methyl-2-pentanone	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TETRACHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	TRANS-1,3-DICHLOROPROPENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	1,1,2-trichloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	DIBROMOCHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L
	Ethylene Dibromide	-	-	3	-	-	-	-	-	-	-	-	-	-	100	U	µg/L	100	R	µg/L

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	2-hexanone	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	CHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	ETHYLBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	XYLENES (TOTAL)	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	M-,P-XYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	O-XYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	STYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	BROMOFORM	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	ISOPROPYLBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,1,2,2-tetrachloroethane	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,3-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,4-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,2-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,2-dibromo-3-chloropropane	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	1,2,4-trichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	METHYL ACETATE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
	METHYLCYCLOHEXANE	-	-	3	-	-	-	-	-	-	-	-	-	-	100 U	µg/L	100 R	µg/L
SWMU318-SB02-00																		
	DICHLORODIFLUOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	CHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	VINYL CHLORIDE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	BROMOMETHANE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	CHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	TRICHLOROFLUOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,1-dichloroethene	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	CARBON DISULFIDE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg

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	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	METHYLENE CHLORIDE	-	-	3	-	-	-	-	-	-	-	-	4	4	7 BJ	µg/Kg	7 R	µg/Kg
	ACETONE	-	-	3	-	-	-	-	-	-	-	-	4	4	15 B	µg/Kg	15 R	µg/Kg
	TRANS-1,2-DICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	METHYL TERT-BUTYL ETHER	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,1-dichloroethane	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	CIS-1,2-DICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,2-Dichloroethylene (total)	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	CHLOROFORM	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	CARBON TETRACHLORIDE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,1,1-trichloroethane	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	2-butanone	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	BENZENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	CYCLOHEXANE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,2-dichloroethane	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	TRICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,2-dichloropropane	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	BROMODICHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	CIS-1,3-DICHLOROPROPENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	TOLUENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	4-methyl-2-pentanone	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	TETRACHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	TRANS-1,3-DICHLOROPROPENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,1,2-trichloroethane	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	DIBROMOCHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	Ethylene Dibromide	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	2-hexanone	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	CHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	ETHYLBENZENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	XYLENES (TOTAL)	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	M-,P-XYLENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	O-XYLENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	STYRENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	BROMOFORM	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	ISOPROPYLBENZENE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,1,2,2-tetrachloroethane	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,3-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,4-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,2-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,2-dibromo-3-chloropropane	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	1,2,4-trichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	METHYL ACETATE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
	METHYLCYCLOHEXANE	-	-	3	-	-	-	-	-	-	-	-	4	4	10 U	µg/Kg	10 R	µg/Kg
SWMU318-SB02-00DL																		
	DICHLORODIFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	CHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	VINYL CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	BROMOMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	CHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	TRICHLOROFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	1,1-dichloroethene	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	CARBON DISULFIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg

Analyte Qualification Codes:

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IC - Initial calibration
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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	METHYLENE CHLORIDE	-	-	-	-	-	-	3	3	-	-	-	-	-	140 BJ	µg/Kg	500 U	µg/Kg
	ACETONE	-	-	-	-	-	9	9	3	-	-	-	-	-	63 J	µg/Kg	500 UJ	µg/Kg
	TRANS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	METHYL TERT-BUTYL ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	1,1-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	CIS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	1,2-Dichloroethylene (total)	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	CHLOROFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	CARBON TETRACHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	1,1,1-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	2-butanone	-	-	-	-	-	9	-	3	-	-	-	-	-	500 U	µg/Kg	500 UJ	µg/Kg
	BENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	CYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	1,2-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	TRICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	1,2-dichloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	BROMODICHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	CIS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	TOLUENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	4-methyl-2-pentanone	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	TETRACHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	TRANS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	1,1,2-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	DIBROMOCHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	Ethylene Dibromide	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg

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	2-hexanone	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	CHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	ETHYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	XYLENES (TOTAL)	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	M-,P-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	O-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	STYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	BROMOFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	ISOPROPYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	1,1,2,2-tetrachloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	1,3-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
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	1,2,4-trichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	METHYL ACETATE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
	METHYLCYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	500 U	µg/Kg	500 U	µg/Kg
SWMU318-SB04-00RE																		
	DICHLORODIFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	VINYL CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	BROMOMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TRICHLOROFLUOROMETHANE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	1,1-dichloroethene	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	CARBON DISULFIDE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg

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	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	METHYLENE CHLORIDE	-	-	-	-	-	-	3	3	-	-	-	-	-	9 BJ	µg/Kg	10 U	µg/Kg
	ACETONE	-	-	-	-	-	9	3	3	-	-	-	-	-	12 B	µg/Kg	12 UJ	µg/Kg
	TRANS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	METHYL TERT-BUTYL ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,1-dichloroethane	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	CIS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-Dichloroethylene (total)	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CHLOROFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CARBON TETRACHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,1,1-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	2-butanone	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	BENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TRICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-dichloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	BROMODICHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CIS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TOLUENE	-	-	-	-	-	-	-	3	-	-	-	-	-	0.9 J	µg/Kg	0.9 J	µg/Kg
	4-methyl-2-pentanone	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TETRACHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TRANS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,1,2-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	DIBROMOCHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	Ethylene Dibromide	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg

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	2-hexanone	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	CHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	ETHYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	XYLENES (TOTAL)	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	M-,P-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	O-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	STYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	BROMOFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	ISOPROPYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,1,2,2-tetrachloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,3-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,4-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-dibromo-3-chloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2,4-trichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	METHYL ACETATE	-	-	-	-	-	9	-	3	-	-	-	-	-	19	µg/Kg	19 J	µg/Kg
	METHYLCYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
SWMU318-SB06-00DRE																		
	DICHLORODIFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	VINYL CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	BROMOMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TRICHLOROFLUOROMETHANE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	1,1-dichloroethene	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	CARBON DISULFIDE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	METHYLENE CHLORIDE	-	-	-	-	-	-	3	3	-	-	-	-	-	7 BJ	µg/Kg	10 U	µg/Kg
	ACETONE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	TRANS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	METHYL TERT-BUTYL ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,1-dichloroethane	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	CIS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-Dichloroethylene (total)	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CHLOROFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CARBON TETRACHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,1,1-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	2-butanone	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	BENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TRICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-dichloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	BROMODICHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CIS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TOLUENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	4-methyl-2-pentanone	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TETRACHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TRANS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,1,2-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	DIBROMOCHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	Ethylene Dibromide	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	2-hexanone	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	CHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	ETHYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	XYLENES (TOTAL)	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	M-,P-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	O-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	STYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	BROMOFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	ISOPROPYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,1,2,2-tetrachloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,3-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,4-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-dibromo-3-chloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2,4-trichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	METHYL ACETATE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	METHYLCYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
SWMU318-SB06-00RE																		
	DICHLORODIFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	VINYL CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	BROMOMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TRICHLOROFLUOROMETHANE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	1,1-dichloroethene	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	CARBON DISULFIDE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg

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Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	METHYLENE CHLORIDE	-	-	-	-	-	-	3	3	-	-	-	-	-	8 BJ	µg/Kg	10 U	µg/Kg
	ACETONE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	TRANS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	METHYL TERT-BUTYL ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,1-dichloroethane	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	CIS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-Dichloroethylene (total)	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CHLOROFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CARBON TETRACHLORIDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,1,1-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	2-butanone	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	BENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TRICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-dichloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	BROMODICHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	CIS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TOLUENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	4-methyl-2-pentanone	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TETRACHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	TRANS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,1,2-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	DIBROMOCHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	Ethylene Dibromide	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg

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	CHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	ETHYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	XYLENES (TOTAL)	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	M-,P-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	O-XYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	STYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	BROMOFORM	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	ISOPROPYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,1,2,2-tetrachloroethane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,3-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,4-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2-dibromo-3-chloropropane	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	1,2,4-trichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
	METHYL ACETATE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/Kg	10 UJ	µg/Kg
	METHYLCYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/Kg	10 U	µg/Kg
SWMU318-SB09-00																		
	DICHLORODIFLUOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	CHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	VINYL CHLORIDE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,1,2,2-tetrachloroethane	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,3-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,4-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,2-dichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,2-dibromo-3-chloropropane	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,2,4-trichlorobenzene	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg

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SDG ID: **2004-B**

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	METHYL ACETATE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	METHYLCYCLOHEXANE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	BROMOMETHANE	-	-	3	-	-	-	-	-	-	-	-	3	-	2 J	µg/Kg	2 R	µg/Kg
	CHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	TRICHLOROFLUOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	3	-	6 J	µg/Kg	6 R	µg/Kg
	1,1-dichloroethene	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	CARBON DISULFIDE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	METHYLENE CHLORIDE	-	-	3	-	-	-	-	-	-	-	-	3	-	23 B	µg/Kg	23 R	µg/Kg
	ACETONE	-	-	3	-	-	-	-	-	-	-	-	3	-	8 JB	µg/Kg	8 R	µg/Kg
	TRANS-1,2-DICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	METHYL TERT-BUTYL ETHER	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,1-dichloroethane	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	CIS-1,2-DICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,2-Dichloroethylene (total)	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	CHLOROFORM	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	CARBON TETRACHLORIDE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,1,1-trichloroethane	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	2-butanone	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	BENZENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	CYCLOHEXANE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,2-dichloroethane	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	TRICHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,2-dichloropropane	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	BROMODICHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	CIS-1,3-DICHLOROPROPENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	TOLUENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg

Analyte Qualification Codes:

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CC - Continuing calibration
BC - Blank contamination
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E - (Lab qualifier) Exceeds calibration range
S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	4-methyl-2-pentanone	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	TETRACHLOROETHENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	TRANS-1,3-DICHLOROPROPENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	1,1,2-trichloroethane	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	DIBROMOCHLOROMETHANE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	Ethylene Dibromide	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	2-hexanone	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	CHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	ETHYLBENZENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	XYLENES (TOTAL)	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	M-,P-XYLENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	O-XYLENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	STYRENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	BROMOFORM	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
	ISOPROPYLBENZENE	-	-	3	-	-	-	-	-	-	-	-	3	-	12 U	µg/Kg	12 R	µg/Kg
SWMU318-SB09-00RE																		
	DICHLORODIFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	CHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	VINYL CHLORIDE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	BROMOMETHANE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	CHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	TRICHLOROFLUOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	3	-	2 J	µg/Kg	2 J	µg/Kg
	1,1-dichloroethene	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	CARBON DISULFIDE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg

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S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	METHYLENE CHLORIDE	-	-	-	-	-	9	3	3	-	-	-	3	-	23 B	µg/Kg	23 UJ	µg/Kg
	ACETONE	-	-	-	-	-	9	-	3	-	-	-	3	-	12 U	µg/Kg	12 UJ	µg/Kg
	TRANS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	METHYL TERT-BUTYL ETHER	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,1-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	CIS-1,2-DICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,2-Dichloroethylene (total)	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	CHLOROFORM	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	CARBON TETRACHLORIDE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,1,1-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	2-butanone	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	BENZENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	CYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,2-dichloroethane	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	TRICHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,2-dichloropropane	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	BROMODICHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	CIS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	TOLUENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	4-methyl-2-pentanone	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	TETRACHLOROETHENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	TRANS-1,3-DICHLOROPROPENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,1,2-trichloroethane	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	DIBROMOCHLOROMETHANE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	Ethylene Dibromide	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	2-hexanone	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	CHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg

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S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	ETHYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	XYLENES (TOTAL)	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	M-,P-XYLENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	O-XYLENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	STYRENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	BROMOFORM	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	ISOPROPYLBENZENE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,1,2,2-tetrachloroethane	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,3-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,4-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,2-dichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,2-dibromo-3-chloropropane	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	1,2,4-trichlorobenzene	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	METHYL ACETATE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg
	METHYLCYCLOHEXANE	-	-	-	-	-	-	-	3	-	-	-	3	-	12 U	µg/Kg	12 U	µg/Kg

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E - (Lab qualifier) Exceeds calibration range
S - (Lab qualifier) Column artifact

Qualification Category	**CO**
Qualification Code	**3**
Qualification Description	There were two or more analyses for this sample and the reviewer determined which data should l reported.
Qualification Action	Considerations for reporting data include, but are not limited to, dilutions, interferences, instrument sensitivity, peak resolution and a comparison of the values between the multiple analyses. Results qualified as unusable (R) when higher quality results are available from another analysis.
Qualification Category	**CO**
Qualification Code	**5**
Qualification Description	A dilution was combined with the original sample in validation.
Qualification Action	The sample was analyzed at a dilution for analyte(s) which exceeded calibration criteria. The valid combined the result for the diluted analyte with the original sample and qualified the result with a (D)
Qualification Category	**IC**
Qualification Code	**10**
Qualification Description	An initial calibration relative response factor (RRF) was less than 0.05 for an analyte.
Qualification Action	If any initial calibration RRF is less than 0.05, positive results that have acceptable mass spectral identification are qualified estimated (J) and non-detected analytes as unusable (R).
Qualification Category	**CC**
Qualification Code	**6**
Qualification Description	A continuing calibration relative response factor (RRF) for a target analyte was less than 0.05.
Qualification Action	CLP methodology requires that all Relative Response Factors (RRF) for target compounds in the continuing calibration must be greater than 0.05. Positive sample results are qualified as estimated and non-detected analytes are qualified as unusable (R).
Qualification Category	**CC**
Qualification Code	**9**
Qualification Description	The continuing calibration verification demonstrated a percent difference (%D) greater than 25% fo target analyte.
Qualification Action	CLP method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative results. Continuing calibra verification (CCV) standards establish that the initial calibration is valid. If the percent difference (% between the initial and continuing calibration is greater than 25%, then all affected analytes are qua estimated (J) or estimated (UJ).

Lab: **KASW / KASW** SDG ID: **2004-B**

Qualification Category: **BC**

Qualification Code: **3**

Qualification Description: A common lab contaminant was detected in a blank and the detection limit for this analyte in the sam was raised using the "ten times rule."

Qualification Action: EPA methods do not allow blank results to be subtracted from the sample results. Instead, the level the blank is used to establish a higher detection limit for those compounds found in the blank. When compound(s) detected in the blank is a common lab contaminant (2-butanone, acetone, methylene chloride, cyclohexane, or a phthalate ester), the "ten-times rule" is employed. This is done by multip the contamination value by ten; the value thus obtained becomes the "new" blank level. If the sampl value is between the new blank level and the project selected reporting limit, then the value for the sample is used with a "U" qualifier. If the sample value is below the reporting limit, then the reportin limit value is used with the "U" qualifier. If the sample value is greater than the new blank level, ther detection limit should not be raised and no action is taken.

Qualification Category: **BC**

Qualification Code: **9**

Qualification Description: Little or no contamination was present in the associated blanks, but the positive result in the sample was suspected of being common laboratory contamination.

Qualification Action: Qualification of the result is deemed necessary because contamination was suspected to be comm lab contaminants. The common lab contaminants are 2-butanone, acetone, methylene chloride, cyclohexane, or a phthalate ester. The result is either qualified to the project selected quantitation li and qualified as a non-detect (U) or at the laboratory reported value and qualified as a non-detect (U gross contamination exists all affected compounds may be qualified as unusable (R).

Qualification Category: **BC**

Qualification Code: **14**

Qualification Description: Contamination was detected in a field or equipment blank and the detection limit for this analyte in th sample was raised using the "five times rule."

Qualification Action: EPA methods do not allow blank results to be subtracted from the sample results. Instead, the level the blanks are used to establish a higher detection limit for those analytes found in the blank. When contaminant is found in a field blank or equipment blank (FB,EB) above the reporting limit, the "five ti rule" is employed. For this rule, the blank result is multiplied by a factor of 5 to achieve a "new blank level". If a reported sample value is greater than the reporting limit but less than the new blank level then the sample's value is used with a non-detect (U) qualifier. If the sample's value is greater than new blank level, no action is taken.

Qualification Category: **MS**

Qualification Code: **3**

Qualification Description: The laboratory did not analyze matrix spike samples at the appropriate frequency.

Qualification Action: Data for matrix spikes are generated to determine long term precision and accuracy of the analytica method on various matrices and to demonstrate acceptable analyte recovery by the laboratory at th of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. If matrix spike data are not analyzed at the appropriate frequency, the effects c batch specific matrix interference cannot be evaluated.

Lab: **KASW / KASW** SDG ID: **2004-B**

Qualification Category	**TC**
Qualification Code	**2**
Qualification Description	There was an erroneous identification of a TCL compound.
Qualification Action	The validator compares the laboratory spectra of a compound to a standard spectra to verify the co identification of that compound. If the spectra of the compounds do not match, there may be a false positive or false negative result. A false positive reports a compound's presence when it is absent false negative fails to report a compound that is present. That compound is qualified as non-detecte (U), tentatively identified (NJ), or unusable (R).
Qualification Category	**SD**
Qualification Code	**3**
Qualification Description	A volatile surrogate compound had a recovery greater than the upper acceptance limit.
Qualification Action	If a volatile surrogate recovery is greater than the upper acceptance limit, all detected compounds f that sample are qualified as estimated (J) and non-detects are not qualified.
Qualification Category	**SD**
Qualification Code	**4**
Qualification Description	A volatile surrogate compound had a recovery less than the lower acceptance limit.
Qualification Action	If a surrogate has a recovery greater than or equal to 10 percent but less than the lower acceptanc any detected compounds for that sample are qualified as estimated (J) and non-detects are qualifie estimated (UJ). If a recovery is less than 10 percent, detected compounds are qualified as estimate and non-detected compounds are qualified as unusable (R).
Qualification Category	**IS**
Qualification Code	**4**
Qualification Description	The internal standard response varied by more than a factor of 2 (-50%-100%) from the continuing calibration.
Qualification Action	Internal standard performance criteria ensures that GC/MS sensitivity and response are stable durir each analysis. If an internal standard response varies by more than a factor of 2 (-50%-100%) fro continuing calibration, all detected compounds associated with that internal standard are qualified a estimated (J). Non-detects with a response greater than 100% are not qualified while non-detects response less than -50% are qualified as estimated (UJ). If the response is extremely low, non-det compounds are qualified as unusable (R).

Client Sample ID: **SWMU318-SB06-00RE** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Re-extraction/Re-analysis** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0691-10RA** Sampling Date/Time: **03/16/2004 16:00** SDG Page:

Method: CLP OLM04.2 V

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10 U	µg/Kg	
74-87-3	CHLOROMETHANE	Low	1	10	10 U	µg/Kg	
75-01-4	VINYL CHLORIDE	Low	1	10	10 U	µg/Kg	
74-83-9	BROMOMETHANE	Low	1	10	10 U	µg/Kg	
75-00-3	CHLOROETHANE	Low	1	10	10 U	µg/Kg	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10 UJ	µg/Kg	*
75-35-4	1,1-dichloroethene	Low	1	10	10 UJ	µg/Kg	*
75-15-0	CARBON DISULFIDE	Low	1	10	10 UJ	µg/Kg	*
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	10 UJ	µg/Kg	*
75-09-2	METHYLENE CHLORIDE	Low	1	10	10 U	µg/Kg	*
67-64-1	ACETONE	Low	1	10	10 UJ	µg/Kg	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	10 U	µg/Kg	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10 U	µg/Kg	
75-34-3	1,1-dichloroethane	Low	1	10	10 UJ	µg/Kg	*
156-59-2	CIS-1,2-DICHLOROETHENE	Low	1	10	10 U	µg/Kg	
540-59-0	1,2-Dichloroethylene (total)	Low	1	10	10 U	µg/Kg	
67-66-3	CHLOROFORM	Low	1	10	10 U	µg/Kg	
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10 U	µg/Kg	
71-55-6	1,1,1-trichloroethane	Low	1	10	10 U	µg/Kg	
78-93-3	2-butanone	Low	1	10	10 UJ	µg/Kg	*
71-43-2	BENZENE	Low	1	10	10 U	µg/Kg	
110-82-7	CYCLOHEXANE	Low	1	10	10 U	µg/Kg	
107-06-2	1,2-dichloroethane	Low	1	10	10 U	µg/Kg	
79-01-6	TRICHLOROETHENE	Low	1	10	10 U	µg/Kg	
78-87-5	1,2-dichloropropane	Low	1	10	10 U	µg/Kg	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10 U	µg/Kg	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/Kg	
108-88-3	TOLUENE	Low	1	10	10 U	µg/Kg	
108-10-1	4-methyl-2-pentanone	Low	1	10	10 U	µg/Kg	
127-18-4	TETRACHLOROETHENE	Low	1	10	10 U	µg/Kg	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/Kg	
79-00-5	1,1,2-trichloroethane	Low	1	10	10 U	µg/Kg	
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10 U	µg/Kg	
106-93-4	Ethylene Dibromide	Low	1	10	10 U	µg/Kg	
591-78-6	2-hexanone	Low	1	10	10 UJ	µg/Kg	*
108-90-7	CHLOROBENZENE	Low	1	10	10 U	µg/Kg	
100-41-4	ETHYLBENZENE	Low	1	10	10 U	µg/Kg	
1330-20-7	XYLENES (TOTAL)	Low	1	10	10 U	µg/Kg	
136777-61-2	M-,P-XYLENE	Low	1	10	10 U	µg/Kg	
95-47-6	O-XYLENE	Low	1	10	10 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID: **SWMU318-SB06-00RE** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Re-extraction/Re-analysis** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0691-10RA** Sampling Date/Time: **03/16/2004 16:00** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
100-42-5	STYRENE	Low	1	10	10 U	µg/Kg	
75-25-2	BROMOFORM	Low	1	10	10 U	µg/Kg	
98-82-8	ISOPROPYLBENZENE	Low	1	10	10 U	µg/Kg	
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 U	µg/Kg	
541-73-1	1,3-dichlorobenzene	Low	1	10	10 U	µg/Kg	
106-46-7	1,4-dichlorobenzene	Low	1	10	10 U	µg/Kg	
95-50-1	1,2-dichlorobenzene	Low	1	10	10 U	µg/Kg	
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 U	µg/Kg	
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 U	µg/Kg	
79-20-9	METHYL ACETATE	Low	1	10	10 UJ	µg/Kg	*
108-87-2	METHYLCYCLOHEXANE	Low	1	10	10 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-SB06-00DRE** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Re-extraction/Re-analysis** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0691-11RA** Sampling Date/Time: **03/16/2004 16:00** SDG Page:

Method: CLP OLM04.2 V

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10 U	µg/Kg	
74-87-3	CHLOROMETHANE	Low	1	10	10 U	µg/Kg	
75-01-4	VINYL CHLORIDE	Low	1	10	10 U	µg/Kg	
74-83-9	BROMOMETHANE	Low	1	10	10 U	µg/Kg	
75-00-3	CHLOROETHANE	Low	1	10	10 U	µg/Kg	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10 UJ	µg/Kg	*
75-35-4	1,1-dichloroethene	Low	1	10	10 UJ	µg/Kg	*
75-15-0	CARBON DISULFIDE	Low	1	10	10 UJ	µg/Kg	*
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	10 UJ	µg/Kg	*
75-09-2	METHYLENE CHLORIDE	Low	1	10	10 U	µg/Kg	*
67-64-1	ACETONE	Low	1	10	10 UJ	µg/Kg	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	10 U	µg/Kg	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10 U	µg/Kg	
75-34-3	1,1-dichloroethane	Low	1	10	10 UJ	µg/Kg	*
156-59-2	CIS-1,2-DICHLOROETHENE	Low	1	10	10 U	µg/Kg	
540-59-0	1,2-Dichloroethylene (total)	Low	1	10	10 U	µg/Kg	
67-66-3	CHLOROFORM	Low	1	10	10 U	µg/Kg	
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10 U	µg/Kg	
71-55-6	1,1,1-trichloroethane	Low	1	10	10 U	µg/Kg	
78-93-3	2-butanone	Low	1	10	10 UJ	µg/Kg	*
71-43-2	BENZENE	Low	1	10	10 U	µg/Kg	
110-82-7	CYCLOHEXANE	Low	1	10	10 U	µg/Kg	
107-06-2	1,2-dichloroethane	Low	1	10	10 U	µg/Kg	
79-01-6	TRICHLOROETHENE	Low	1	10	10 U	µg/Kg	
78-87-5	1,2-dichloropropane	Low	1	10	10 U	µg/Kg	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10 U	µg/Kg	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/Kg	
108-88-3	TOLUENE	Low	1	10	10 U	µg/Kg	
108-10-1	4-methyl-2-pentanone	Low	1	10	10 U	µg/Kg	
127-18-4	TETRACHLOROETHENE	Low	1	10	10 U	µg/Kg	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/Kg	
79-00-5	1,1,2-trichloroethane	Low	1	10	10 U	µg/Kg	
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10 U	µg/Kg	
106-93-4	Ethylene Dibromide	Low	1	10	10 U	µg/Kg	
591-78-6	2-hexanone	Low	1	10	10 UJ	µg/Kg	*
108-90-7	CHLOROBENZENE	Low	1	10	10 U	µg/Kg	
100-41-4	ETHYLBENZENE	Low	1	10	10 U	µg/Kg	
1330-20-7	XYLENES (TOTAL)	Low	1	10	10 U	µg/Kg	
136777-61-2	M-,P-XYLENE	Low	1	10	10 U	µg/Kg	
95-47-6	O-XYLENE	Low	1	10	10 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID: **SWMU318-SB06-00DRE** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Re-extraction/Re-analysis** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0691-11RA** Sampling Date/Time: **03/16/2004 16:00** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
100-42-5	STYRENE	Low	1	10	10 U	µg/Kg	
75-25-2	BROMOFORM	Low	1	10	10 U	µg/Kg	
98-82-8	ISOPROPYLBENZENE	Low	1	10	10 U	µg/Kg	
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 U	µg/Kg	
541-73-1	1,3-dichlorobenzene	Low	1	10	10 U	µg/Kg	
106-46-7	1,4-dichlorobenzene	Low	1	10	10 U	µg/Kg	
95-50-1	1,2-dichlorobenzene	Low	1	10	10 U	µg/Kg	
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 U	µg/Kg	
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 U	µg/Kg	
79-20-9	METHYL ACETATE	Low	1	10	10 UJ	µg/Kg	*
108-87-2	METHYLCYCLOHEXANE	Low	1	10	10 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
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TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID: **SWMU318-SB02-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **14** SDG ID: **2004-B**
Lab Sample ID: **WU0691-3** Sampling Date/Time: **03/16/2004 14:45** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10 R	µg/Kg	*
74-87-3	CHLOROMETHANE	Low	1	10	10 R	µg/Kg	*
75-01-4	VINYL CHLORIDE	Low	1	10	10 R	µg/Kg	*
74-83-9	BROMOMETHANE	Low	1	10	10 R	µg/Kg	*
75-00-3	CHLOROETHANE	Low	1	10	10 R	µg/Kg	*
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10 R	µg/Kg	*
75-35-4	1,1-dichloroethene	Low	1	10	10 R	µg/Kg	*
75-15-0	CARBON DISULFIDE	Low	1	10	10 R	µg/Kg	*
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	10 R	µg/Kg	*
75-09-2	METHYLENE CHLORIDE	Low	1	10	7 R	µg/Kg	*
67-64-1	ACETONE	Low	1	10	15 R	µg/Kg	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	10 R	µg/Kg	*
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10 R	µg/Kg	*
75-34-3	1,1-dichloroethane	Low	1	10	10 R	µg/Kg	*
156-59-2	CIS-1,2-DICHLOROETHENE	Low	1	10	10 R	µg/Kg	*
540-59-0	1,2-Dichloroethylene (total)	Low	1	10	10 R	µg/Kg	*
67-66-3	CHLOROFORM	Low	1	10	10 R	µg/Kg	*
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10 R	µg/Kg	*
71-55-6	1,1,1-trichloroethane	Low	1	10	10 R	µg/Kg	*
78-93-3	2-butanone	Low	1	10	10 R	µg/Kg	*
71-43-2	BENZENE	Low	1	10	10 R	µg/Kg	*
110-82-7	CYCLOHEXANE	Low	1	10	10 R	µg/Kg	*
107-06-2	1,2-dichloroethane	Low	1	10	10 R	µg/Kg	*
79-01-6	TRICHLOROETHENE	Low	1	10	10 R	µg/Kg	*
78-87-5	1,2-dichloropropane	Low	1	10	10 R	µg/Kg	*
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10 R	µg/Kg	*
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10 R	µg/Kg	*
108-88-3	TOLUENE	Low	1	10	10 R	µg/Kg	*
108-10-1	4-methyl-2-pentanone	Low	1	10	10 R	µg/Kg	*
127-18-4	TETRACHLOROETHENE	Low	1	10	10 R	µg/Kg	*
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10 R	µg/Kg	*
79-00-5	1,1,2-trichloroethane	Low	1	10	10 R	µg/Kg	*
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10 R	µg/Kg	*
106-93-4	Ethylene Dibromide	Low	1	10	10 R	µg/Kg	*
591-78-6	2-hexanone	Low	1	10	10 R	µg/Kg	*
108-90-7	CHLOROBENZENE	Low	1	10	10 R	µg/Kg	*
100-41-4	ETHYLBENZENE	Low	1	10	10 R	µg/Kg	*
1330-20-7	XYLENES (TOTAL)	Low	1	10	10 R	µg/Kg	*
136777-61-2	M-,P-XYLENE	Low	1	10	10 R	µg/Kg	*
95-47-6	O-XYLENE	Low	1	10	10 R	µg/Kg	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID:	**SWMU318-SB02-00**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**14**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-3**	Sampling Date/Time:	**03/16/2004 14:45**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
100-42-5	STYRENE	Low	1	10	10 R	µg/Kg	*
75-25-2	BROMOFORM	Low	1	10	10 R	µg/Kg	*
98-82-8	ISOPROPYLBENZENE	Low	1	10	10 R	µg/Kg	*
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 R	µg/Kg	*
541-73-1	1,3-dichlorobenzene	Low	1	10	10 R	µg/Kg	*
106-46-7	1,4-dichlorobenzene	Low	1	10	10 R	µg/Kg	*
95-50-1	1,2-dichlorobenzene	Low	1	10	10 R	µg/Kg	*
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 R	µg/Kg	*
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 R	µg/Kg	*
79-20-9	METHYL ACETATE	Low	1	10	10 R	µg/Kg	*
108-87-2	METHYLCYCLOHEXANE	Low	1	10	10 R	µg/Kg	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-SB02-00DL** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **14** SDG ID: **2004-B**
Lab Sample ID: **WU0691-3DL** Sampling Date/Time: **03/16/2004 14:45** SDG Page:

Method: CLP OLM04.2 V

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
75-71-8	DICHLORODIFLUOROMETHANE	Med	1	500	500 U	µg/Kg	
74-87-3	CHLOROMETHANE	Med	1	500	500 U	µg/Kg	
75-01-4	VINYL CHLORIDE	Med	1	500	500 U	µg/Kg	
74-83-9	BROMOMETHANE	Med	1	500	500 U	µg/Kg	
75-00-3	CHLOROETHANE	Med	1	500	500 U	µg/Kg	
75-69-4	TRICHLOROFLUOROMETHANE	Med	1	500	500 U	µg/Kg	
75-35-4	1,1-dichloroethene	Med	1	500	500 U	µg/Kg	
75-15-0	CARBON DISULFIDE	Med	1	500	500 U	µg/Kg	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Med	1	500	500 U	µg/Kg	
75-09-2	METHYLENE CHLORIDE	Med	1	500	500 U	µg/Kg	*
67-64-1	ACETONE	Med	1	500	500 UJ	µg/Kg	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Med	1	500	500 U	µg/Kg	
1634-04-4	METHYL TERT-BUTYL ETHER	Med	1	500	500 U	µg/Kg	
75-34-3	1,1-dichloroethane	Med	1	500	500 U	µg/Kg	
156-59-2	CIS-1,2-DICHLOROETHENE	Med	1	500	500 U	µg/Kg	
540-59-0	1,2-Dichloroethylene (total)	Med	1	500	500 U	µg/Kg	
67-66-3	CHLOROFORM	Med	1	500	500 U	µg/Kg	
56-23-5	CARBON TETRACHLORIDE	Med	1	500	500 U	µg/Kg	
71-55-6	1,1,1-trichloroethane	Med	1	500	500 U	µg/Kg	
78-93-3	2-butanone	Med	1	500	500 UJ	µg/Kg	*
71-43-2	BENZENE	Med	1	500	500 U	µg/Kg	
110-82-7	CYCLOHEXANE	Med	1	500	500 U	µg/Kg	
107-06-2	1,2-dichloroethane	Med	1	500	500 U	µg/Kg	
79-01-6	TRICHLOROETHENE	Med	1	500	500 U	µg/Kg	
78-87-5	1,2-dichloropropane	Med	1	500	500 U	µg/Kg	
75-27-4	BROMODICHLOROMETHANE	Med	1	500	500 U	µg/Kg	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Med	1	500	500 U	µg/Kg	
108-88-3	TOLUENE	Med	1	500	500 U	µg/Kg	
108-10-1	4-methyl-2-pentanone	Med	1	500	500 U	µg/Kg	
127-18-4	TETRACHLOROETHENE	Med	1	500	500 U	µg/Kg	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Med	1	500	500 U	µg/Kg	
79-00-5	1,1,2-trichloroethane	Med	1	500	500 U	µg/Kg	
124-48-1	DIBROMOCHLOROMETHANE	Med	1	500	500 U	µg/Kg	
106-93-4	Ethylene Dibromide	Med	1	500	500 U	µg/Kg	
591-78-6	2-hexanone	Med	1	500	500 U	µg/Kg	
108-90-7	CHLOROBENZENE	Med	1	500	500 U	µg/Kg	
100-41-4	ETHYLBENZENE	Med	1	500	500 U	µg/Kg	
1330-20-7	XYLENES (TOTAL)	Med	1	500	500 U	µg/Kg	
136777-61-2	M-,P-XYLENE	Med	1	500	500 U	µg/Kg	
95-47-6	O-XYLENE	Med	1	500	500 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID:	**SWMU318-SB02-00DL**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample Dilution**	% Moisture:	**14**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-3DL**	Sampling Date/Time:	**03/16/2004 14:45**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method:	**CLP OLM04.2 V**					
100-42-5	STYRENE	Med	1	500	500 U	µg/Kg
75-25-2	BROMOFORM	Med	1	500	500 U	µg/Kg
98-82-8	ISOPROPYLBENZENE	Med	1	500	500 U	µg/Kg
79-34-5	1,1,2,2-tetrachloroethane	Med	1	500	500 U	µg/Kg
541-73-1	1,3-dichlorobenzene	Med	1	500	500 U	µg/Kg
106-46-7	1,4-dichlorobenzene	Med	1	500	500 U	µg/Kg
95-50-1	1,2-dichlorobenzene	Med	1	500	500 U	µg/Kg
96-12-8	1,2-dibromo-3-chloropropane	Med	1	500	500 U	µg/Kg
120-82-1	1,2,4-trichlorobenzene	Med	1	500	500 U	µg/Kg
79-20-9	METHYL ACETATE	Med	1	500	500 U	µg/Kg
108-87-2	METHYLCYCLOHEXANE	Med	1	500	500 U	µg/Kg

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-SB04-00RE** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Re-extraction/Re-analysis** % Moisture: **17** SDG ID: **2004-B**
Lab Sample ID: **WU0691-7RA** Sampling Date/Time: **03/16/2004 15:03** SDG Page:

Method: CLP OLM04.2 V

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10 U	µg/Kg	
74-87-3	CHLOROMETHANE	Low	1	10	10 U	µg/Kg	
75-01-4	VINYL CHLORIDE	Low	1	10	10 U	µg/Kg	
74-83-9	BROMOMETHANE	Low	1	10	10 U	µg/Kg	
75-00-3	CHLOROETHANE	Low	1	10	10 U	µg/Kg	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10 UJ	µg/Kg	*
75-35-4	1,1-dichloroethene	Low	1	10	10 UJ	µg/Kg	*
75-15-0	CARBON DISULFIDE	Low	1	10	10 UJ	µg/Kg	*
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	10 UJ	µg/Kg	*
75-09-2	METHYLENE CHLORIDE	Low	1	10	10 U	µg/Kg	*
67-64-1	ACETONE	Low	1	10	12 UJ	µg/Kg	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	10 U	µg/Kg	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10 U	µg/Kg	
75-34-3	1,1-dichloroethane	Low	1	10	10 UJ	µg/Kg	*
156-59-2	CIS-1,2-DICHLOROETHENE	Low	1	10	10 U	µg/Kg	
540-59-0	1,2-Dichloroethylene (total)	Low	1	10	10 U	µg/Kg	
67-66-3	CHLOROFORM	Low	1	10	10 U	µg/Kg	
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10 U	µg/Kg	
71-55-6	1,1,1-trichloroethane	Low	1	10	10 U	µg/Kg	
78-93-3	2-butanone	Low	1	10	10 UJ	µg/Kg	*
71-43-2	BENZENE	Low	1	10	10 U	µg/Kg	
110-82-7	CYCLOHEXANE	Low	1	10	10 U	µg/Kg	
107-06-2	1,2-dichloroethane	Low	1	10	10 U	µg/Kg	
79-01-6	TRICHLOROETHENE	Low	1	10	10 U	µg/Kg	
78-87-5	1,2-dichloropropane	Low	1	10	10 U	µg/Kg	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10 U	µg/Kg	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/Kg	
108-88-3	TOLUENE	Low	1	10	0.9 J	µg/Kg	
108-10-1	4-methyl-2-pentanone	Low	1	10	10 U	µg/Kg	
127-18-4	TETRACHLOROETHENE	Low	1	10	10 U	µg/Kg	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/Kg	
79-00-5	1,1,2-trichloroethane	Low	1	10	10 U	µg/Kg	
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10 U	µg/Kg	
106-93-4	Ethylene Dibromide	Low	1	10	10 U	µg/Kg	
591-78-6	2-hexanone	Low	1	10	10 UJ	µg/Kg	*
108-90-7	CHLOROBENZENE	Low	1	10	10 U	µg/Kg	
100-41-4	ETHYLBENZENE	Low	1	10	10 U	µg/Kg	
1330-20-7	XYLENES (TOTAL)	Low	1	10	10 U	µg/Kg	
136777-61-2	M-,P-XYLENE	Low	1	10	10 U	µg/Kg	
95-47-6	O-XYLENE	Low	1	10	10 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID: **SWMU318-SB04-00RE** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Re-extraction/Re-analysis** % Moisture: **17** SDG ID: **2004-B**
Lab Sample ID: **WU0691-7RA** Sampling Date/Time: **03/16/2004 15:03** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
100-42-5	STYRENE	Low	1	10	10 U	µg/Kg	
75-25-2	BROMOFORM	Low	1	10	10 U	µg/Kg	
98-82-8	ISOPROPYLBENZENE	Low	1	10	10 U	µg/Kg	
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 U	µg/Kg	
541-73-1	1,3-dichlorobenzene	Low	1	10	10 U	µg/Kg	
106-46-7	1,4-dichlorobenzene	Low	1	10	10 U	µg/Kg	
95-50-1	1,2-dichlorobenzene	Low	1	10	10 U	µg/Kg	
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 U	µg/Kg	
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 U	µg/Kg	
79-20-9	METHYL ACETATE	Low	1	10	19 J	µg/Kg	*
108-87-2	METHYLCYCLOHEXANE	Low	1	10	10 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID:	**SWMU318-GW04-01**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0717-7**	Sampling Date/Time:	**03/18/2004 9:15**	SDG Page:	

Method: CLP OLM04.2 V

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10 U	µg/L	
74-87-3	CHLOROMETHANE	Low	1	10	10 U	µg/L	
75-01-4	VINYL CHLORIDE	Low	1	10	10 U	µg/L	
74-83-9	BROMOMETHANE	Low	1	10	10 U	µg/L	
75-00-3	CHLOROETHANE	Low	1	10	10 U	µg/L	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10 U	µg/L	
75-35-4	1,1-dichloroethene	Low	1	10	10 U	µg/L	
75-15-0	CARBON DISULFIDE	Low	1	10	10 U	µg/L	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	10 U	µg/L	
75-09-2	METHYLENE CHLORIDE	Low	1	10	10 U	µg/L	
67-64-1	ACETONE	Low	1	10	10 UJ	µg/L	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	10 U	µg/L	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10 U	µg/L	
75-34-3	1,1-dichloroethane	Low	1	10	10 U	µg/L	
156-59-2	CIS-1,2-DICHLOROETHENE	Low	1	10	2 J	µg/L	
540-59-0	1,2-Dichloroethylene (total)	Low	1	10	2 J	µg/L	
67-66-3	CHLOROFORM	Low	1	10	10 U	µg/L	
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10 U	µg/L	
71-55-6	1,1,1-trichloroethane	Low	1	10	10 U	µg/L	
78-93-3	2-butanone	Low	1	10	10 UJ	µg/L	*
71-43-2	BENZENE	Low	1	10	5 J	µg/L	
110-82-7	CYCLOHEXANE	Low	1	10	10 U	µg/L	
107-06-2	1,2-dichloroethane	Low	1	10	10 U	µg/L	
79-01-6	TRICHLOROETHENE	Low	1	10	2 J	µg/L	
78-87-5	1,2-dichloropropane	Low	1	10	10 U	µg/L	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10 U	µg/L	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
108-88-3	TOLUENE	Low	1	10	10 U	µg/L	
108-10-1	4-methyl-2-pentanone	Low	1	10	10 U	µg/L	
127-18-4	TETRACHLOROETHENE	Low	1	10	10 U	µg/L	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
79-00-5	1,1,2-trichloroethane	Low	1	10	10 U	µg/L	
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10 U	µg/L	
106-93-4	Ethylene Dibromide	Low	1	10	10 U	µg/L	
591-78-6	2-hexanone	Low	1	10	10 U	µg/L	
108-90-7	CHLOROBENZENE	Low	1	10	10 U	µg/L	
100-41-4	ETHYLBENZENE	Low	1	10	10 U	µg/L	
1330-20-7	XYLENES (TOTAL)	Low	1	10	10 U	µg/L	
136777-61-2	M-,P-XYLENE	Low	1	10	10 U	µg/L	
95-47-6	O-XYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID:	**SWMU318-GW04-01**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0717-7**	Sampling Date/Time:	**03/18/2004 9:15**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method:	**CLP OLM04.2 V**					
100-42-5	STYRENE	Low	1	10	10 U	µg/L
75-25-2	BROMOFORM	Low	1	10	10 U	µg/L
98-82-8	ISOPROPYLBENZENE	Low	1	10	10 U	µg/L
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 U	µg/L
541-73-1	1,3-dichlorobenzene	Low	1	10	10 U	µg/L
106-46-7	1,4-dichlorobenzene	Low	1	10	10 U	µg/L
95-50-1	1,2-dichlorobenzene	Low	1	10	10 U	µg/L
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 U	µg/L
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 U	µg/L
79-20-9	METHYL ACETATE	Low	1	10	10 U	µg/L
108-87-2	METHYLCYCLOHEXANE	Low	1	10	10 U	µg/L

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N - Presumptively present
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-GW07** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-9** Sampling Date/Time: **03/18/2004 15:25** SDG Page:

Method: CLP OLM04.2 V

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10 U	µg/L	
74-87-3	CHLOROMETHANE	Low	1	10	10 U	µg/L	
75-01-4	VINYL CHLORIDE	Low	1	10	10 U	µg/L	
74-83-9	BROMOMETHANE	Low	1	10	10 U	µg/L	
75-00-3	CHLOROETHANE	Low	1	10	10 U	µg/L	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10 U	µg/L	
75-35-4	1,1-dichloroethene	Low	1	10	10 U	µg/L	
75-15-0	CARBON DISULFIDE	Low	1	10	10 U	µg/L	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	10 U	µg/L	
75-09-2	METHYLENE CHLORIDE	Low	1	10	10 U	µg/L	
67-64-1	ACETONE	Low	1	10	10 UJ	µg/L	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	10 U	µg/L	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10 U	µg/L	
75-34-3	1,1-dichloroethane	Low	1	10	10 U	µg/L	
156-59-2	CIS-1,2-DICHLOROETHENE	Low	1	10	10 U	µg/L	
540-59-0	1,2-Dichloroethylene (total)	Low	1	10	10 U	µg/L	
67-66-3	CHLOROFORM	Low	1	10	10 U	µg/L	
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10 U	µg/L	
71-55-6	1,1,1-trichloroethane	Low	1	10	10 U	µg/L	
78-93-3	2-butanone	Low	1	10	10 UJ	µg/L	*
71-43-2	BENZENE	Low	1	10	10 U	µg/L	
110-82-7	CYCLOHEXANE	Low	1	10	10 U	µg/L	
107-06-2	1,2-dichloroethane	Low	1	10	10 U	µg/L	
79-01-6	TRICHLOROETHENE	Low	1	10	10 U	µg/L	
78-87-5	1,2-dichloropropane	Low	1	10	10 U	µg/L	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10 U	µg/L	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
108-88-3	TOLUENE	Low	1	10	10 U	µg/L	
108-10-1	4-methyl-2-pentanone	Low	1	10	10 U	µg/L	
127-18-4	TETRACHLOROETHENE	Low	1	10	10 U	µg/L	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
79-00-5	1,1,2-trichloroethane	Low	1	10	10 U	µg/L	
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10 U	µg/L	
106-93-4	Ethylene Dibromide	Low	1	10	10 U	µg/L	
591-78-6	2-hexanone	Low	1	10	10 U	µg/L	
108-90-7	CHLOROBENZENE	Low	1	10	10 U	µg/L	
100-41-4	ETHYLBENZENE	Low	1	10	10 U	µg/L	
1330-20-7	XYLENES (TOTAL)	Low	1	10	10 U	µg/L	
136777-61-2	M-,P-XYLENE	Low	1	10	10 U	µg/L	
95-47-6	O-XYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID:	**SWMU318-GW07**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0717-9**	Sampling Date/Time:	**03/18/2004 15:25**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method:	**CLP OLM04.2 V**					
100-42-5	STYRENE	Low	1	10	10 U	µg/L
75-25-2	BROMOFORM	Low	1	10	10 U	µg/L
98-82-8	ISOPROPYLBENZENE	Low	1	10	10 U	µg/L
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 U	µg/L
541-73-1	1,3-dichlorobenzene	Low	1	10	10 U	µg/L
106-46-7	1,4-dichlorobenzene	Low	1	10	10 U	µg/L
95-50-1	1,2-dichlorobenzene	Low	1	10	10 U	µg/L
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 U	µg/L
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 U	µg/L
79-20-9	METHYL ACETATE	Low	1	10	10 U	µg/L
108-87-2	METHYLCYCLOHEXANE	Low	1	10	10 U	µg/L

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-SB09-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **15** SDG ID: **2004-B**
Lab Sample ID: **WU0756-1** Sampling Date/Time: **03/22/2004 16:13** SDG Page:

Method: CLP OLM04.2 V

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	12 R	µg/Kg	*
74-87-3	CHLOROMETHANE	Low	1	10	12 R	µg/Kg	*
75-01-4	VINYL CHLORIDE	Low	1	10	12 R	µg/Kg	*
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	12 R	µg/Kg	*
541-73-1	1,3-dichlorobenzene	Low	1	10	12 R	µg/Kg	*
106-46-7	1,4-dichlorobenzene	Low	1	10	12 R	µg/Kg	*
95-50-1	1,2-dichlorobenzene	Low	1	10	12 R	µg/Kg	*
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	12 R	µg/Kg	*
120-82-1	1,2,4-trichlorobenzene	Low	1	10	12 R	µg/Kg	*
79-20-9	METHYL ACETATE	Low	1	10	12 R	µg/Kg	*
108-87-2	METHYLCYCLOHEXANE	Low	1	10	12 R	µg/Kg	*
74-83-9	BROMOMETHANE	Low	1	10	2 R	µg/Kg	*
75-00-3	CHLOROETHANE	Low	1	10	12 R	µg/Kg	*
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	6 R	µg/Kg	*
75-35-4	1,1-dichloroethene	Low	1	10	12 R	µg/Kg	*
75-15-0	CARBON DISULFIDE	Low	1	10	12 R	µg/Kg	*
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	12 R	µg/Kg	*
75-09-2	METHYLENE CHLORIDE	Low	1	10	23 R	µg/Kg	*
67-64-1	ACETONE	Low	1	10	8 R	µg/Kg	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	12 R	µg/Kg	*
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	12 R	µg/Kg	*
75-34-3	1,1-dichloroethane	Low	1	10	12 R	µg/Kg	*
156-59-2	CIS-1,2-DICHLOROETHENE	Low	1	10	12 R	µg/Kg	*
540-59-0	1,2-Dichloroethylene (total)	Low	1	10	12 R	µg/Kg	*
67-66-3	CHLOROFORM	Low	1	10	12 R	µg/Kg	*
56-23-5	CARBON TETRACHLORIDE	Low	1	10	12 R	µg/Kg	*
71-55-6	1,1,1-trichloroethane	Low	1	10	12 R	µg/Kg	*
78-93-3	2-butanone	Low	1	10	12 R	µg/Kg	*
71-43-2	BENZENE	Low	1	10	12 R	µg/Kg	*
110-82-7	CYCLOHEXANE	Low	1	10	12 R	µg/Kg	*
107-06-2	1,2-dichloroethane	Low	1	10	12 R	µg/Kg	*
79-01-6	TRICHLOROETHENE	Low	1	10	12 R	µg/Kg	*
78-87-5	1,2-dichloropropane	Low	1	10	12 R	µg/Kg	*
75-27-4	BROMODICHLOROMETHANE	Low	1	10	12 R	µg/Kg	*
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	12 R	µg/Kg	*
108-88-3	TOLUENE	Low	1	10	12 R	µg/Kg	*
108-10-1	4-methyl-2-pentanone	Low	1	10	12 R	µg/Kg	*
127-18-4	TETRACHLOROETHENE	Low	1	10	12 R	µg/Kg	*
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	12 R	µg/Kg	*
79-00-5	1,1,2-trichloroethane	Low	1	10	12 R	µg/Kg	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID:	**SWMU318-SB09-00**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**15**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0756-1**	Sampling Date/Time:	**03/22/2004 16:13**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	12 R	µg/Kg	*
106-93-4	Ethylene Dibromide	Low	1	10	12 R	µg/Kg	*
591-78-6	2-hexanone	Low	1	10	12 R	µg/Kg	*
108-90-7	CHLOROBENZENE	Low	1	10	12 R	µg/Kg	*
100-41-4	ETHYLBENZENE	Low	1	10	12 R	µg/Kg	*
1330-20-7	XYLENES (TOTAL)	Low	1	10	12 R	µg/Kg	*
136777-61-2	M-,P-XYLENE	Low	1	10	12 R	µg/Kg	*
95-47-6	O-XYLENE	Low	1	10	12 R	µg/Kg	*
100-42-5	STYRENE	Low	1	10	12 R	µg/Kg	*
75-25-2	BROMOFORM	Low	1	10	12 R	µg/Kg	*
98-82-8	ISOPROPYLBENZENE	Low	1	10	12 R	µg/Kg	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-SB09-00RE** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Re-extraction/Re-analysis** % Moisture: **15** SDG ID: **2004-B**
Lab Sample ID: **WU0756-1RA** Sampling Date/Time: **03/22/2004 16:13** SDG Page:

Method: CLP OLM04.2 V

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	12 U	µg/Kg	
74-87-3	CHLOROMETHANE	Low	1	10	12 U	µg/Kg	
75-01-4	VINYL CHLORIDE	Low	1	10	12 U	µg/Kg	
74-83-9	BROMOMETHANE	Low	1	10	12 U	µg/Kg	
75-00-3	CHLOROETHANE	Low	1	10	12 U	µg/Kg	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	2 J	µg/Kg	
75-35-4	1,1-dichloroethene	Low	1	10	12 U	µg/Kg	
75-15-0	CARBON DISULFIDE	Low	1	10	12 U	µg/Kg	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	12 U	µg/Kg	
75-09-2	METHYLENE CHLORIDE	Low	1	10	23 UJ	µg/Kg	*
67-64-1	ACETONE	Low	1	10	12 UJ	µg/Kg	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	12 U	µg/Kg	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	12 U	µg/Kg	
75-34-3	1,1-dichloroethane	Low	1	10	12 U	µg/Kg	
156-59-2	CIS-1,2-DICHLOROETHENE	Low	1	10	12 U	µg/Kg	
540-59-0	1,2-Dichloroethylene (total)	Low	1	10	12 U	µg/Kg	
67-66-3	CHLOROFORM	Low	1	10	12 U	µg/Kg	
56-23-5	CARBON TETRACHLORIDE	Low	1	10	12 U	µg/Kg	
71-55-6	1,1,1-trichloroethane	Low	1	10	12 U	µg/Kg	
78-93-3	2-butanone	Low	1	10	12 U	µg/Kg	
71-43-2	BENZENE	Low	1	10	12 U	µg/Kg	
110-82-7	CYCLOHEXANE	Low	1	10	12 U	µg/Kg	
107-06-2	1,2-dichloroethane	Low	1	10	12 U	µg/Kg	
79-01-6	TRICHLOROETHENE	Low	1	10	12 U	µg/Kg	
78-87-5	1,2-dichloropropane	Low	1	10	12 U	µg/Kg	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	12 U	µg/Kg	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	12 U	µg/Kg	
108-88-3	TOLUENE	Low	1	10	12 U	µg/Kg	
108-10-1	4-methyl-2-pentanone	Low	1	10	12 U	µg/Kg	
127-18-4	TETRACHLOROETHENE	Low	1	10	12 U	µg/Kg	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	12 U	µg/Kg	
79-00-5	1,1,2-trichloroethane	Low	1	10	12 U	µg/Kg	
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	12 U	µg/Kg	
106-93-4	Ethylene Dibromide	Low	1	10	12 U	µg/Kg	
591-78-6	2-hexanone	Low	1	10	12 U	µg/Kg	
108-90-7	CHLOROBENZENE	Low	1	10	12 U	µg/Kg	
100-41-4	ETHYLBENZENE	Low	1	10	12 U	µg/Kg	
1330-20-7	XYLENES (TOTAL)	Low	1	10	12 U	µg/Kg	
136777-61-2	M-,P-XYLENE	Low	1	10	12 U	µg/Kg	
95-47-6	O-XYLENE	Low	1	10	12 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID:	**SWMU318-SB09-00RE**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Re-extraction/Re-analysis**	% Moisture:	**15**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0756-1RA**	Sampling Date/Time:	**03/22/2004 16:13**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method:	**CLP OLM04.2 V**					
100-42-5	STYRENE	Low	1	10	12 U	µg/Kg
75-25-2	BROMOFORM	Low	1	10	12 U	µg/Kg
98-82-8	ISOPROPYLBENZENE	Low	1	10	12 U	µg/Kg
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	12 U	µg/Kg
541-73-1	1,3-dichlorobenzene	Low	1	10	12 U	µg/Kg
106-46-7	1,4-dichlorobenzene	Low	1	10	12 U	µg/Kg
95-50-1	1,2-dichlorobenzene	Low	1	10	12 U	µg/Kg
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	12 U	µg/Kg
120-82-1	1,2,4-trichlorobenzene	Low	1	10	12 U	µg/Kg
79-20-9	METHYL ACETATE	Low	1	10	12 U	µg/Kg
108-87-2	METHYLCYCLOHEXANE	Low	1	10	12 U	µg/Kg

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-GW01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-2** Sampling Date/Time: **03/19/2004 9:05** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10 U	µg/L	
74-87-3	CHLOROMETHANE	Low	1	10	10 U	µg/L	
75-01-4	VINYL CHLORIDE	Low	1	10	10 U	µg/L	
74-83-9	BROMOMETHANE	Low	1	10	10 U	µg/L	
75-00-3	CHLOROETHANE	Low	1	10	10 U	µg/L	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10 U	µg/L	
75-35-4	1,1-dichloroethene	Low	1	10	10 U	µg/L	
75-15-0	CARBON DISULFIDE	Low	1	10	10 U	µg/L	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	10 U	µg/L	
75-09-2	METHYLENE CHLORIDE	Low	1	10	10 U	µg/L	
67-64-1	ACETONE	Low	1	10	10 UJ	µg/L	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	10 U	µg/L	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10 U	µg/L	
75-34-3	1,1-dichloroethane	Low	1	10	10 U	µg/L	
156-59-2	CIS-1,2-DICHLOROETHENE	Low	1	10	2 J	µg/L	
540-59-0	1,2-Dichloroethylene (total)	Low	1	10	2 J	µg/L	
67-66-3	CHLOROFORM	Low	1	10	10 U	µg/L	
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10 U	µg/L	
71-55-6	1,1,1-trichloroethane	Low	1	10	10 U	µg/L	
78-93-3	2-butanone	Low	1	10	10 UJ	µg/L	*
71-43-2	BENZENE	Low	1	10	10 U	µg/L	
110-82-7	CYCLOHEXANE	Low	1	10	10 U	µg/L	
107-06-2	1,2-dichloroethane	Low	1	10	10 U	µg/L	
79-01-6	TRICHLOROETHENE	Low	1	10	10 U	µg/L	
78-87-5	1,2-dichloropropane	Low	1	10	10 U	µg/L	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10 U	µg/L	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
108-88-3	TOLUENE	Low	1	10	10 U	µg/L	
108-10-1	4-methyl-2-pentanone	Low	1	10	10 U	µg/L	
127-18-4	TETRACHLOROETHENE	Low	1	10	10 U	µg/L	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
79-00-5	1,1,2-trichloroethane	Low	1	10	10 U	µg/L	
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10 U	µg/L	
106-93-4	Ethylene Dibromide	Low	1	10	10 U	µg/L	
591-78-6	2-hexanone	Low	1	10	10 U	µg/L	
108-90-7	CHLOROBENZENE	Low	1	10	10 U	µg/L	
100-41-4	ETHYLBENZENE	Low	1	10	1 J	µg/L	
1330-20-7	XYLENES (TOTAL)	Low	1	10	10 U	µg/L	
136777-61-2	M-,P-XYLENE	Low	1	10	10 U	µg/L	
95-47-6	O-XYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID:	**SWMU318-GW01**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0757-2**	Sampling Date/Time:	**03/19/2004 9:05**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method:	**CLP OLM04.2 V**					
100-42-5	STYRENE	Low	1	10	10 U	µg/L
75-25-2	BROMOFORM	Low	1	10	10 U	µg/L
98-82-8	ISOPROPYLBENZENE	Low	1	10	2 J	µg/L
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 U	µg/L
541-73-1	1,3-dichlorobenzene	Low	1	10	10 U	µg/L
106-46-7	1,4-dichlorobenzene	Low	1	10	10 U	µg/L
95-50-1	1,2-dichlorobenzene	Low	1	10	10 U	µg/L
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 U	µg/L
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 U	µg/L
79-20-9	METHYL ACETATE	Low	1	10	10 U	µg/L
108-87-2	METHYLCYCLOHEXANE	Low	1	10	1 J	µg/L

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J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-GW10-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-6** Sampling Date/Time: **03/20/2004 12:15** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10 U	µg/L	*
74-87-3	CHLOROMETHANE	Low	1	10	10 U	µg/L	
75-01-4	VINYL CHLORIDE	Low	1	10	140	µg/L	
74-83-9	BROMOMETHANE	Low	1	10	10 U	µg/L	
75-00-3	CHLOROETHANE	Low	1	10	10 U	µg/L	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10 U	µg/L	
75-35-4	1,1-dichloroethene	Low	1	10	4 J	µg/L	
75-15-0	CARBON DISULFIDE	Low	1	10	10 U	µg/L	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	180	µg/L	
75-09-2	METHYLENE CHLORIDE	Low	1	10	10 U	µg/L	
67-64-1	ACETONE	Low	1	10	10 UJ	µg/L	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	6 J	µg/L	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10 U	µg/L	
75-34-3	1,1-dichloroethane	Low	1	10	10 U	µg/L	
156-59-2	CIS-1,2-DICHLOROETHENE	Low	10	100	670 D	µg/L	*
540-59-0	1,2-Dichloroethylene (total)	Low	10	100	670 D	µg/L	*
67-66-3	CHLOROFORM	Low	1	10	10 U	µg/L	
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10 U	µg/L	
71-55-6	1,1,1-trichloroethane	Low	1	10	10 U	µg/L	
78-93-3	2-butanone	Low	1	10	10 UJ	µg/L	*
71-43-2	BENZENE	Low	1	10	2 J	µg/L	
110-82-7	CYCLOHEXANE	Low	1	10	10 U	µg/L	
107-06-2	1,2-dichloroethane	Low	1	10	10 U	µg/L	
79-01-6	TRICHLOROETHENE	Low	10	100	1,200 D	µg/L	*
78-87-5	1,2-dichloropropane	Low	1	10	10 U	µg/L	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10 U	µg/L	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
108-88-3	TOLUENE	Low	1	10	33	µg/L	
108-10-1	4-methyl-2-pentanone	Low	1	10	10 U	µg/L	
127-18-4	TETRACHLOROETHENE	Low	1	10	10 U	µg/L	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
79-00-5	1,1,2-trichloroethane	Low	1	10	10 U	µg/L	
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10 U	µg/L	
106-93-4	Ethylene Dibromide	Low	1	10	10 U	µg/L	
591-78-6	2-hexanone	Low	1	10	10 U	µg/L	
108-90-7	CHLOROBENZENE	Low	1	10	10 U	µg/L	
100-41-4	ETHYLBENZENE	Low	1	10	3 J	µg/L	
1330-20-7	XYLENES (TOTAL)	Low	1	10	8 J	µg/L	
136777-61-2	M-,P-XYLENE	Low	1	10	5 J	µg/L	
95-47-6	O-XYLENE	Low	1	10	4 J	µg/L	

U - Non-detected
J - Estimated
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R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID:	**SWMU318-GW10-01**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0757-6**	Sampling Date/Time:	**03/20/2004 12:15**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method:	**CLP OLM04.2 V**					
100-42-5	STYRENE	Low	1	10	10 U	µg/L
75-25-2	BROMOFORM	Low	1	10	10 U	µg/L
98-82-8	ISOPROPYLBENZENE	Low	1	10	10 U	µg/L
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 U	µg/L
541-73-1	1,3-dichlorobenzene	Low	1	10	10 U	µg/L
106-46-7	1,4-dichlorobenzene	Low	1	10	10 U	µg/L
95-50-1	1,2-dichlorobenzene	Low	1	10	10 U	µg/L
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 U	µg/L
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 U	µg/L
79-20-9	METHYL ACETATE	Low	1	10	10 U	µg/L
108-87-2	METHYLCYCLOHEXANE	Low	1	10	10 U	µg/L

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-GW10-01DL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-6DL** Sampling Date/Time: **03/20/2004 0:00** SDG Page:

Method: CLP OLM04.2 V

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
75-71-8	DICHLORODIFLUOROMETHANE	Low	10	10	100	R	µg/L	*
74-87-3	CHLOROMETHANE	Low	10	10	100	R	µg/L	*
75-01-4	VINYL CHLORIDE	Low	10	10	140	R	µg/L	*
74-83-9	BROMOMETHANE	Low	10	10	100	R	µg/L	*
75-00-3	CHLOROETHANE	Low	10	10	100	R	µg/L	*
75-69-4	TRICHLOROFLUOROMETHANE	Low	10	10	100	R	µg/L	*
75-35-4	1,1-dichloroethene	Low	10	10	100	R	µg/L	*
75-15-0	CARBON DISULFIDE	Low	10	10	100	R	µg/L	*
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	10	10	150	R	µg/L	*
75-09-2	METHYLENE CHLORIDE	Low	10	10	30	R	µg/L	*
67-64-1	ACETONE	Low	10	10	100	R	µg/L	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	10	10	100	R	µg/L	*
1634-04-4	METHYL TERT-BUTYL ETHER	Low	10	10	100	R	µg/L	*
75-34-3	1,1-dichloroethane	Low	10	10	100	R	µg/L	*
156-59-2	CIS-1,2-DICHLOROETHENE	Low	10	10	670	R	µg/L	*
540-59-0	1,2-Dichloroethylene (total)	Low	10	10	670	R	µg/L	*
67-66-3	CHLOROFORM	Low	10	10	100	R	µg/L	*
56-23-5	CARBON TETRACHLORIDE	Low	10	10	100	R	µg/L	*
71-55-6	1,1,1-trichloroethane	Low	10	10	100	R	µg/L	*
78-93-3	2-butanone	Low	10	10	100	R	µg/L	*
71-43-2	BENZENE	Low	10	10	100	R	µg/L	*
110-82-7	CYCLOHEXANE	Low	10	10	100	R	µg/L	*
107-06-2	1,2-dichloroethane	Low	10	10	100	R	µg/L	*
79-01-6	TRICHLOROETHENE	Low	10	10	1,200	R	µg/L	*
78-87-5	1,2-dichloropropane	Low	10	10	100	R	µg/L	*
75-27-4	BROMODICHLOROMETHANE	Low	10	10	100	R	µg/L	*
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	10	10	100	R	µg/L	*
108-88-3	TOLUENE	Low	10	10	31	R	µg/L	*
108-10-1	4-methyl-2-pentanone	Low	10	10	100	R	µg/L	*
127-18-4	TETRACHLOROETHENE	Low	10	10	100	R	µg/L	*
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	10	10	100	R	µg/L	*
79-00-5	1,1,2-trichloroethane	Low	10	10	100	R	µg/L	*
124-48-1	DIBROMOCHLOROMETHANE	Low	10	10	100	R	µg/L	*
106-93-4	Ethylene Dibromide	Low	10	10	100	R	µg/L	*
591-78-6	2-hexanone	Low	10	10	100	R	µg/L	*
108-90-7	CHLOROBENZENE	Low	10	10	100	R	µg/L	*
100-41-4	ETHYLBENZENE	Low	10	10	100	R	µg/L	*
1330-20-7	XYLENES (TOTAL)	Low	10	10	100	R	µg/L	*
136777-61-2	M-,P-XYLENE	Low	10	10	100	R	µg/L	*
95-47-6	O-XYLENE	Low	10	10	100	R	µg/L	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID:	**SWMU318-GW10-01DL**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample Dilution**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0757-6DL**	Sampling Date/Time:	**03/20/2004 0:00**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
Method:	**CLP OLM04.2 V**							
100-42-5	STYRENE	Low	10	10	100	R	µg/L	*
75-25-2	BROMOFORM	Low	10	10	100	R	µg/L	*
98-82-8	ISOPROPYLBENZENE	Low	10	10	100	R	µg/L	*
79-34-5	1,1,2,2-tetrachloroethane	Low	10	10	100	R	µg/L	*
541-73-1	1,3-dichlorobenzene	Low	10	10	100	R	µg/L	*
106-46-7	1,4-dichlorobenzene	Low	10	10	100	R	µg/L	*
95-50-1	1,2-dichlorobenzene	Low	10	10	100	R	µg/L	*
96-12-8	1,2-dibromo-3-chloropropane	Low	10	10	100	R	µg/L	*
120-82-1	1,2,4-trichlorobenzene	Low	10	10	100	R	µg/L	*
79-20-9	METHYL ACETATE	Low	10	10	100	R	µg/L	*
108-87-2	METHYLCYCLOHEXANE	Low	10	10	100	R	µg/L	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-GW13RE** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Re-extraction/Re-analysis** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-7RA** Sampling Date/Time: **03/20/2004 0:00** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10 U	µg/L	
74-87-3	CHLOROMETHANE	Low	1	10	10 U	µg/L	
75-01-4	VINYL CHLORIDE	Low	1	10	10 U	µg/L	
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 U	µg/L	
541-73-1	1,3-dichlorobenzene	Low	1	10	10 U	µg/L	
106-46-7	1,4-dichlorobenzene	Low	1	10	10 U	µg/L	
95-50-1	1,2-dichlorobenzene	Low	1	10	10 U	µg/L	
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 R	µg/L	*
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 U	µg/L	
79-20-9	METHYL ACETATE	Low	1	10	10 U	µg/L	
108-87-2	METHYLCYCLOHEXANE	Low	1	10	10 U	µg/L	
74-83-9	BROMOMETHANE	Low	1	10	10 U	µg/L	
75-00-3	CHLOROETHANE	Low	1	10	10 U	µg/L	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10 U	µg/L	
75-35-4	1,1-dichloroethene	Low	1	10	10 U	µg/L	
75-15-0	CARBON DISULFIDE	Low	1	10	10 U	µg/L	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	54	µg/L	
75-09-2	METHYLENE CHLORIDE	Low	1	10	10 U	µg/L	
67-64-1	ACETONE	Low	1	10	10 U	µg/L	
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	10 U	µg/L	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10 U	µg/L	
75-34-3	1,1-dichloroethane	Low	1	10	10 U	µg/L	
156-59-2	CIS-1,2-DICHLOROETHENE	Low	1	10	19	µg/L	
540-59-0	1,2-Dichloroethylene (total)	Low	1	10	19	µg/L	
67-66-3	CHLOROFORM	Low	1	10	10 U	µg/L	
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10 U	µg/L	
71-55-6	1,1,1-trichloroethane	Low	1	10	10 U	µg/L	
78-93-3	2-butanone	Low	1	10	10 U	µg/L	
71-43-2	BENZENE	Low	1	10	10 U	µg/L	
110-82-7	CYCLOHEXANE	Low	1	10	10 U	µg/L	
107-06-2	1,2-dichloroethane	Low	1	10	10 U	µg/L	
79-01-6	TRICHLOROETHENE	Low	1	10	57	µg/L	
78-87-5	1,2-dichloropropane	Low	1	10	10 U	µg/L	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10 U	µg/L	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
108-88-3	TOLUENE	Low	1	10	10 U	µg/L	
108-10-1	4-methyl-2-pentanone	Low	1	10	10 U	µg/L	
127-18-4	TETRACHLOROETHENE	Low	1	10	10 U	µg/L	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
79-00-5	1,1,2-trichloroethane	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID:	**SWMU318-GW13RE**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Re-extraction/Re-analysis**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0757-7RA**	Sampling Date/Time:	**03/20/2004 0:00**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method: CLP OLM04.2 V						
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10 U	µg/L
106-93-4	Ethylene Dibromide	Low	1	10	10 U	µg/L
591-78-6	2-hexanone	Low	1	10	10 U	µg/L
108-90-7	CHLOROBENZENE	Low	1	10	10 U	µg/L
100-41-4	ETHYLBENZENE	Low	1	10	10 U	µg/L
1330-20-7	XYLENES (TOTAL)	Low	1	10	10 U	µg/L
136777-61-2	M-,P-XYLENE	Low	1	10	10 U	µg/L
95-47-6	O-XYLENE	Low	1	10	10 U	µg/L
100-42-5	STYRENE	Low	1	10	10 U	µg/L
75-25-2	BROMOFORM	Low	1	10	10 U	µg/L
98-82-8	ISOPROPYLBENZENE	Low	1	10	10 U	µg/L

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-MW01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-10** Sampling Date/Time: **04/03/2004 16:05** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10 U	µg/L	
74-87-3	CHLOROMETHANE	Low	1	10	10 U	µg/L	
75-01-4	VINYL CHLORIDE	Low	1	10	10 U	µg/L	
74-83-9	BROMOMETHANE	Low	1	10	10 U	µg/L	
75-00-3	CHLOROETHANE	Low	1	10	10 U	µg/L	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10 U	µg/L	
75-35-4	1,1-dichloroethene	Low	1	10	10 U	µg/L	
75-15-0	CARBON DISULFIDE	Low	1	10	1 J	µg/L	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	10 U	µg/L	
75-09-2	METHYLENE CHLORIDE	Low	1	10	10 U	µg/L	
67-64-1	ACETONE	Low	1	10	10 UJ	µg/L	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	10 U	µg/L	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10 U	µg/L	
75-34-3	1,1-dichloroethane	Low	1	10	10 U	µg/L	
156-59-2	CIS-1,2-DICHLOROETHENE	Low	1	10	1 J	µg/L	
540-59-0	1,2-Dichloroethylene (total)	Low	1	10	1 J	µg/L	
67-66-3	CHLOROFORM	Low	1	10	10 U	µg/L	*
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10 U	µg/L	
71-55-6	1,1,1-trichloroethane	Low	1	10	10 U	µg/L	
78-93-3	2-butanone	Low	1	10	10 UJ	µg/L	*
71-43-2	BENZENE	Low	1	10	10 U	µg/L	
110-82-7	CYCLOHEXANE	Low	1	10	10 U	µg/L	
107-06-2	1,2-dichloroethane	Low	1	10	10 U	µg/L	
79-01-6	TRICHLOROETHENE	Low	1	10	10 U	µg/L	
78-87-5	1,2-dichloropropane	Low	1	10	10 U	µg/L	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10 U	µg/L	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
108-88-3	TOLUENE	Low	1	10	10 U	µg/L	
108-10-1	4-methyl-2-pentanone	Low	1	10	10 U	µg/L	
127-18-4	TETRACHLOROETHENE	Low	1	10	10 U	µg/L	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
79-00-5	1,1,2-trichloroethane	Low	1	10	10 U	µg/L	
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10 U	µg/L	
106-93-4	Ethylene Dibromide	Low	1	10	10 U	µg/L	
591-78-6	2-hexanone	Low	1	10	10 UJ	µg/L	*
108-90-7	CHLOROBENZENE	Low	1	10	10 U	µg/L	
100-41-4	ETHYLBENZENE	Low	1	10	10 U	µg/L	
1330-20-7	XYLENES (TOTAL)	Low	1	10	10 U	µg/L	
136777-61-2	M-,P-XYLENE	Low	1	10	10 U	µg/L	
95-47-6	O-XYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID:	**SWMU318-MW01**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0894-10**	Sampling Date/Time:	**04/03/2004 16:05**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method:	**CLP OLM04.2 V**					
100-42-5	STYRENE	Low	1	10	10 U	µg/L
75-25-2	BROMOFORM	Low	1	10	10 U	µg/L
98-82-8	ISOPROPYLBENZENE	Low	1	10	10 U	µg/L
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 U	µg/L
541-73-1	1,3-dichlorobenzene	Low	1	10	10 U	µg/L
106-46-7	1,4-dichlorobenzene	Low	1	10	10 U	µg/L
95-50-1	1,2-dichlorobenzene	Low	1	10	10 U	µg/L
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 U	µg/L
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 U	µg/L
79-20-9	METHYL ACETATE	Low	1	10	10 U	µg/L
108-87-2	METHYLCYCLOHEXANE	Low	1	10	10 U	µg/L

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-MW02** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-11** Sampling Date/Time: **04/04/2004 10:50** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10 U	µg/L	
74-87-3	CHLOROMETHANE	Low	1	10	10 U	µg/L	
75-01-4	VINYL CHLORIDE	Low	1	10	13	µg/L	
74-83-9	BROMOMETHANE	Low	1	10	10 U	µg/L	
75-00-3	CHLOROETHANE	Low	1	10	10 U	µg/L	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10 U	µg/L	
75-35-4	1,1-dichloroethene	Low	1	10	2 J	µg/L	
75-15-0	CARBON DISULFIDE	Low	1	10	10 U	µg/L	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	10 U	µg/L	
75-09-2	METHYLENE CHLORIDE	Low	1	10	10 U	µg/L	
67-64-1	ACETONE	Low	1	10	10 UJ	µg/L	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	2 J	µg/L	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10 U	µg/L	
75-34-3	1,1-dichloroethane	Low	1	10	10 U	µg/L	
156-59-2	CIS-1,2-DICHLOROETHENE	Low	1	10	120	µg/L	
540-59-0	1,2-Dichloroethylene (total)	Low	1	10	120	µg/L	
67-66-3	CHLOROFORM	Low	1	10	10 U	µg/L	
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10 U	µg/L	
71-55-6	1,1,1-trichloroethane	Low	1	10	10 U	µg/L	
78-93-3	2-butanone	Low	1	10	10 UJ	µg/L	*
71-43-2	BENZENE	Low	1	10	38	µg/L	
110-82-7	CYCLOHEXANE	Low	1	10	10 U	µg/L	
107-06-2	1,2-dichloroethane	Low	1	10	10 U	µg/L	
79-01-6	TRICHLOROETHENE	Low	5	50	240 D	µg/L	*
78-87-5	1,2-dichloropropane	Low	1	10	10 U	µg/L	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10 U	µg/L	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
108-88-3	TOLUENE	Low	1	10	10	µg/L	
108-10-1	4-methyl-2-pentanone	Low	1	10	10 U	µg/L	
127-18-4	TETRACHLOROETHENE	Low	1	10	10 U	µg/L	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
79-00-5	1,1,2-trichloroethane	Low	1	10	10 U	µg/L	
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10 U	µg/L	
106-93-4	Ethylene Dibromide	Low	1	10	10 U	µg/L	
591-78-6	2-hexanone	Low	1	10	10 UJ	µg/L	*
108-90-7	CHLOROBENZENE	Low	1	10	10 U	µg/L	
100-41-4	ETHYLBENZENE	Low	1	10	30	µg/L	
1330-20-7	XYLENES (TOTAL)	Low	1	10	27	µg/L	
136777-61-2	M-,P-XYLENE	Low	1	10	19	µg/L	
95-47-6	O-XYLENE	Low	1	10	8 J	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID:	**SWMU318-MW02**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0894-11**	Sampling Date/Time:	**04/04/2004 10:50**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method:	**CLP OLM04.2 V**					
100-42-5	STYRENE	Low	1	10	10 U	µg/L
75-25-2	BROMOFORM	Low	1	10	10 U	µg/L
98-82-8	ISOPROPYLBENZENE	Low	1	10	2 J	µg/L
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 U	µg/L
541-73-1	1,3-dichlorobenzene	Low	1	10	10 U	µg/L
106-46-7	1,4-dichlorobenzene	Low	1	10	10 U	µg/L
95-50-1	1,2-dichlorobenzene	Low	1	10	10 U	µg/L
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 U	µg/L
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 U	µg/L
79-20-9	METHYL ACETATE	Low	1	10	10 U	µg/L
108-87-2	METHYLCYCLOHEXANE	Low	1	10	10 U	µg/L

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N - Presumptively present
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-MW02DL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-11DL** Sampling Date/Time: **04/04/2004 10:50** SDG Page:

Method: CLP OLM04.2 V

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
75-71-8	DICHLORODIFLUOROMETHANE	Low	5	10	50	R	µg/L	*
74-87-3	CHLOROMETHANE	Low	5	10	50	R	µg/L	*
75-01-4	VINYL CHLORIDE	Low	5	10	6	R	µg/L	*
74-83-9	BROMOMETHANE	Low	5	10	50	R	µg/L	*
75-00-3	CHLOROETHANE	Low	5	10	50	R	µg/L	*
75-69-4	TRICHLOROFLUOROMETHANE	Low	5	10	50	R	µg/L	*
75-35-4	1,1-dichloroethene	Low	5	10	50	R	µg/L	*
75-15-0	CARBON DISULFIDE	Low	5	10	50	R	µg/L	*
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	5	10	50	R	µg/L	*
75-09-2	METHYLENE CHLORIDE	Low	5	10	22	R	µg/L	*
67-64-1	ACETONE	Low	5	10	50	R	µg/L	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	5	10	50	R	µg/L	*
1634-04-4	METHYL TERT-BUTYL ETHER	Low	5	10	50	R	µg/L	*
75-34-3	1,1-dichloroethane	Low	5	10	50	R	µg/L	*
156-59-2	CIS-1,2-DICHLOROETHENE	Low	5	10	110	R	µg/L	*
540-59-0	1,2-Dichloroethylene (total)	Low	5	10	110	R	µg/L	*
67-66-3	CHLOROFORM	Low	5	10	50	R	µg/L	*
56-23-5	CARBON TETRACHLORIDE	Low	5	10	50	R	µg/L	*
71-55-6	1,1,1-trichloroethane	Low	5	10	50	R	µg/L	*
78-93-3	2-butanone	Low	5	10	50	R	µg/L	*
71-43-2	BENZENE	Low	5	10	33	R	µg/L	*
110-82-7	CYCLOHEXANE	Low	5	10	50	R	µg/L	*
107-06-2	1,2-dichloroethane	Low	5	10	50	R	µg/L	*
79-01-6	TRICHLOROETHENE	Low	5	10	240	R	µg/L	*
78-87-5	1,2-dichloropropane	Low	5	10	50	R	µg/L	*
75-27-4	BROMODICHLOROMETHANE	Low	5	10	50	R	µg/L	*
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	5	10	50	R	µg/L	*
108-88-3	TOLUENE	Low	5	10	9	R	µg/L	*
108-10-1	4-methyl-2-pentanone	Low	5	10	50	R	µg/L	*
127-18-4	TETRACHLOROETHENE	Low	5	10	50	R	µg/L	*
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	5	10	50	R	µg/L	*
79-00-5	1,1,2-trichloroethane	Low	5	10	50	R	µg/L	*
124-48-1	DIBROMOCHLOROMETHANE	Low	5	10	50	R	µg/L	*
106-93-4	Ethylene Dibromide	Low	5	10	50	R	µg/L	*
591-78-6	2-hexanone	Low	5	10	50	R	µg/L	*
108-90-7	CHLOROBENZENE	Low	5	10	50	R	µg/L	*
100-41-4	ETHYLBENZENE	Low	5	10	26	R	µg/L	*
1330-20-7	XYLENES (TOTAL)	Low	5	10	24	R	µg/L	*
136777-61-2	M-,P-XYLENE	Low	5	10	16	R	µg/L	*
95-47-6	O-XYLENE	Low	5	10	7	R	µg/L	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

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Client Sample ID: **SWMU318-MW02DL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-11DL** Sampling Date/Time: **04/04/2004 10:50** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
100-42-5	STYRENE	Low	5	10	50 R	µg/L	*
75-25-2	BROMOFORM	Low	5	10	50 R	µg/L	*
98-82-8	ISOPROPYLBENZENE	Low	5	10	50 R	µg/L	*
79-34-5	1,1,2,2-tetrachloroethane	Low	5	10	50 R	µg/L	*
541-73-1	1,3-dichlorobenzene	Low	5	10	50 R	µg/L	*
106-46-7	1,4-dichlorobenzene	Low	5	10	50 R	µg/L	*
95-50-1	1,2-dichlorobenzene	Low	5	10	50 R	µg/L	*
96-12-8	1,2-dibromo-3-chloropropane	Low	5	10	50 R	µg/L	*
120-82-1	1,2,4-trichlorobenzene	Low	5	10	50 R	µg/L	*
79-20-9	METHYL ACETATE	Low	5	10	50 R	µg/L	*
108-87-2	METHYLCYCLOHEXANE	Low	5	10	50 R	µg/L	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
RL - Reporting limit
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
E - Exceeds calibration limits
***** - Modification by data validation

Client Sample ID: **SWMU318-MW03** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-13** Sampling Date/Time: **04/04/2004 12:30** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
Method:	**CLP OLM04.2 V**							
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10	U	µg/L	
74-87-3	CHLOROMETHANE	Low	1	10	10	U	µg/L	
75-01-4	VINYL CHLORIDE	Low	1	10	96		µg/L	
74-83-9	BROMOMETHANE	Low	1	10	10	U	µg/L	
75-00-3	CHLOROETHANE	Low	1	10	10	U	µg/L	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10	U	µg/L	
75-35-4	1,1-dichloroethene	Low	1	10	10	U	µg/L	
75-15-0	CARBON DISULFIDE	Low	1	10	10	U	µg/L	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	180		µg/L	
75-09-2	METHYLENE CHLORIDE	Low	1	10	10	U	µg/L	
67-64-1	ACETONE	Low	1	10	10	UJ	µg/L	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	2	J	µg/L	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10	U	µg/L	
75-34-3	1,1-dichloroethane	Low	1	10	10	U	µg/L	
156-59-2	CIS-1,2-DICHLOROETHENE	Low	10	100	550	D	µg/L	*
540-59-0	1,2-Dichloroethylene (total)	Low	10	100	550	D	µg/L	*
67-66-3	CHLOROFORM	Low	1	10	10	U	µg/L	
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10	U	µg/L	
71-55-6	1,1,1-trichloroethane	Low	1	10	10	U	µg/L	
78-93-3	2-butanone	Low	1	10	10	UJ	µg/L	*
71-43-2	BENZENE	Low	1	10	1	J	µg/L	
110-82-7	CYCLOHEXANE	Low	1	10	10	U	µg/L	
107-06-2	1,2-dichloroethane	Low	1	10	10	U	µg/L	
79-01-6	TRICHLOROETHENE	Low	10	100	960	D	µg/L	*
78-87-5	1,2-dichloropropane	Low	1	10	10	U	µg/L	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10	U	µg/L	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10	U	µg/L	
108-88-3	TOLUENE	Low	1	10	28		µg/L	
108-10-1	4-methyl-2-pentanone	Low	1	10	10	U	µg/L	*
127-18-4	TETRACHLOROETHENE	Low	1	10	10	U	µg/L	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10	U	µg/L	
79-00-5	1,1,2-trichloroethane	Low	1	10	10	U	µg/L	
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10	U	µg/L	
106-93-4	Ethylene Dibromide	Low	1	10	10	U	µg/L	
591-78-6	2-hexanone	Low	1	10	10	UJ	µg/L	*
108-90-7	CHLOROBENZENE	Low	1	10	10	U	µg/L	
100-41-4	ETHYLBENZENE	Low	1	10	3	J	µg/L	
1330-20-7	XYLENES (TOTAL)	Low	1	10	7	J	µg/L	
136777-61-2	M-,P-XYLENE	Low	1	10	2	J	µg/L	
95-47-6	O-XYLENE	Low	1	10	5	J	µg/L	

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Client Sample ID:	**SWMU318-MW03**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0894-13**	Sampling Date/Time:	**04/04/2004 12:30**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method:	**CLP OLM04.2 V**					
100-42-5	STYRENE	Low	1	10	10 U	µg/L
75-25-2	BROMOFORM	Low	1	10	10 U	µg/L
98-82-8	ISOPROPYLBENZENE	Low	1	10	1 J	µg/L
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 U	µg/L
541-73-1	1,3-dichlorobenzene	Low	1	10	10 U	µg/L
106-46-7	1,4-dichlorobenzene	Low	1	10	10 U	µg/L
95-50-1	1,2-dichlorobenzene	Low	1	10	10 U	µg/L
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 U	µg/L
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 U	µg/L
79-20-9	METHYL ACETATE	Low	1	10	10 U	µg/L
108-87-2	METHYLCYCLOHEXANE	Low	1	10	12	µg/L

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B - (Lab qualifier) Found in the associated method blank
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Client Sample ID: **SWMU318-MW03DL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-13DL** Sampling Date/Time: **04/04/2004 0:00** SDG Page:

Method: CLP OLM04.2 V

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
75-71-8	DICHLORODIFLUOROMETHANE	Low	10	10	100	R	µg/L	*
74-87-3	CHLOROMETHANE	Low	10	10	100	R	µg/L	*
75-01-4	VINYL CHLORIDE	Low	10	10	85	R	µg/L	*
74-83-9	BROMOMETHANE	Low	10	10	100	R	µg/L	*
75-00-3	CHLOROETHANE	Low	10	10	100	R	µg/L	*
75-69-4	TRICHLOROFLUOROMETHANE	Low	10	10	100	R	µg/L	*
75-35-4	1,1-dichloroethene	Low	10	10	100	R	µg/L	*
75-15-0	CARBON DISULFIDE	Low	10	10	100	R	µg/L	*
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	10	10	160	R	µg/L	*
75-09-2	METHYLENE CHLORIDE	Low	10	10	58	R	µg/L	*
67-64-1	ACETONE	Low	10	10	100	R	µg/L	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	10	10	100	R	µg/L	*
1634-04-4	METHYL TERT-BUTYL ETHER	Low	10	10	100	R	µg/L	*
75-34-3	1,1-dichloroethane	Low	10	10	100	R	µg/L	*
156-59-2	CIS-1,2-DICHLOROETHENE	Low	10	10	550	R	µg/L	*
540-59-0	1,2-Dichloroethylene (total)	Low	10	10	550	R	µg/L	*
67-66-3	CHLOROFORM	Low	10	10	100	R	µg/L	*
56-23-5	CARBON TETRACHLORIDE	Low	10	10	100	R	µg/L	*
71-55-6	1,1,1-trichloroethane	Low	10	10	100	R	µg/L	*
78-93-3	2-butanone	Low	10	10	100	R	µg/L	*
71-43-2	BENZENE	Low	10	10	100	R	µg/L	*
110-82-7	CYCLOHEXANE	Low	10	10	100	R	µg/L	*
107-06-2	1,2-dichloroethane	Low	10	10	100	R	µg/L	*
79-01-6	TRICHLOROETHENE	Low	10	10	910	R	µg/L	*
78-87-5	1,2-dichloropropane	Low	10	10	100	R	µg/L	*
75-27-4	BROMODICHLOROMETHANE	Low	10	10	100	R	µg/L	*
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	10	10	100	R	µg/L	*
108-88-3	TOLUENE	Low	10	10	26	R	µg/L	*
108-10-1	4-methyl-2-pentanone	Low	10	10	100	R	µg/L	*
127-18-4	TETRACHLOROETHENE	Low	10	10	100	R	µg/L	*
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	10	10	100	R	µg/L	*
79-00-5	1,1,2-trichloroethane	Low	10	10	100	R	µg/L	*
124-48-1	DIBROMOCHLOROMETHANE	Low	10	10	100	R	µg/L	*
106-93-4	Ethylene Dibromide	Low	10	10	100	R	µg/L	*
591-78-6	2-hexanone	Low	10	10	100	R	µg/L	*
108-90-7	CHLOROBENZENE	Low	10	10	100	R	µg/L	*
100-41-4	ETHYLBENZENE	Low	10	10	100	R	µg/L	*
1330-20-7	XYLENES (TOTAL)	Low	10	10	100	R	µg/L	*
136777-61-2	M-,P-XYLENE	Low	10	10	100	R	µg/L	*
95-47-6	O-XYLENE	Low	10	10	100	R	µg/L	*

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Client Sample ID: **SWMU318-MW03DL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-13DL** Sampling Date/Time: **04/04/2004 0:00** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
100-42-5	STYRENE	Low	10	10	100 R	µg/L	*
75-25-2	BROMOFORM	Low	10	10	100 R	µg/L	*
98-82-8	ISOPROPYLBENZENE	Low	10	10	100 R	µg/L	*
79-34-5	1,1,2,2-tetrachloroethane	Low	10	10	100 R	µg/L	*
541-73-1	1,3-dichlorobenzene	Low	10	10	100 R	µg/L	*
106-46-7	1,4-dichlorobenzene	Low	10	10	100 R	µg/L	*
95-50-1	1,2-dichlorobenzene	Low	10	10	100 R	µg/L	*
96-12-8	1,2-dibromo-3-chloropropane	Low	10	10	100 R	µg/L	*
120-82-1	1,2,4-trichlorobenzene	Low	10	10	100 R	µg/L	*
79-20-9	METHYL ACETATE	Low	10	10	100 R	µg/L	*
108-87-2	METHYLCYCLOHEXANE	Low	10	10	100 R	µg/L	*

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TIC - Tentatively identified compound
E - Exceeds calibration limits
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Client Sample ID: **SWMU318-MW03D** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-14** Sampling Date/Time: **04/04/2004 12:30** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
75-71-8	DICHLORODIFLUOROMETHANE	Low	1	10	10 U	µg/L	
74-87-3	CHLOROMETHANE	Low	1	10	10 U	µg/L	
75-01-4	VINYL CHLORIDE	Low	1	10	88	µg/L	
74-83-9	BROMOMETHANE	Low	1	10	10 U	µg/L	
75-00-3	CHLOROETHANE	Low	1	10	10 U	µg/L	
75-69-4	TRICHLOROFLUOROMETHANE	Low	1	10	10 U	µg/L	
75-35-4	1,1-dichloroethene	Low	1	10	10 U	µg/L	
75-15-0	CARBON DISULFIDE	Low	1	10	10 U	µg/L	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	1	10	160	µg/L	
75-09-2	METHYLENE CHLORIDE	Low	1	10	10 U	µg/L	
67-64-1	ACETONE	Low	1	10	10 UJ	µg/L	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	1	10	1 J	µg/L	
1634-04-4	METHYL TERT-BUTYL ETHER	Low	1	10	10 U	µg/L	
75-34-3	1,1-dichloroethane	Low	1	10	10 U	µg/L	
156-59-2	CIS-1,2-DICHLOROETHENE	Low	10	100	590 D	µg/L	*
540-59-0	1,2-Dichloroethylene (total)	Low	10	100	590 D	µg/L	*
67-66-3	CHLOROFORM	Low	1	10	10 U	µg/L	
56-23-5	CARBON TETRACHLORIDE	Low	1	10	10 U	µg/L	
71-55-6	1,1,1-trichloroethane	Low	1	10	10 U	µg/L	
78-93-3	2-butanone	Low	1	10	10 UJ	µg/L	*
71-43-2	BENZENE	Low	1	10	10 U	µg/L	
110-82-7	CYCLOHEXANE	Low	1	10	10 U	µg/L	
107-06-2	1,2-dichloroethane	Low	1	10	10 U	µg/L	
79-01-6	TRICHLOROETHENE	Low	10	100	1,000 D	µg/L	*
78-87-5	1,2-dichloropropane	Low	1	10	10 U	µg/L	
75-27-4	BROMODICHLOROMETHANE	Low	1	10	10 U	µg/L	
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
108-88-3	TOLUENE	Low	1	10	28	µg/L	
108-10-1	4-methyl-2-pentanone	Low	1	10	10 U	µg/L	
127-18-4	TETRACHLOROETHENE	Low	1	10	10 U	µg/L	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	1	10	10 U	µg/L	
79-00-5	1,1,2-trichloroethane	Low	1	10	10 U	µg/L	
124-48-1	DIBROMOCHLOROMETHANE	Low	1	10	10 U	µg/L	
106-93-4	Ethylene Dibromide	Low	1	10	10 U	µg/L	
591-78-6	2-hexanone	Low	1	10	10 UJ	µg/L	*
108-90-7	CHLOROBENZENE	Low	1	10	10 U	µg/L	
100-41-4	ETHYLBENZENE	Low	1	10	3 J	µg/L	
1330-20-7	XYLENES (TOTAL)	Low	1	10	7 J	µg/L	
136777-61-2	M-,P-XYLENE	Low	1	10	2 J	µg/L	
95-47-6	O-XYLENE	Low	1	10	5 J	µg/L	

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Client Sample ID:	**SWMU318-MW03D**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0894-14**	Sampling Date/Time:	**04/04/2004 12:30**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method:	**CLP OLM04.2 V**					
100-42-5	STYRENE	Low	1	10	10 U	µg/L
75-25-2	BROMOFORM	Low	1	10	10 U	µg/L
98-82-8	ISOPROPYLBENZENE	Low	1	10	10 U	µg/L
79-34-5	1,1,2,2-tetrachloroethane	Low	1	10	10 U	µg/L
541-73-1	1,3-dichlorobenzene	Low	1	10	10 U	µg/L
106-46-7	1,4-dichlorobenzene	Low	1	10	10 U	µg/L
95-50-1	1,2-dichlorobenzene	Low	1	10	10 U	µg/L
96-12-8	1,2-dibromo-3-chloropropane	Low	1	10	10 U	µg/L
120-82-1	1,2,4-trichlorobenzene	Low	1	10	10 U	µg/L
79-20-9	METHYL ACETATE	Low	1	10	10 U	µg/L
108-87-2	METHYLCYCLOHEXANE	Low	1	10	10 U	µg/L

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Client Sample ID: **SWMU318-MW03DDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-14DL** Sampling Date/Time: **04/04/2004 0:00** SDG Page:

Method: CLP OLM04.2 V

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
75-71-8	DICHLORODIFLUOROMETHANE	Low	10	10	100	R	µg/L	*
74-87-3	CHLOROMETHANE	Low	10	10	100	R	µg/L	*
75-01-4	VINYL CHLORIDE	Low	10	10	91	R	µg/L	*
74-83-9	BROMOMETHANE	Low	10	10	100	R	µg/L	*
75-00-3	CHLOROETHANE	Low	10	10	100	R	µg/L	*
75-69-4	TRICHLOROFLUOROMETHANE	Low	10	10	100	R	µg/L	*
75-35-4	1,1-dichloroethene	Low	10	10	100	R	µg/L	*
75-15-0	CARBON DISULFIDE	Low	10	10	100	R	µg/L	*
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Low	10	10	170	R	µg/L	*
75-09-2	METHYLENE CHLORIDE	Low	10	10	52	R	µg/L	*
67-64-1	ACETONE	Low	10	10	100	R	µg/L	*
156-60-5	TRANS-1,2-DICHLOROETHENE	Low	10	10	100	R	µg/L	*
1634-04-4	METHYL TERT-BUTYL ETHER	Low	10	10	100	R	µg/L	*
75-34-3	1,1-dichloroethane	Low	10	10	100	R	µg/L	*
156-59-2	CIS-1,2-DICHLOROETHENE	Low	10	10	590	R	µg/L	*
540-59-0	1,2-Dichloroethylene (total)	Low	10	10	590	R	µg/L	*
67-66-3	CHLOROFORM	Low	10	10	100	R	µg/L	*
56-23-5	CARBON TETRACHLORIDE	Low	10	10	100	R	µg/L	*
71-55-6	1,1,1-trichloroethane	Low	10	10	100	R	µg/L	*
78-93-3	2-butanone	Low	10	10	100	R	µg/L	*
71-43-2	BENZENE	Low	10	10	100	R	µg/L	*
110-82-7	CYCLOHEXANE	Low	10	10	100	R	µg/L	*
107-06-2	1,2-dichloroethane	Low	10	10	100	R	µg/L	*
79-01-6	TRICHLOROETHENE	Low	10	10	1,000	R	µg/L	*
78-87-5	1,2-dichloropropane	Low	10	10	100	R	µg/L	*
75-27-4	BROMODICHLOROMETHANE	Low	10	10	100	R	µg/L	*
10061-01-5	CIS-1,3-DICHLOROPROPENE	Low	10	10	100	U	µg/L	
108-88-3	TOLUENE	Low	10	10	27	R	µg/L	*
108-10-1	4-methyl-2-pentanone	Low	10	10	100	R	µg/L	*
127-18-4	TETRACHLOROETHENE	Low	10	10	100	R	µg/L	*
10061-02-6	TRANS-1,3-DICHLOROPROPENE	Low	10	10	100	R	µg/L	*
79-00-5	1,1,2-trichloroethane	Low	10	10	100	R	µg/L	*
124-48-1	DIBROMOCHLOROMETHANE	Low	10	10	100	R	µg/L	*
106-93-4	Ethylene Dibromide	Low	10	10	100	R	µg/L	*
591-78-6	2-hexanone	Low	10	10	100	R	µg/L	*
108-90-7	CHLOROBENZENE	Low	10	10	100	R	µg/L	*
100-41-4	ETHYLBENZENE	Low	10	10	100	R	µg/L	*
1330-20-7	XYLENES (TOTAL)	Low	10	10	100	R	µg/L	*
136777-61-2	M-,P-XYLENE	Low	10	10	100	R	µg/L	*
95-47-6	O-XYLENE	Low	10	10	100	R	µg/L	*

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Client Sample ID: **SWMU318-MW03DDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-14DL** Sampling Date/Time: **04/04/2004 0:00** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 V**						
100-42-5	STYRENE	Low	10	10	100 R	µg/L	*
75-25-2	BROMOFORM	Low	10	10	100 R	µg/L	*
98-82-8	ISOPROPYLBENZENE	Low	10	10	100 R	µg/L	*
79-34-5	1,1,2,2-tetrachloroethane	Low	10	10	100 R	µg/L	*
541-73-1	1,3-dichlorobenzene	Low	10	10	100 R	µg/L	*
106-46-7	1,4-dichlorobenzene	Low	10	10	100 R	µg/L	*
95-50-1	1,2-dichlorobenzene	Low	10	10	100 R	µg/L	*
96-12-8	1,2-dibromo-3-chloropropane	Low	10	10	100 R	µg/L	*
120-82-1	1,2,4-trichlorobenzene	Low	10	10	100 R	µg/L	*
79-20-9	METHYL ACETATE	Low	10	10	100 R	µg/L	*
108-87-2	METHYLCYCLOHEXANE	Low	10	10	100 R	µg/L	*

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Marine Corp Base Camp Lejeune
AS Database
Site: SWMU 318

DATA VALIDATION REPORT

SDG: 2004-B

Prepared for:

CH2M HILL
Herndon , VA

Integrate Project Number: 10086

June, 2004

Integrate Data Validation Reporting Method

The purpose of this section is to give the data user an understanding of the ideas and concepts associated with data validation in general and with the Integrate , Inc.™ (Integrate) method of reporting validated data.

Analyte Level Validation Issues

Integrate has developed a method for reporting validated data which utilizes a presentation of laboratory data issues and validation issues. This technique is based on the concept that issues encountered in the validation of laboratory data affect individual analytes of a sample. For instance, determining that a detected analyte in a sample was the result of laboratory contamination will cause only that analyte to be qualified.

Integrate Codes: Standardizing the Description of Analytical Defects

Integrate has standardized the data validation process by developing a database of codes employed by our analysts to describe the various analytical defects that may occur with an analysis. Each code is associated with written text describing the problem and the qualification that may be applied. For instance, the code that would be applied to an analyte that was determined to be a result of laboratory contamination would be BC (Blank Contamination). A complete listing of the analyte qualification parameters and their respective codes are presented below in *Analyte Qualification Codes*.

Analyte Qualification Codes

- CO Comment
- HT Holding Time
- IC Initial Calibration
- CC Continuing Calibration
- BC Blank Contamination
- MS Matrix Spike Effects
- TC Target Compound Identification
- CQ Compound Quantitation
- TI Tentatively Identified Compound
- SD System Monitoring Compound

- IS Internal Standard
- TU GC/MS Tune Criteria
- AS Analytical Sequence

Semivolatile Section Reporting Format

The Semivolatile Section of this data validation report is divided into 1) a text-formatted report which describes the contents of the laboratory data package and 2) a number of tabular reports which allow the data user to readily obtain information about the results of the data validation. Below is a description of the type of information contained in these tabular reports.

1) *Narrative of the Sample Delivery Group (SDG):* This section provides general information that pertains to the data package, such as the date of receipt, the number and type of samples, the laboratory performing the analysis, the instrumentation utilized to perform the analysis, the method of analysis, and the number and type of quality control parameters reported by the laboratory. Additionally, any other pertinent issues dealing with the laboratory or the data package may be noted in this section.

2) ***Table SV 1*** *Summary of Semivolatile Data Validation Issues*: This table represents a bulleted summary of all semivolatile samples that were validated for analyte level defects and provides a quick view of any issues that were associated with this sample delivery group. A bullet represents the assignment of a comment and/or qualifier by the data validator for a specific sample. The nature of a qualification can be found in ***Table SV 2*** *Semivolatile Analyte Qualification Summary*.

3) ***Table SV 2*** *Semivolatile Analyte Qualification Summary*: This tabular report displays all of the analyte-level data validation issues checked (*Analyte Qualification Codes*). The table indicates the client sample name, the analyte that has been qualified, the qualification code, the lab result and its qualifier and units, the validated result and the validation qualifier and units. Explanations of the actions taken by the validator are explained in ***Table SV 3*** *Semivolatile Analyte Qualification Comments.*

4) ***Table SV 3*** *Semivolatile Analyte Qualification Comments:* This report contains an explanation of each problem and any qualification which was documented in ***Table SV 2*** *Semivolatile Analyte Qualification Summary*.

5) ***Table SV 4*** *Validated Semivolatile Results*: This report displays all the analytical and validated information in a one-sample per-page view. It includes the semivolatile analyte list, analytical extraction level, dilution factor, method quantitation limits per analyte, the results for each analyte and the units of measure for each analyte.

Narrative of Sample Delivery Group (SDG): 2004-B

On May 14 and May 25, 2004 Integrate, Inc. received one data package containing the results for forty seven site samples which were analyzed by Katahdin Analytical Services, Inc. for semi-volatile organic analyses. The laboratory utilized a gas chromatograph/mass spectrometer (GC/MS) fitted with a capillary column in accordance with USEPA CLP Method OLMO 4.2. The following quality control parameters were reported in the data package:

Laboratory QC

- 2 initial calibration(s)
- 10 continuing calibration(s)
- 8 method blank(s)
- 3 matrix spike(s)
- 3 matrix spike duplicate(s)
- 8 laboratory control spike(s)
- 4 laboratory control sample duplicate(s)

Notes:

1. The ice chests were received at a temperature of < 2 degrees Celcius. The samples were not frozen nor adversely affected. No further qualification was deemed necessary.
2. All field quality control samples are reported in a QA database data validation report.
3. The % RSD for Benzaldehyde and 4-Nitroaniline are 42.3% and 31.8% respectively in the initial calibration analyzed on instrument U on April 23, 2004.
4. The % RSD for Benzldehyde, Hexachlorocyclopentadiene and 4-Nitroaniline are 35.9%, 36.7% and 31.0% respectively in the initial calibration analyzed on insrument U on March 30, 2004.
5. Various semivolatile runlog pages lacked an analyst or a reviewer signature.
6. All laboratory quality control samples associated with sample SWMU318-GW14-01 and SWMU318-GW04-01DL were not spiked with surrogate spiking compounds.

7. SWMU318-GW13 was analyzed for semivolatile analysis but the chain of custody requested volatile analysis.
8. One chain of custody in SDG WUO691 was not signed by the laboratory upon sample receipt.
9. GPC clean up was performed on all soil samples. This was confirmed via email from Maria Crouch at Katahdin Laboratory.

Lab: **KASW / KASW**

SDG ID: **2004-B**

	Analyte Qualification												
Client Sample	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS
SWMU318-GW01						•							
SWMU318-GW02						•		•					
SWMU318-GW02D						•		•					
SWMU318-GW03						•	•	•					
SWMU318-GW04						•		•					
SWMU318-GW05						•		•					
SWMU318-GW06-01			•			•		•					
SWMU318-GW06-01DLDL			•										
SWMU318-GW07-01			•									•	
SWMU318-GW07-01DLDL						•		•					•
SWMU318-GW08-01RE						•	•	•					
SWMU318-GW09-01						•							
SWMU318-GW10						•	•	•					
SWMU318-GW11-01						•	•	•					
SWMU318-GW12-01						•							
SWMU318-GW13						•	•	•					
SWMU318-GW14-01			•			•		•					
SWMU318-GW14-01DLDL			•										
SWMU318-GW14-01RE			•	•									
SWMU318-GW14-01REDLDL			•	•									
SWMU318-GW15			•			•							
SWMU318-GW15DLDL			•										
SWMU318-MW01						•		•					
SWMU318-MW02			•			•		•					
SWMU318-MW02D			•			•		•					
SWMU318-MW02DDLDL			•										
SWMU318-MW02DLDL			•										
SWMU318-MW03						•		•					
SWMU318-SB01-00						•	•	•					
SWMU318-SB01-04						•	•	•					
SWMU318-SB02-01						•	•	•					
SWMU318-SB02-01D						•		•					
SWMU318-SB02-04						•	•	•					
SWMU318-SB03-00						•							
SWMU318-SB03-01						•	•	•					
SWMU318-SB04-02						•	•	•					
SWMU318-SB04-04						•	•	•					
SWMU318-SB05-02						•	•						
SWMU318-SB05-02D						•	•						
SWMU318-SB05-03			•			•	•						
SWMU318-SB05-03DLDL			•										
SWMU318-SB06-01						•	•	•					
SWMU318-SB06-01D						•	•	•					
SWMU318-SB06-02						•	•	•					
SWMU318-SB07-00						•							

All samples were validated. A bullet (•) denotes sample qualification.

Analyte Qualification Codes:

TU - GC/MS tune time
AS - Analytical sequence
CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
BC - Blank contamination
MS - Matrix spike effects
TC - TCL compound ID
CQ - Compound/parameter quantitation
TI - Tentatively identified compound
SD - Surrogate deficiencies
IS - Internal standard

Lab: **KASW / KASW**

SDG ID: **2004-B**

	Analyte Qualification												
Client Sample	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS
SWMU318-SB07-02						•							
SWMU318-SB08-00			•									•	
SWMU318-SB08-00DLDL						•						•	
SWMU318-SB08-04						•							
SWMU318-SB09-00						•							
SWMU318-SB09-02						•							
SWMU318-SB10-00						•							
SWMU318-SB10-03RARE						•							
SWMU318-SB11-01						•							
SWMU318-SB11-03						•							
SWMU318-SB12-01						•							
SWMU318-SB12-04						•							

All samples were validated. A bullet (•) denotes sample qualification.

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
SWMU318-GW01																				
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
SWMU318-GW02																				
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
	4-NITROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
SWMU318-GW02D																				
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
	4-NITROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
SWMU318-GW03																				
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
	4-NITROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	8	-	-	-	-	-	-	5	J	µg/L	10	U	µg/L
SWMU318-GW04																				
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
	4-NITROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L

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BC - Blank contamination
MS - Matrix spike effects
TC - TCL compound ID
CQ - Compound/parameter quantitation
TI - Tentatively identified compound
SD - Surrogate deficiencies
IS - Internal standard

Analyte Qualifiers:

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
E - (Lab qualifier) Exceeds calibration range
S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
SWMU318-GW05																				
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
	4-NITROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
SWMU318-GW06-01																				
	2-methylphenol	-	-	5	-	-	-	-	-	-	-	-	-	-	380	E	µg/L	410	D	µg/L
	4-methylphenol	-	-	5	-	-	-	-	-	-	-	-	-	-	280	E	µg/L	250	DJ	µg/L
	2,4-dimethylphenol	-	-	5	-	-	-	-	-	-	-	-	-	-	10	U	µg/L	990	D	µg/L
	NAPHTHALENE	-	-	5	-	-	-	-	-	-	-	-	-	-	250	E	µg/L	2,100	D	µg/L
	2-methylnaphthalene	-	-	5	-	-	-	-	-	-	-	-	-	-	120	E	µg/L	480	D	µg/L
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
	ACENAPHTHENE	-	-	5	-	-	-	-	-	-	-	-	-	-	190	E	µg/L	280	DJ	µg/L
	4-NITROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
SWMU318-GW06-01DLDL																				
	BENZALDEHYDE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	PHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	BIS(2-CHLOROETHYL) ETHER	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	2-chlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	2-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	410		µg/L	410	R	µg/L
	2,2'-oxybis (1-chloropropane)	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	ACETOPHENONE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	4-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	250	J	µg/L	250	R	µg/L
	N-NITROSO-DI-N-PROPYLAMINE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	HEXACHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	NITROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L

Analyte Qualification Codes:

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E - (Lab qualifier) Exceeds calibration range
S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	ISOPHORONE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	2-nitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	2,4-dimethylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	990		µg/L	990	R	µg/L
	BIS(2-CHLOROETHOXY) METHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	2,4-dichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	NAPHTHALENE	-	-	3	-	-	-	-	-	-	-	-	-	-	2,100		µg/L	2,100	R	µg/L
	4-chloroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	HEXACHLOROBUTADIENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	CAPROLACTAM	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	4-chloro-3-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	2-methylnaphthalene	-	-	3	-	-	-	-	-	-	-	-	-	-	480		µg/L	480	R	µg/L
	HEXACHLOROCYCLOPENTADIENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	2,4,6-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	2,4,5-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	940	U	µg/L	940	R	µg/L
	1,1-Biphenyl	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	2-chloronaphthalene	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	2-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	940	U	µg/L	940	R	µg/L
	DIMETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	2,6-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	ACENAPHTHYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	3-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	940	U	µg/L	940	R	µg/L
	ACENAPHTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	280	J	µg/L	280	R	µg/L
	2,4-dinitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	940	U	µg/L	940	R	µg/L
	4-NITROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	940	U	µg/L	940	R	µg/L
	DIBENZOFURAN	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	2,4-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	DIETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	FLUORENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	4-chlorophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	4-NITROANILINE	-	-	3	-	-	-	-	-	-	-	-	-	-	940	U	µg/L	940	R	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	4,6-dinitro-2-methyl-phenol	-	-	3	-	-	-	-	-	-	-	-	-	-	940	U	µg/L	940	R	µg/L
	N-NITROSODIPHENYLAMINE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	4-bromophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	HEXACHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	ATRAZINE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	PENTACHLOROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	940	U	µg/L	940	R	µg/L
	PHENANTHRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	CARBAZOLE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	DI-N-BUTYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	BUTYL BENZYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	3,3'-dichlorobenzidine	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	BENZO(A)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	CHRYSENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	DI-N-OCTYLPHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	BENZO(B)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	BENZO(K)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	BENZO(A)PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	INDENO(1,2,3-CD)PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	DIBENZO(A,H)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
	BENZO[G,H,I]PERYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	380	U	µg/L	380	R	µg/L
SWMU318-GW07-01																				
	BENZALDEHYDE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	PHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	BIS(2-CHLOROETHYL) ETHER	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	2-chlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2,2'-oxybis (1-chloropropane)	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	U	µg/L
	ACETOPHENONE	-	-	3	-	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	4-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	N-NITROSO-DI-N-PROPYLAMINE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	HEXACHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	NITROBENZENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	ISOPHORONE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	2-nitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2,4-dimethylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	12		µg/L	12	R	µg/L
	BIS(2-CHLOROETHOXY) METHANE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	2,4-dichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	NAPHTHALENE	-	-	3	-	-	-	-	-	-	-	-	6	-	100	E	µg/L	100	R	µg/L
	4-chloroaniline	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	HEXACHLOROBUTADIENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	CAPROLACTAM	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	4-chloro-3-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2-methylnaphthalene	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	HEXACHLOROCYCLOPENTADIENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	2,4,6-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2,4,5-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	6	-	25	U	µg/L	25	R	µg/L
	1,1-Biphenyl	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	2-chloronaphthalene	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	2-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	6	-	25	U	µg/L	25	R	µg/L
	DIMETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	2,6-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	ACENAPHTHYLENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	3-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	6	-	25	U	µg/L	25	R	µg/L
	ACENAPHTHENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	2,4-dinitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	25	U	µg/L	25	R	µg/L
	4-NITROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	25	U	µg/L	25	R	µg/L
	DIBENZOFURAN	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	2,4-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	DIETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	FLUORENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	4-chlorophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	4-NITROANILINE	-	-	3	-	-	-	-	-	-	-	-	6	-	25	U	µg/L	25	R	µg/L
	4,6-dinitro-2-methyl-phenol	-	-	3	-	-	-	-	-	-	-	-	-	-	25	U	µg/L	25	R	µg/L
	N-NITROSODIPHENYLAMINE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	4-bromophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	HEXACHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	ATRAZINE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	PENTACHLOROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	25	U	µg/L	25	R	µg/L
	PHENANTHRENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	CARBAZOLE	-	-	3	-	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	DI-N-BUTYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	PYRENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	BUTYL BENZYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	3,3'-dichlorobenzidine	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	BENZO(A)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	CHRYSENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	DI-N-OCTYLPHTHALATE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	BENZO(B)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	BENZO(K)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	BENZO(A)PYRENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	INDENO(1,2,3-CD)PYRENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	DIBENZO(A,H)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
	BENZO[G,H,I]PERYLENE	-	-	3	-	-	-	-	-	-	-	-	6	-	10	U	µg/L	10	R	µg/L
SWMU318-GW07-01DLDL																				
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	4	19	U	µg/L	19	UJ	µg/L
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	4	19	U	µg/L	19	U	µg/L
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	-	-	-	-	-	4	47	U	µg/L	47	U	µg/L
	1,1-Biphenyl	-	-	-	-	-	-	-	-	-	-	-	-	4	19	U	µg/L	19	U	µg/L
	2-chloronaphthalene	-	-	-	-	-	-	-	-	-	-	-	-	4	19	U	µg/L	19	U	µg/L
	2-nitroaniline	-	-	-	-	-	-	-	-	-	-	-	-	4	47	U	µg/L	47	U	µg/L
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	-	-	-	-	-	4	19	U	µg/L	19	U	µg/L
	2,6-dinitrotoluene	-	-	-	-	-	-	-	-	-	-	-	-	4	19	U	µg/L	19	U	µg/L
	ACENAPHTHYLENE	-	-	-	-	-	-	-	-	-	-	-	-	4	19	U	µg/L	19	U	µg/L
	3-nitroaniline	-	-	-	-	-	-	-	-	-	-	-	-	4	47	U	µg/L	47	U	µg/L
	ACENAPHTHENE	-	-	-	-	-	-	-	-	-	-	-	-	4	19	U	µg/L	19	U	µg/L
	2,4-dinitrophenol	-	-	-	-	-	-	-	-	-	-	-	-	4	47	U	µg/L	47	U	µg/L
	4-NITROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	47	U	µg/L	47	U	µg/L
	DIBENZOFURAN	-	-	-	-	-	-	-	-	-	-	-	-	4	19	U	µg/L	19	U	µg/L
	2,4-dinitrotoluene	-	-	-	-	-	-	-	-	-	-	-	-	4	19	U	µg/L	19	U	µg/L
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	-	-	-	-	-	4	19	U	µg/L	19	U	µg/L
	FLUORENE	-	-	-	-	-	-	-	-	-	-	-	-	4	19	U	µg/L	19	U	µg/L
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	-	-	-	-	-	4	19	U	µg/L	19	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	4	47	U	µg/L	47	UJ	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	47	U	µg/L	47	U	µg/L
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	19	U	µg/L	19	UJ	µg/L
SWMU318-GW08-01RE																				
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	4-NITROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	8	-	-	-	-	-	-	8	J	µg/L	10	U	µg/L
SWMU318-GW09-01																				
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
SWMU318-GW10																				
	4-NITROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	8	-	-	-	-	-	-	0.5	J	µg/L	10	U	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	4	-	-	-	-	-	-	0.6	JB	µg/L	10	U	µg/L
SWMU318-GW11-01																				
	4-NITROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	4	-	-	-	-	-	-	2	JB	µg/L	10	U	µg/L
SWMU318-GW12-01																				
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
SWMU318-GW13																				
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	4	-	-	-	-	-	-	2	JB	µg/L	10	U	µg/L
SWMU318-GW14-01																				

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	NAPHTHALENE	-	-	5	-	-	-	-	-	-	-	-	-	-	360	E	µg/L	800	D	µg/L
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	15	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-methylnaphthalene	-	-	5	-	-	-	-	-	-	-	-	-	-	120	E	µg/L	130	D	µg/L
	3-nitroaniline	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	ACENAPHTHENE	-	-	5	-	-	-	-	8,9	-	-	-	-	-	88	E	µg/L	95	DJ	µg/L
	4-NITROPHENOL	-	-	-	-	-	-	-	8,15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	15	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	CARBAZOLE	-	-	-	-	-	9	-	-	-	-	-	-	-	24		µg/L	24	J	µg/L
	PYRENE	-	-	-	-	-	-	-	9	-	-	-	-	-	10	U	µg/L	10	U	µg/L
SWMU318-GW14-01DLDL																				
	BENZALDEHYDE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	PHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	BIS(2-CHLOROETHYL) ETHER	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	2-chlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	HEXACHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	ATRAZINE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	PENTACHLOROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	290	U	µg/L	290	R	µg/L
	PHENANTHRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	CARBAZOLE	-	-	3	-	-	-	-	-	-	-	-	-	-	18	J	µg/L	18	R	µg/L
	DI-N-BUTYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	BUTYL BENZYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	3,3'-dichlorobenzidine	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	BENZO(A)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	CHRYSENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	DI-N-OCTYLPHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	BENZO(B)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	BENZO(K)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	BENZO(A)PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	INDENO(1,2,3-CD)PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	DIBENZO(A,H)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	BENZO[G,H,I]PERYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	2-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	2,2'-oxybis (1-chloropropane)	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	ACETOPHENONE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	4-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	N-NITROSO-DI-N-PROPYLAMINE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	HEXACHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	NITROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	ISOPHORONE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	2-nitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	2,4-dimethylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	BIS(2-CHLOROETHOXY) METHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	2,4-dichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	NAPHTHALENE	-	-	3	-	-	-	-	-	-	-	-	-	-	800		µg/L	800	R	µg/L
	4-chloroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	HEXACHLOROBUTADIENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	CAPROLACTAM	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	4-chloro-3-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	2-methylnaphthalene	-	-	3	-	-	-	-	-	-	-	-	-	-	130		µg/L	130	R	µg/L
	HEXACHLOROCYCLOPENTADIENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	2,4,6-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	2,4,5-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	290	U	µg/L	290	R	µg/L
	1,1-Biphenyl	-	-	3	-	-	-	-	-	-	-	-	-	-	14	J	µg/L	14	R	µg/L

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SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2-chloronaphthalene	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	2-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	290	U	µg/L	290	R	µg/L
	DIMETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	2,6-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	ACENAPHTHYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	3-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	290	U	µg/L	290	R	µg/L
	ACENAPHTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	95	J	µg/L	95	R	µg/L
	2,4-dinitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	290	U	µg/L	290	R	µg/L
	4-NITROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	290	U	µg/L	290	R	µg/L
	DIBENZOFURAN	-	-	3	-	-	-	-	-	-	-	-	-	-	28	J	µg/L	28	R	µg/L
	2,4-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	DIETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	FLUORENE	-	-	3	-	-	-	-	-	-	-	-	-	-	18	J	µg/L	18	R	µg/L
	4-chlorophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	4-NITROANILINE	-	-	3	-	-	-	-	-	-	-	-	-	-	290	U	µg/L	290	R	µg/L
	4,6-dinitro-2-methyl-phenol	-	-	3	-	-	-	-	-	-	-	-	-	-	290	U	µg/L	290	R	µg/L
	N-NITROSODIPHENYLAMINE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	4-bromophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
SWMU318-GW14-01RE																				
	BENZALDEHYDE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	PHENOL	-	-	3	3	-	-	-	-	-	-	-	-	-	0.7	J	µg/L	0.7	R	µg/L
	BIS(2-CHLOROETHYL) ETHER	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2-chlorophenol	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2-methylphenol	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2,2'-oxybis (1-chloropropane)	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	ACETOPHENONE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	4-methylphenol	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	N-NITROSO-DI-N-PROPYLAMINE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	HEXACHLOROETHANE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L

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SDG ID: **2004-B**

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	NITROBENZENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	ISOPHORONE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2-nitrophenol	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2,4-dimethylphenol	-	-	3	3	-	-	-	-	-	-	-	-	-	64		µg/L	64	R	µg/L
	BIS(2-CHLOROETHOXY) METHANE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2,4-dichlorophenol	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	NAPHTHALENE	-	-	3	3	-	-	-	-	-	-	-	-	-	240	E	µg/L	240	R	µg/L
	4-chloroaniline	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	HEXACHLOROBUTADIENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	CAPROLACTAM	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	4-chloro-3-methylphenol	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2-methylnaphthalene	-	-	3	3	-	-	-	-	-	-	-	-	-	99	E	µg/L	99	R	µg/L
	HEXACHLOROCYCLOPENTADIENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2,4,6-trichlorophenol	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2,4,5-trichlorophenol	-	-	3	3	-	-	-	-	-	-	-	-	-	25	U	µg/L	25	R	µg/L
	1,1-Biphenyl	-	-	3	3	-	-	-	-	-	-	-	-	-	13		µg/L	13	R	µg/L
	2-chloronaphthalene	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2-nitroaniline	-	-	3	3	-	-	-	-	-	-	-	-	-	25	U	µg/L	25	R	µg/L
	DIMETHYL PHTHALATE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	2,6-dinitrotoluene	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	ACENAPHTHYLENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	3-nitroaniline	-	-	3	3	-	-	-	-	-	-	-	-	-	25	U	µg/L	25	R	µg/L
	ACENAPHTHENE	-	-	3	3	-	-	-	-	-	-	-	-	-	68		µg/L	68	R	µg/L
	2,4-dinitrophenol	-	-	3	3	-	-	-	-	-	-	-	-	-	25	U	µg/L	25	R	µg/L
	4-NITROPHENOL	-	-	3	3	-	-	-	-	-	-	-	-	-	25	U	µg/L	25	R	µg/L
	DIBENZOFURAN	-	-	3	3	-	-	-	-	-	-	-	-	-	24		µg/L	24	R	µg/L
	2,4-dinitrotoluene	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	DIETHYL PHTHALATE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	FLUORENE	-	-	3	3	-	-	-	-	-	-	-	-	-	17		µg/L	17	R	µg/L
	4-chlorophenyl Phenyl Ether	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L

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	4-NITROANILINE	-	-	3	3	-	-	-	-	-	-	-	-	-	25	U	µg/L	25	R	µg/L
	4,6-dinitro-2-methyl-phenol	-	-	3	3	-	-	-	-	-	-	-	-	-	25	U	µg/L	25	R	µg/L
	N-NITROSODIPHENYLAMINE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	4-bromophenyl Phenyl Ether	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	HEXACHLOROBENZENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	ATRAZINE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	PENTACHLOROPHENOL	-	-	3	3	-	-	-	-	-	-	-	-	-	25	U	µg/L	25	R	µg/L
	PHENANTHRENE	-	-	3	3	-	-	-	-	-	-	-	-	-	0.6	J	µg/L	0.6	R	µg/L
	ANTHRACENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	CARBAZOLE	-	-	3	3	-	-	-	-	-	-	-	-	-	12		µg/L	12	R	µg/L
	DI-N-BUTYL PHTHALATE	-	-	3	3	-	-	-	-	-	-	-	-	-	1	J	µg/L	1	R	µg/L
	FLUORANTHENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	PYRENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	BUTYL BENZYL PHTHALATE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	3,3'-dichlorobenzidine	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	BENZO(A)ANTHRACENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	CHRYSENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	3	3	-	-	-	-	-	-	-	-	-	2	J	µg/L	2	R	µg/L
	DI-N-OCTYLPHTHALATE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	BENZO(B)FLUORANTHENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	BENZO(K)FLUORANTHENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	BENZO(A)PYRENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	INDENO(1,2,3-CD)PYRENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	DIBENZO(A,H)ANTHRACENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
	BENZO[G,H,I]PERYLENE	-	-	3	3	-	-	-	-	-	-	-	-	-	10	U	µg/L	10	R	µg/L
SWMU318-GW14-01REDLDL																				
	BENZALDEHYDE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	PHENOL	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	BIS(2-CHLOROETHYL) ETHER	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2-chlorophenol	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	HEXACHLOROBENZENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	ATRAZINE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	PENTACHLOROPHENOL	-	-	3	3	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	PHENANTHRENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	ANTHRACENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	CARBAZOLE	-	-	3	3	-	-	-	-	-	-	-	-	-	11	J	µg/L	11	R	µg/L
	DI-N-BUTYL PHTHALATE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	FLUORANTHENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	PYRENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BUTYL BENZYL PHTHALATE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	3,3'-dichlorobenzidine	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BENZO(A)ANTHRACENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	CHRYSENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	DI-N-OCTYLPHTHALATE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BENZO(B)FLUORANTHENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BENZO(K)FLUORANTHENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BENZO(A)PYRENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	INDENO(1,2,3-CD)PYRENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	DIBENZO(A,H)ANTHRACENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BENZO[G,H,I]PERYLENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2-methylphenol	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2,2'-oxybis (1-chloropropane)	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	ACETOPHENONE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	4-methylphenol	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	N-NITROSO-DI-N-PROPYLAMINE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L

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SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	HEXACHLOROETHANE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	NITROBENZENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	ISOPHORONE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2-nitrophenol	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2,4-dimethylphenol	-	-	3	3	-	-	-	-	-	-	-	-	-	61		µg/L	61	R	µg/L
	BIS(2-CHLOROETHOXY) METHANE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2,4-dichlorophenol	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	NAPHTHALENE	-	-	3	3	-	-	-	-	-	-	-	-	-	580		µg/L	580	R	µg/L
	4-chloroaniline	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	HEXACHLOROBUTADIENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	CAPROLACTAM	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	4-chloro-3-methylphenol	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2-methylnaphthalene	-	-	3	3	-	-	-	-	-	-	-	-	-	110		µg/L	110	R	µg/L
	HEXACHLOROCYCLOPENTADIENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2,4,6-trichlorophenol	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2,4,5-trichlorophenol	-	-	3	3	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	1,1-Biphenyl	-	-	3	3	-	-	-	-	-	-	-	-	-	14	J	µg/L	14	R	µg/L
	2-chloronaphthalene	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2-nitroaniline	-	-	3	3	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	DIMETHYL PHTHALATE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2,6-dinitrotoluene	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	ACENAPHTHYLENE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	3-nitroaniline	-	-	3	3	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	ACENAPHTHENE	-	-	3	3	-	-	-	-	-	-	-	-	-	81		µg/L	81	R	µg/L
	2,4-dinitrophenol	-	-	3	3	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	4-NITROPHENOL	-	-	3	3	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	DIBENZOFURAN	-	-	3	3	-	-	-	-	-	-	-	-	-	25	J	µg/L	25	R	µg/L
	2,4-dinitrotoluene	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	DIETHYL PHTHALATE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	FLUORENE	-	-	3	3	-	-	-	-	-	-	-	-	-	17	J	µg/L	17	R	µg/L

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SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	4-chlorophenyl Phenyl Ether	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	4-NITROANILINE	-	-	3	3	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	4,6-dinitro-2-methyl-phenol	-	-	3	3	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	N-NITROSODIPHENYLAMINE	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	4-bromophenyl Phenyl Ether	-	-	3	3	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
SWMU318-GW15																				
	NAPHTHALENE	-	-	5	-	-	-	-	-	-	-	-	-	-	280	E	µg/L	340	D	µg/L
	2-methylnaphthalene	-	-	5	-	-	-	-	-	-	-	-	-	-	120	E	µg/L	130	D	µg/L
	ACENAPHTHENE	-	-	5	-	-	-	-	-	-	-	-	-	-	120	E	µg/L	130	D	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
SWMU318-GW15DLDL																				
	BENZALDEHYDE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	PHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	BIS(2-CHLOROETHYL) ETHER	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	2-chlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	2-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	2,2'-oxybis (1-chloropropane)	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	ACETOPHENONE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	4-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	N-NITROSO-DI-N-PROPYLAMINE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	HEXACHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	NITROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	ISOPHORONE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	2-nitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	2,4-dimethylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	19	J	µg/L	19	R	µg/L
	BIS(2-CHLOROETHOXY) METHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	2,4-dichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L

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SDG ID: **2004-B**

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	NAPHTHALENE	-	-	3	-	-	-	-	-	-	-	-	-	-	340		µg/L	340	R	µg/L
	4-chloroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	HEXACHLOROBUTADIENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	CAPROLACTAM	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	4-chloro-3-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	2-methylnaphthalene	-	-	3	-	-	-	-	-	-	-	-	-	-	130		µg/L	130	R	µg/L
	HEXACHLOROCYCLOPENTADIENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	2,4,6-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	2,4,5-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	130	U	µg/L	130	R	µg/L
	1,1-Biphenyl	-	-	3	-	-	-	-	-	-	-	-	-	-	32	J	µg/L	32	R	µg/L
	2-chloronaphthalene	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	2-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	130	U	µg/L	130	R	µg/L
	DIMETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	2,6-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	ACENAPHTHYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	3-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	130	U	µg/L	130	R	µg/L
	ACENAPHTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	130		µg/L	130	R	µg/L
	2,4-dinitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	130	U	µg/L	130	R	µg/L
	4-NITROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	130	U	µg/L	130	R	µg/L
	DIBENZOFURAN	-	-	3	-	-	-	-	-	-	-	-	-	-	74		µg/L	74	R	µg/L
	2,4-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	DIETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	FLUORENE	-	-	3	-	-	-	-	-	-	-	-	-	-	54		µg/L	54	R	µg/L
	4-chlorophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	4-NITROANILINE	-	-	3	-	-	-	-	-	-	-	-	-	-	130	U	µg/L	130	R	µg/L
	4,6-dinitro-2-methyl-phenol	-	-	3	-	-	-	-	-	-	-	-	-	-	130	U	µg/L	130	R	µg/L
	N-NITROSODIPHENYLAMINE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	4-bromophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	HEXACHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	ATRAZINE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L

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	PENTACHLOROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	130	U	µg/L	130	R	µg/L
	PHENANTHRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	CARBAZOLE	-	-	3	-	-	-	-	-	-	-	-	-	-	45	J	µg/L	45	R	µg/L
	DI-N-BUTYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	BUTYL BENZYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	3,3'-dichlorobenzidine	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	BENZO(A)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	CHRYSENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	DI-N-OCTYLPHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	BENZO(B)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	BENZO(K)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	BENZO(A)PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	INDENO(1,2,3-CD)PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	DIBENZO(A,H)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
	BENZO[G,H,I]PERYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	53	U	µg/L	53	R	µg/L
SWMU318-MW01																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	3-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result	Units	Validated Result	Units
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	3	-	-	-	-	-	25 U	µg/L	25 UJ	µg/L
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	25 U	µg/L	25 U	µg/L
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	25 U	µg/L	25 U	µg/L
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CARBAZOLE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BENZO(B)FLUORANTHENE	-	-	-	-	-	9	-	3	-	-	-	-	-	10 U	µg/L	10 UJ	µg/L
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10 U	µg/L	10 U	µg/L

SWMU318-MW02

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	67		µg/L	67		µg/L
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	NAPHTHALENE	-	-	5	-	-	-	-	3	-	-	-	-	-	180	E	µg/L	260	D	µg/L
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	62		µg/L	62		µg/L
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	8	J	µg/L	8	J	µg/L
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	3-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	35		µg/L	35		µg/L
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	10		µg/L	10		µg/L
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	9		µg/L	9		µg/L
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	3	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	CARBAZOLE	-	-	-	-	-	-	-	3	-	-	-	-	-	10		µg/L	10		µg/L
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	BENZO(B)FLUORANTHENE	-	-	-	-	-	9	-	3	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
SWMU318-MW02D																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	74		µg/L	74		µg/L
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	NAPHTHALENE	-	-	5	-	-	-	-	3	-	-	-	-	-	220	E	µg/L	360	D	µg/L
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L

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	2-methylnaphthalene	-	-	5	-	-	-	-	3	-	-	-	-	-	77	E	µg/L	97	D	µg/L
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	8	J	µg/L	8	J	µg/L
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	3-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	32		µg/L	32		µg/L
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	9	J	µg/L	9	J	µg/L
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	8	J	µg/L	8	J	µg/L
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	3	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	CARBAZOLE	-	-	-	-	-	-	-	3	-	-	-	-	-	9	J	µg/L	9	J	µg/L
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L

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Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BENZO(B)FLUORANTHENE	-	-	-	-	-	9	-	3	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
SWMU318-MW02DDLDL																				
	BENZALDEHYDE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	PHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BIS(2-CHLOROETHYL) ETHER	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	4-bromophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	HEXACHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	ATRAZINE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	PENTACHLOROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	PHENANTHRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	CARBAZOLE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	DI-N-BUTYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L

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	BUTYL BENZYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	3,3'-dichlorobenzidine	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BENZO(A)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	CHRYSENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	DI-N-OCTYLPHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BENZO(B)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BENZO(K)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BENZO(A)PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	INDENO(1,2,3-CD)PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2-chlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2,2'-oxybis (1-chloropropane)	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	ACETOPHENONE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	4-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	N-NITROSO-DI-N-PROPYLAMINE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	HEXACHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	NITROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	ISOPHORONE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2-nitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2,4-dimethylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	83		µg/L	83	R	µg/L
	BIS(2-CHLOROETHOXY) METHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2,4-dichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	NAPHTHALENE	-	-	3	-	-	-	-	-	-	-	-	-	-	360		µg/L	360	R	µg/L
	4-chloroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	HEXACHLOROBUTADIENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	CAPROLACTAM	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	4-chloro-3-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2-methylnaphthalene	-	-	3	-	-	-	-	-	-	-	-	-	-	97		µg/L	97	R	µg/L

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	HEXACHLOROCYCLOPENTADIENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2,4,6-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2,4,5-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	1,1-Biphenyl	-	-	3	-	-	-	-	-	-	-	-	-	-	16	J	µg/L	16	R	µg/L
	2-chloronaphthalene	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	DIMETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	2,6-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	ACENAPHTHYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	3-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	ACENAPHTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	80		µg/L	80	R	µg/L
	2,4-dinitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	4-NITROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	DIBENZOFURAN	-	-	3	-	-	-	-	-	-	-	-	-	-	20	J	µg/L	20	R	µg/L
	2,4-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	DIETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	FLUORENE	-	-	3	-	-	-	-	-	-	-	-	-	-	18	J	µg/L	18	R	µg/L
	4-chlorophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	4-NITROANILINE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	4,6-dinitro-2-methyl-phenol	-	-	3	-	-	-	-	-	-	-	-	-	-	120	U	µg/L	120	R	µg/L
	N-NITROSODIPHENYLAMINE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	DIBENZO(A,H)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
	BENZO[G,H,I]PERYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	47	U	µg/L	47	R	µg/L
SWMU318-MW02DLDL																				
	BENZALDEHYDE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	PHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	BIS(2-CHLOROETHYL) ETHER	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	2-chlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	2,2'-oxybis (1-chloropropane)	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	ACETOPHENONE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	4-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	N-NITROSO-DI-N-PROPYLAMINE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	HEXACHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	NITROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	ISOPHORONE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	2-nitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	2,4-dimethylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	77		µg/L	77	R	µg/L
	BIS(2-CHLOROETHOXY) METHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	2,4-dichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	NAPHTHALENE	-	-	3	-	-	-	-	-	-	-	-	-	-	260		µg/L	260	R	µg/L
	4-chloroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	HEXACHLOROBUTADIENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	CAPROLACTAM	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	4-chloro-3-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	2-methylnaphthalene	-	-	3	-	-	-	-	-	-	-	-	-	-	78		µg/L	78	R	µg/L
	HEXACHLOROCYCLOPENTADIENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	2,4,6-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	2,4,5-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	94	U	µg/L	94	R	µg/L
	1,1-Biphenyl	-	-	3	-	-	-	-	-	-	-	-	-	-	15	J	µg/L	15	R	µg/L
	2-chloronaphthalene	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	2-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	94	U	µg/L	94	R	µg/L
	DIMETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	2,6-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	ACENAPHTHYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	3-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	94	U	µg/L	94	R	µg/L
	ACENAPHTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	72		µg/L	72	R	µg/L
	2,4-dinitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	94	U	µg/L	94	R	µg/L

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SDG ID: **2004-B**

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	4-NITROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	94	U	µg/L	94	R	µg/L
	DIBENZOFURAN	-	-	3	-	-	-	-	-	-	-	-	-	-	19	J	µg/L	19	R	µg/L
	2,4-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	DIETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	FLUORENE	-	-	3	-	-	-	-	-	-	-	-	-	-	17	J	µg/L	17	R	µg/L
	4-chlorophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	4-NITROANILINE	-	-	3	-	-	-	-	-	-	-	-	-	-	94	U	µg/L	94	R	µg/L
	4,6-dinitro-2-methyl-phenol	-	-	3	-	-	-	-	-	-	-	-	-	-	94	U	µg/L	94	R	µg/L
	N-NITROSODIPHENYLAMINE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	4-bromophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	HEXACHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	ATRAZINE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	PENTACHLOROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	94	U	µg/L	94	R	µg/L
	PHENANTHRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	CARBAZOLE	-	-	3	-	-	-	-	-	-	-	-	-	-	11	J	µg/L	11	R	µg/L
	DI-N-BUTYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	BUTYL BENZYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	3,3'-dichlorobenzidine	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	BENZO(A)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	CHRYSENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	DI-N-OCTYLPHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	BENZO(B)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	BENZO(K)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	BENZO(A)PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	INDENO(1,2,3-CD)PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L

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	DIBENZO(A,H)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
	BENZO[G,H,I]PERYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	38	U	µg/L	38	R	µg/L
SWMU318-MW03																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	38		µg/L	38		µg/L
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L

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	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	3-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-NITROANILINE	-	-	-	-	-	9	-	3	-	-	-	-	-	25	U	µg/L	25	UJ	µg/L
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	25	U	µg/L	25	U	µg/L
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	CARBAZOLE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L

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	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BENZO(B)FLUORANTHENE	-	-	-	-	-	9	-	3	-	-	-	-	-	10	U	µg/L	10	UJ	µg/L
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	10	U	µg/L	10	U	µg/L
SWMU318-SB01-00																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	2,900		µg/Kg	2,900		µg/Kg
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	180	J	µg/Kg	180	J	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	11	J	µg/Kg	11	J	µg/Kg
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	3-nitroaniline	-	-	-	-	-	9	-	3	-	-	-	-	-	980	U	µg/Kg	980	UJ	µg/Kg
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	220	J	µg/Kg	220	J	µg/Kg
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	150	J	µg/Kg	150	J	µg/Kg
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	160	J	µg/Kg	160	J	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	4-NITROANILINE	-	-	-	-	-	9	-	3	-	-	-	-	-	980	U	µg/Kg	980	UJ	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	120	J	µg/Kg	120	J	µg/Kg
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	32	J	µg/Kg	32	J	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	3	-	-	-	-	-	19	J	µg/Kg	19	J	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	31	J	µg/Kg	31	J	µg/Kg
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	650		µg/Kg	650		µg/Kg
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	830		µg/Kg	830		µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	350	J	µg/Kg	350	J	µg/Kg
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390		µg/Kg	390		µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	8	3	-	-	-	-	-	120	J	µg/Kg	390	U	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430		µg/Kg	430		µg/Kg
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	300	J	µg/Kg	300	J	µg/Kg
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	J	µg/Kg	380	J	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	210	J	µg/Kg	210	J	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	68	J	µg/Kg	68	J	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
SWMU318-SB01-04																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	45	J	µg/Kg	45	J	µg/Kg
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	3-nitroaniline	-	-	-	-	-	9	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	UJ	µg/Kg
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	20	J	µg/Kg	20	J	µg/Kg
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	14	J	µg/Kg	14	J	µg/Kg
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	17	J	µg/Kg	17	J	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	4-NITROANILINE	-	-	-	-	-	9	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	UJ	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	18	J	µg/Kg	18	J	µg/Kg
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	3	-	-	-	-	-	440	U	µg/Kg	440	UJ	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	8	3	-	-	-	-	-	15	J	µg/Kg	440	U	µg/Kg
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	120	J	µg/Kg	120	J	µg/Kg
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	120	J	µg/Kg	120	J	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	68	J	µg/Kg	68	J	µg/Kg
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	68	J	µg/Kg	68	J	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	8	3	-	-	-	-	-	40	J	µg/Kg	440	U	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	68	J	µg/Kg	68	J	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	50	J	µg/Kg	50	J	µg/Kg
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	54	J	µg/Kg	54	J	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	28	J	µg/Kg	28	J	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg

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R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
E - (Lab qualifier) Exceeds calibration range
S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
SWMU318-SB02-01																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	140	J	µg/Kg	140	J	µg/Kg
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	920	U	µg/Kg	920	U	µg/Kg
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	920	U	µg/Kg	920	U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	3-nitroaniline	-	-	-	-	-	9	-	3	-	-	-	-	-	920	U	µg/Kg	920	UJ	µg/Kg
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	920	U	µg/Kg	920	U	µg/Kg
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	920	U	µg/Kg	920	U	µg/Kg
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	4-NITROANILINE	-	-	-	-	-	9	-	3	-	-	-	-	-	920	U	µg/Kg	920	UJ	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	920	U	µg/Kg	920	U	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	920	U	µg/Kg	920	U	µg/Kg
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	3	-	-	-	-	-	370	U	µg/Kg	370	UJ	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	8	3	-	-	-	-	-	40	J	µg/Kg	370	U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	370	U	µg/Kg	370	U	µg/Kg
SWMU318-SB02-01D																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	220	J	µg/Kg	220	J	µg/Kg
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	3	-	-	-	-	-	390	U	µg/Kg	390	UJ	µg/Kg
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	3-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	4-NITROANILINE	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	980	U	µg/Kg	980	U	µg/Kg
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	CARBAZOLE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	390	U	µg/Kg	390	U	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	9	-	3	-	-	-	-	-	390	U	µg/Kg	390	UJ	µg/Kg
SWMU318-SB02-04																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	9	-	3	-	-	-	-	-	440	U	µg/Kg	440	UJ	µg/Kg
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	23	J	µg/Kg	23	J	µg/Kg
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	3	-	-	-	-	-	440	U	µg/Kg	440	UJ	µg/Kg
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	9	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	UJ	µg/Kg
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	3-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	4-NITROANILINE	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg

Analyte Qualification Codes:

TU - GC/MS Tune Time
AS - Analytical Sequence
CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
BC - Blank contamination
MS - Matrix spike effects
TC - TCL compound ID
CQ - Compound/parameter quantitation
TI - Tentatively identified compound
SD - Surrogate deficiencies
IS - Internal standard

Analyte Qualifiers:

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
E - (Lab qualifier) Exceeds calibration range
S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	3	-	-	-	-	-	440	U	µg/Kg	440	UJ	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	8	3	-	-	-	-	-	98	J	µg/Kg	440	U	µg/Kg
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	9	-	3	-	-	-	-	-	440	U	µg/Kg	440	UJ	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	9	8	3	-	-	-	-	-	23	J	µg/Kg	440	UJ	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	9	8	3	-	-	-	-	-	33	J	µg/Kg	440	UJ	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	440	U	µg/Kg	440	U	µg/Kg
SWMU318-SB03-00																				
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2-nitroaniline	-	-	-	-	-	9	-	-	-	-	-	-	-	1,000	U	µg/Kg	1,000	UJ	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
SWMU318-SB03-01																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	23	J	µg/Kg	23	J	µg/Kg
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	18	J	µg/Kg	18	J	µg/Kg
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg

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SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	3	-	-	-	-	-	380	U	µg/Kg	380	UJ	µg/Kg
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	970	U	µg/Kg	970	U	µg/Kg
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	970	U	µg/Kg	970	U	µg/Kg
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	3-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	970	U	µg/Kg	970	U	µg/Kg
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	970	U	µg/Kg	970	U	µg/Kg
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	970	U	µg/Kg	970	U	µg/Kg
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	4-NITROANILINE	-	-	-	-	-	-	-	3	-	-	-	-	-	970	U	µg/Kg	970	U	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	970	U	µg/Kg	970	U	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	970	U	µg/Kg	970	U	µg/Kg
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	CARBAZOLE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	8	3	-	-	-	-	-	15	J	µg/Kg	380	U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	8	3	-	-	-	-	-	84	J	µg/Kg	380	U	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	380	U	µg/Kg	380	U	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	9	-	3	-	-	-	-	-	380	U	µg/Kg	380	UJ	µg/Kg
SWMU318-SB04-02																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	3	-	-	-	-	-	490	U	µg/Kg	490	UJ	µg/Kg
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,200	U	µg/Kg	1,200	U	µg/Kg
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	1,200	U	µg/Kg	1,200	U	µg/Kg
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	3-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	1,200	U	µg/Kg	1,200	U	µg/Kg
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,200	U	µg/Kg	1,200	U	µg/Kg
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,200	U	µg/Kg	1,200	U	µg/Kg
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	4-NITROANILINE	-	-	-	-	-	-	-	3	-	-	-	-	-	1,200	U	µg/Kg	1,200	U	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,200	U	µg/Kg	1,200	U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,200	U	µg/Kg	1,200	U	µg/Kg
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	CARBAZOLE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	8	3	-	-	-	-	-	17	J	µg/Kg	490	U	µg/Kg
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	67	J	µg/Kg	67	J	µg/Kg
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	68	J	µg/Kg	68	J	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	42	J	µg/Kg	42	J	µg/Kg
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	50	J	µg/Kg	50	J	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	72	J	µg/Kg	72	J	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	39	J	µg/Kg	39	J	µg/Kg
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	43	J	µg/Kg	43	J	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	32	J	µg/Kg	32	J	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	490	U	µg/Kg	490	U	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	9	-	3	-	-	-	-	-	490	U	µg/Kg	490	UJ	µg/Kg
SWMU318-SB04-04																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	3	-	-	-	-	-	410	U	µg/Kg	410	UJ	µg/Kg
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	3-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg

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Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	4-NITROANILINE	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	CARBAZOLE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	8	3	-	-	-	-	-	28	J	µg/Kg	410	U	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg

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BC - Blank contamination
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B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
E - (Lab qualifier) Exceeds calibration range
S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	9	-	3	-	-	-	-	-	410	U	µg/Kg	410	UJ	µg/Kg
SWMU318-SB05-02																				
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	9	-	-	-	-	-	-	-	430	U	µg/Kg	430	UJ	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	9	-	-	-	-	-	-	-	1,100	U	µg/Kg	1,100	UJ	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	-	-	-	-	-	-	430	U	µg/Kg	430	UJ	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	8	-	-	-	-	-	-	13	J	µg/Kg	430	UJ	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	430	U	µg/Kg	430	UJ	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	9	4	-	-	-	-	-	-	41	JB	µg/Kg	430	UJ	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	430	U	µg/Kg	430	UJ	µg/Kg
SWMU318-SB05-02D																				
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	2-nitroaniline	-	-	-	-	-	9	-	-	-	-	-	-	-	1,000	U	µg/Kg	1,000	UJ	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	9	4	-	-	-	-	-	-	16	JB	µg/Kg	400	UJ	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
SWMU318-SB05-03																				
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	2-nitroaniline	-	-	-	-	-	9	-	-	-	-	-	-	-	1,000	U	µg/Kg	1,000	UJ	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	-	-	-	-	-	-	65	J	µg/Kg	65	J	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	DI-N-BUTYL PHTHALATE	-	-	5	-	-	-	-	-	-	-	-	-	-	3,400	E	µg/Kg	4,600	D	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	U	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	9	4	-	-	-	-	-	-	130	JB	µg/Kg	400	UJ	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
SWMU318-SB05-03DLDL																				
	BENZALDEHYDE	-	-	3	-	-	-	-	-	-	-	-	-	-	21	J	µg/Kg	21	R	µg/Kg
	PHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2-chlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	ACETOPHENONE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	4-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	HEXACHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	NITROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	ISOPHORONE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2-nitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2,4-dimethylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2,4-dichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	NAPHTHALENE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	4-chloroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	HEXACHLOROBUTADIENE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	CAPROLACTAM	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	4-chloro-3-methylphenol	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2-methylnaphthalene	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg

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SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	HEXACHLOROCYCLOPENTADIENE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2,4,6-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2,4,5-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	2,000	U	µg/Kg	2,000	R	µg/Kg
	1,1-Biphenyl	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2-chloronaphthalene	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	2,000	U	µg/Kg	2,000	R	µg/Kg
	DIMETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2,6-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	ACENAPHTHYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	3-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	-	-	2,000	U	µg/Kg	2,000	R	µg/Kg
	ACENAPHTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2,4-dinitrophenol	-	-	3	-	-	-	-	-	-	-	-	-	-	2,000	U	µg/Kg	2,000	R	µg/Kg
	4-NITROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	2,000	U	µg/Kg	2,000	R	µg/Kg
	DIBENZOFURAN	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	2,4-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	DIETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	FLUORENE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	4-NITROANILINE	-	-	3	-	-	-	-	-	-	-	-	-	-	2,000	U	µg/Kg	2,000	R	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	3	-	-	-	-	-	-	-	-	-	-	2,000	U	µg/Kg	2,000	R	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	HEXACHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	ATRAZINE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	PENTACHLOROPHENOL	-	-	3	-	-	-	-	-	-	-	-	-	-	2,000	U	µg/Kg	2,000	R	µg/Kg
	PHENANTHRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	170	J	µg/Kg	170	R	µg/Kg
	ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	28	J	µg/Kg	28	R	µg/Kg
	CARBAZOLE	-	-	3	-	-	-	-	-	-	-	-	-	-	61	J	µg/Kg	61	R	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	4,600		µg/Kg	4,600	R	µg/Kg
	FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	3,600		µg/Kg	3,600	R	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	3,400		µg/Kg	3,400	R	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	3,3'-dichlorobenzidine	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	BENZO(A)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	1,300		µg/Kg	1,300	R	µg/Kg
	CHRYSENE	-	-	3	-	-	-	-	-	-	-	-	-	-	2,200		µg/Kg	2,200	R	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	190	JB	µg/Kg	190	R	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	3	-	-	-	-	-	-	-	-	-	-	800	U	µg/Kg	800	R	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	1,700		µg/Kg	1,700	R	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	-	-	1,300		µg/Kg	1,300	R	µg/Kg
	BENZO(A)PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	820		µg/Kg	820	R	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	3	-	-	-	-	-	-	-	-	-	-	440	J	µg/Kg	440	R	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	-	-	120	J	µg/Kg	120	R	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	3	-	-	-	-	-	-	-	-	-	-	140	J	µg/Kg	140	R	µg/Kg
SWMU318-SB06-01																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	28	J	µg/Kg	28	J	µg/Kg
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	310	J	µg/Kg	310	J	µg/Kg
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	3	-	-	-	-	-	410	U	µg/Kg	410	UJ	µg/Kg
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	3-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	4-NITROANILINE	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg

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SDG ID: **2004-B**

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	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	CARBAZOLE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	8	3	-	-	-	-	-	24	J	µg/Kg	410	U	µg/Kg
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	410	U	µg/Kg	410	U	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	9	-	3	-	-	-	-	-	410	U	µg/Kg	410	UJ	µg/Kg
SWMU318-SB06-01D																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	34	J	µg/Kg	34	J	µg/Kg
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	9	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	280	J	µg/Kg	280	J	µg/Kg
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	3	-	-	-	-	-	420	U	µg/Kg	420	UJ	µg/Kg
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	9	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	UJ	µg/Kg
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	3-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg

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SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	4-NITROANILINE	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,000	U	µg/Kg	1,000	U	µg/Kg
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	3	-	-	-	-	-	420	U	µg/Kg	420	UJ	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	9	-	3	-	-	-	-	-	420	U	µg/Kg	420	UJ	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	9	8	3	-	-	-	-	-	38	J	µg/Kg	420	UJ	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	9	-	3	-	-	-	-	-	420	U	µg/Kg	420	UJ	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg

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	BENZO[G,H,I]PERYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	420	U	µg/Kg	420	U	µg/Kg
SWMU318-SB06-02																				
	BENZALDEHYDE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	PHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2-chlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	9	-	3	-	-	-	-	-	430	U	µg/Kg	430	UJ	µg/Kg
	ACETOPHENONE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	4-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	HEXACHLOROETHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	NITROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	ISOPHORONE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2-nitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2,4-dimethylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2,4-dichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	NAPHTHALENE	-	-	-	-	-	-	-	3	-	-	-	-	-	89	J	µg/Kg	89	J	µg/Kg
	4-chloroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	CAPROLACTAM	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2-methylnaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	3	-	-	-	-	-	430	U	µg/Kg	430	UJ	µg/Kg
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	1,1-Biphenyl	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2-chloronaphthalene	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	9	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	UJ	µg/Kg
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2,6-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	ACENAPHTHYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	3-nitroaniline	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	ACENAPHTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2,4-dinitrophenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	4-NITROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	DIBENZOFURAN	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	2,4-dinitrotoluene	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	FLUORENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	4-NITROANILINE	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	ATRAZINE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	3	-	-	-	-	-	1,100	U	µg/Kg	1,100	U	µg/Kg
	PHENANTHRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	3	-	-	-	-	-	430	U	µg/Kg	430	UJ	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	8	3	-	-	-	-	-	23	J	µg/Kg	430	U	µg/Kg
	FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	9	-	3	-	-	-	-	-	430	U	µg/Kg	430	UJ	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg

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S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	CHRYSENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	9	4	3	-	-	-	-	-	24	JB	µg/Kg	430	UJ	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	9	-	3	-	-	-	-	-	430	U	µg/Kg	430	UJ	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	BENZO(A)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	-	-	3	-	-	-	-	-	430	U	µg/Kg	430	U	µg/Kg
SWMU318-SB07-00																				
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	2-nitroaniline	-	-	-	-	-	9	-	-	-	-	-	-	-	1,000	U	µg/Kg	1,000	UJ	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
SWMU318-SB07-02																				
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	9	-	-	-	-	-	-	-	420	U	µg/Kg	420	UJ	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	420	U	µg/Kg	420	UJ	µg/Kg
	2-nitroaniline	-	-	-	-	-	9	-	-	-	-	-	-	-	1,100	U	µg/Kg	1,100	UJ	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	-	-	-	-	-	-	420	U	µg/Kg	420	UJ	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	420	U	µg/Kg	420	UJ	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	420	U	µg/Kg	420	UJ	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	420	U	µg/Kg	420	UJ	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
SWMU318-SB08-00																				
	BENZALDEHYDE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	PHENOL	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2-chlorophenol	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2-methylphenol	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	ACETOPHENONE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	4-methylphenol	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	HEXACHLOROETHANE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	NITROBENZENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	ISOPHORONE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2-nitrophenol	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2,4-dimethylphenol	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2,4-dichlorophenol	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	NAPHTHALENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	12,000	E	µg/Kg	12,000	R	µg/Kg
	4-chloroaniline	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	HEXACHLOROBUTADIENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	CAPROLACTAM	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	4-chloro-3-methylphenol	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2-methylnaphthalene	-	-	3	-	-	-	-	-	-	-	-	6,8	-	2,800		µg/Kg	2,800	R	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2,4,6-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2,4,5-trichlorophenol	-	-	3	-	-	-	-	-	-	-	-	6,8	-	900	U	µg/Kg	900	R	µg/Kg
	1,1-Biphenyl	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2-chloronaphthalene	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	2-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	6,8	-	900	U	µg/Kg	900	R	µg/Kg
	DIMETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2,6-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	ACENAPHTHYLENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	3-nitroaniline	-	-	3	-	-	-	-	-	-	-	-	6,8	-	900	U	µg/Kg	900	R	µg/Kg
	ACENAPHTHENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2,4-dinitrophenol	-	-	3	-	-	-	-	-	-	-	-	6,8	-	900	U	µg/Kg	900	R	µg/Kg
	4-NITROPHENOL	-	-	3	-	-	-	-	-	-	-	-	6,8	-	900	U	µg/Kg	900	R	µg/Kg
	DIBENZOFURAN	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	2,4-dinitrotoluene	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	DIETHYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	FLUORENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	4-NITROANILINE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	900	U	µg/Kg	900	R	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	3	-	-	-	-	-	-	-	-	6,8	-	900	U	µg/Kg	900	R	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	HEXACHLOROBENZENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	ATRAZINE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	PENTACHLOROPHENOL	-	-	3	-	-	-	-	-	-	-	-	6,8	-	900	U	µg/Kg	900	R	µg/Kg
	PHENANTHRENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	CARBAZOLE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	PYRENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	3,3'-dichlorobenzidine	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	BENZO(A)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	CHRYSENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg

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R - Unusable
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E - (Lab qualifier) Exceeds calibration range
S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	1,200		µg/Kg	1,200	R	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	BENZO(A)PYRENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	3	-	-	-	-	-	-	-	-	6,8	-	360	U	µg/Kg	360	R	µg/Kg
SWMU318-SB08-00DLDL																				
	BENZALDEHYDE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	PHENOL	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	BIS(2-CHLOROETHYL) ETHER	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2-chlorophenol	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2-methylphenol	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	ACETOPHENONE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	4-methylphenol	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	N-NITROSO-DI-N-PROPYLAMINE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	HEXACHLOROETHANE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	NITROBENZENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	ISOPHORONE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2-nitrophenol	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2,4-dimethylphenol	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	BIS(2-CHLOROETHOXY) METHANE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2,4-dichlorophenol	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	NAPHTHALENE	-	-	-	-	-	-	-	-	-	-	-	9	-	32,000		µg/Kg	32,000		µg/Kg
	4-chloroaniline	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg

Analyte Qualification Codes:

TU - GC/MS Tune Time
AS - Analytical Sequence
CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
BC - Blank contamination
MS - Matrix spike effects
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E - (Lab qualifier) Exceeds calibration range
S - (Lab qualifier) Column artifact

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	HEXACHLOROBUTADIENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	CAPROLACTAM	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	4-chloro-3-methylphenol	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2-methylnaphthalene	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	UJ	µg/Kg
	2,4,6-trichlorophenol	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2,4,5-trichlorophenol	-	-	-	-	-	-	-	-	-	-	-	9	-	22,000	U	µg/Kg	22,000	U	µg/Kg
	1,1-Biphenyl	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2-chloronaphthalene	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2-nitroaniline	-	-	-	-	-	-	-	-	-	-	-	9	-	22,000	U	µg/Kg	22,000	U	µg/Kg
	DIMETHYL PHTHALATE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2,6-dinitrotoluene	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	ACENAPHTHYLENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	3-nitroaniline	-	-	-	-	-	-	-	-	-	-	-	9	-	22,000	U	µg/Kg	22,000	U	µg/Kg
	ACENAPHTHENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2,4-dinitrophenol	-	-	-	-	-	-	-	-	-	-	-	9	-	22,000	U	µg/Kg	22,000	U	µg/Kg
	4-NITROPHENOL	-	-	-	-	-	-	-	-	-	-	-	9	-	22,000	U	µg/Kg	22,000	U	µg/Kg
	DIBENZOFURAN	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	2,4-dinitrotoluene	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	DIETHYL PHTHALATE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	FLUORENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	4-chlorophenyl Phenyl Ether	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	9	-	22,000	U	µg/Kg	22,000	UJ	µg/Kg
	4,6-dinitro-2-methyl-phenol	-	-	-	-	-	-	-	-	-	-	-	9	-	22,000	U	µg/Kg	22,000	U	µg/Kg
	N-NITROSODIPHENYLAMINE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	4-bromophenyl Phenyl Ether	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	HEXACHLOROBENZENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	ATRAZINE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	PENTACHLOROPHENOL	-	-	-	-	-	-	-	-	-	-	-	9	-	22,000	U	µg/Kg	22,000	U	µg/Kg
	PHENANTHRENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg

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Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	ANTHRACENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	CARBAZOLE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	DI-N-BUTYL PHTHALATE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	FLUORANTHENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	PYRENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	UJ	µg/Kg
	BENZO(A)ANTHRACENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	CHRYSENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	BENZO(B)FLUORANTHENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	BENZO(K)FLUORANTHENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	BENZO(A)PYRENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	INDENO(1,2,3-CD)PYRENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
	BENZO[G,H,I]PERYLENE	-	-	-	-	-	-	-	-	-	-	-	9	-	9,000	U	µg/Kg	9,000	U	µg/Kg
SWMU318-SB08-04																				
	2,2'-oxybis (1-chloropropane)	-	-	-	-	-	9	-	-	-	-	-	-	-	450	U	µg/Kg	450	UJ	µg/Kg
	HEXACHLOROCYCLOPENTADIENE	-	-	-	-	-	9	-	-	-	-	-	-	-	450	U	µg/Kg	450	UJ	µg/Kg
	2-nitroaniline	-	-	-	-	-	9	-	-	-	-	-	-	-	1,100	U	µg/Kg	1,100	UJ	µg/Kg
	CARBAZOLE	-	-	-	-	-	9	-	-	-	-	-	-	-	450	U	µg/Kg	450	UJ	µg/Kg
	BUTYL BENZYL PHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	450	U	µg/Kg	450	UJ	µg/Kg
	BIS(2-ETHYLHEXYL) PHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	450	U	µg/Kg	450	UJ	µg/Kg
	DI-N-OCTYLPHTHALATE	-	-	-	-	-	9	-	-	-	-	-	-	-	450	U	µg/Kg	450	UJ	µg/Kg
SWMU318-SB09-00																				

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	TU	AS	CO	HT	IC	CC	BC	MS	TC	CQ	TI	SD	IS	Lab Result		Units	Validated Result		Units
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	980	U	µg/Kg	980	UJ	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	390	U	µg/Kg	390	UJ	µg/Kg
SWMU318-SB09-02																				
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	980	U	µg/Kg	980	UJ	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	390	U	µg/Kg	390	UJ	µg/Kg
SWMU318-SB10-00																				
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	1,000	U	µg/Kg	1,000	UJ	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	400	U	µg/Kg	400	UJ	µg/Kg
SWMU318-SB10-03RARE																				
	BENZALDEHYDE	-	-	-	-	-	9	-	-	-	-	-	-	-	470	U	µg/Kg	470	UJ	µg/Kg
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	1,200	U	µg/Kg	1,200	UJ	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	470	U	µg/Kg	470	UJ	µg/Kg
SWMU318-SB11-01																				
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	960	U	µg/Kg	960	UJ	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	380	U	µg/Kg	380	UJ	µg/Kg
SWMU318-SB11-03																				
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	1,100	U	µg/Kg	1,100	UJ	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	430	U	µg/Kg	430	UJ	µg/Kg
SWMU318-SB12-01																				
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	950	U	µg/Kg	950	UJ	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	380	U	µg/Kg	380	UJ	µg/Kg
SWMU318-SB12-04																				
	4-NITROANILINE	-	-	-	-	-	9	-	-	-	-	-	-	-	1,100	U	µg/Kg	1,100	UJ	µg/Kg
	3,3'-dichlorobenzidine	-	-	-	-	-	9	-	-	-	-	-	-	-	430	U	µg/Kg	430	UJ	µg/Kg

Lab: **KASW / KASW** SDG ID: **2004-B**

Qualification Category	**CO**
Qualification Code	**3**
Qualification Description	There were two or more analyses for this sample and the reviewer determined which data should l reported.
Qualification Action	Considerations for reporting data include, but are not limited to, dilutions, interferences, instrument sensitivity, peak resolution and a comparison of the values between the multiple analyses. Results qualified as unusable (R) when higher quality results are available from another analysis.
Qualification Category	**CO**
Qualification Code	**5**
Qualification Description	A dilution was combined with the original sample in validation.
Qualification Action	The sample was analyzed at a dilution for analyte(s) which exceeded calibration criteria. The valid combined the result for the diluted analyte with the original sample and qualified the result with a (D)
Qualification Category	**HT**
Qualification Code	**3**
Qualification Description	Analysis time limits were exceeded by the laboratory.
Qualification Action	Analysis must be performed within a certain period from collection, laboratory receipt or extraction/preparation. If that criteria is not met, the detected analytes within the sample are qualifie estimated (J) and the non-detected analytes are qualified as estimated (UJ). For grossly exceeded analysis time limits (>2X) non-detects are qualified as unusable (R).
Qualification Category	**CC**
Qualification Code	**9**
Qualification Description	The continuing calibration verification demonstrated a percent difference (%D) greater than 25% fo target analyte.
Qualification Action	CLP method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative results. Continuing calibra verification (CCV) standards establish that the initial calibration is valid. If the percent difference (% between the initial and continuing calibration is greater than 25%, then all affected analytes are qua estimated (J) or estimated (UJ).

Lab: **KASW / KASW** SDG ID: **2004-B**

Qualification Category **BC**

Qualification Code **4**

Qualification Description A sample processing artifact contaminant was detected in a blank and the detection limit for this ana in the sample was raised using the "ten times rule."

Qualification Action EPA methods do not allow blank results to be subtracted from the sample results. Instead, the level the blank is used to establish a higher detection limit for those compounds found in the blank. When compound(s) detected in the blank is a sample processing artifact (carbon disulfide, siloxanes, dietl ether, hexane, certain freons and phthalates), the "ten-times rule" is employed. This is done by multiplying the contamination value by ten; the value thus obtained becomes the "new" blank level. I sample value is between the new blank level and the project selected reporting limit, then the value the sample is used with a "U" qualifier. If the sample value is below the reporting limit, then the repo limit value is used with the "U" qualifier. If the sample value is greater than the new blank level, ther detection limit should not be raised and no action is taken.

Qualification Category **BC**

Qualification Code **8**

Qualification Description Little or no contamination was present in the associated blanks, but positive results in the sample(s) were suspected of being sample processing artifacts.

Qualification Action Qualification of the result is deemed necessary because contamination was suspected to be sampl processing artifacts. The common lab sample processing artifacts are carbon disulfide, siloxanes, diethyl ether, hexane, certain freons and phthalates. The result is either qualified to the project sele quantitation limit and qualified as a non-detect (U) or at the laboratory reported value and qualified a non-detect. If gross contamination exists all affected compounds may be qualified as unusable (R).

Qualification Category **MS**

Qualification Code **3**

Qualification Description The laboratory did not analyze matrix spike samples at the appropriate frequency.

Qualification Action Data for matrix spikes are generated to determine long term precision and accuracy of the analytica method on various matrices and to demonstrate acceptable analyte recovery by the laboratory at th of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. If matrix spike data are not analyzed at the appropriate frequency, the effects c batch specific matrix interference cannot be evaluated.

Qualification Category **MS**

Qualification Code **8**

Qualification Description The matrix spike (or matrix spike duplicate) recovery fell outside acceptable limits.

Qualification Action Data for matrix spikes are generated to determine long term precision and accuracy of the analytica method on various matrices and to demonstrate acceptable analyte recovery by the laboratory at th of sample analysis. These data alone cannot be used to evaluate the accuracy of individual sample The data reviewer must use the MS results in conjunction with other QC criteria such as laboratory control samples in order to qualify any data on the basis of matrix spikes. If all other QC criteria hav been met, qualification is not necessary, but it is noted that possible sample specific matrix interfere or laboratory spiking efficiency is present.

Qualification Categories:

CC - Continuing calibration **SD** - Surrogate deficiencies
TU - GC/MS Tune Time **BC** - Blank contamination **IS** - Internal standard
AS - Analytical Sequence **MS** - Matrix spike effects
CO - Comment **TC** - TCL compound ID
HT - Holding time **CQ** - Compound/parameter quantitation
IC - Initial calibration **TI** - Tentatively identified compound

Lab: **KASW / KASW** SDG ID: **2004-B**

Qualification Category: **MS**

Qualification Code: **9**

Qualification Description: The matrix spike/ matrix spike duplicate or sample/sample duplicate relative percent difference (RPD fell outside acceptable limits.

Qualification Action: Data for matrix spikes and sample duplicates are generated to determine long term precision of the analytical method on various matrices and to demonstrate acceptable method precision at the time o analysis. These data alone cannot be used to evaluate the precision of individual samples. If all ot QC criteria have been met, qualification is not necessary, but it is noted that possible sample specifi matrix interference or laboratory spiking efficiency is present.

Qualification Category: **MS**

Qualification Code: **15**

Qualification Description: The laboratory control sample (LCS) recovery criteria was not met.

Qualification Action: Data for laboratory control samples are generated to verify that the laboratory can accurately perfo analysis in a controlled matrix. When the LCS recovery criteria is not met, then the LCS results ma used to qualify sample data for the specific analytes that are included in the LCS solution within the associated preparation batch. If the LCS recovery exceeds the upper acceptance limit, detected ta analytes may be qualified as estimated (J). If the LCS recovery exceeds the lower acceptance limit detected target analytes may be qualified as estimated (J) and non-detects may be qualified as estimated (UJ). Professional judgement may be used for gross lower exceedance and the results m be qualified unusable (R).

Qualification Category: **SD**

Qualification Code: **6**

Qualification Description: Two or more surrogates of the base/neutral or acid fraction had recoveries less than the lower acceptance limit but greater than 10%.

Qualification Action: If two or more surrogates in either semivolatile fraction have a recovery greater than or equal to 10 percent but less than the lower acceptance limit, any detected compounds within the affected fract that sample are qualified as estimated (J) and non-detects are qualified as estimated (UJ).

Qualification Category: **SD**

Qualification Code: **8**

Qualification Description: A surrogate recovery in either the base/neutral or acid fraction was less than 10%.

Qualification Action: If any surrogate recovery is less than 10 percent, detected compounds are qualified as estimated (. and non-detected compounds are qualified as unusable (R).

Lab: **KASW / KASW** SDG ID: **2004-B**

Qualification Category	**SD**
Qualification Code	**9**
Qualification Description	The surrogates were diluted out in the primary analysis and no reliable surrogate recovery values f less diluted sample were available.
Qualification Action	The dilution of surrogates may occur. This issue requires an evaluation of analytical quality based the quality control embodied in the laboratory check, matrix spike and matrix spike duplicate samples The matrix spike quality control acceptance limits are used to evaluate the data, as well as instrume sensitivity, internal standard stability and analyte level in the sample. In most cases no qualification necessary.
Qualification Category	**IS**
Qualification Code	**4**
Qualification Description	The internal standard response varied by more than a factor of 2 (-50%-100%) from the continuing calibration.
Qualification Action	Internal standard performance criteria ensures that GC/MS sensitivity and response are stable durir each analysis. If an internal standard response varies by more than a factor of 2 (-50%-100%) fro continuing calibration, all detected compounds associated with that internal standard are qualified a estimated (J). Non-detects with a response greater than 100% are not qualified while non-detects response less than -50% are qualified as estimated (UJ). If the response is extremely low, non-det compounds are qualified as unusable (R).

Client Sample ID: **SWMU318-SB01-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **15** SDG ID: **2004-B**
Lab Sample ID: **WU0691-1** Sampling Date/Time: **03/16/2004 14:01** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-52-7	BENZALDEHYDE	Low	1	330	390	U	µg/Kg	
108-95-2	PHENOL	Low	1	330	390	U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	390	U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	390	U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	390	U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	390	U	µg/Kg	
98-86-2	ACETOPHENONE	Low	1	330	390	U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	390	U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	390	U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	390	U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	390	U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	390	U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	390	U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	390	U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	390	U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	390	U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	2,900		µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	390	U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	390	U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	390	U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	390	U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	180	J	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	390	U	µg/Kg	
88-06-2	2,4,6-trichlorophenol	Low	1	330	390	U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	980	U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	11	J	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	390	U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	980	U	µg/Kg	
131-11-3	DIMETHYL PHTHALATE	Low	1	330	390	U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	390	U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	390	U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	980	UJ	µg/Kg	*
83-32-9	ACENAPHTHENE	Low	1	330	220	J	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	980	U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	980	U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	150	J	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	390	U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	390	U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	160	J	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	390	U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB01-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **15** SDG ID: **2004-B**
Lab Sample ID: **WU0691-1** Sampling Date/Time: **03/16/2004 14:01** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
Method:	**CLP OLM04.2 S**							
100-01-6	4-NITROANILINE	Low	1	830	980	UJ	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	980	U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	390	U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	390	U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	390	U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	390	U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	980	U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	120	J	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	32	J	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	19	J	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	31	J	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	650		µg/Kg	
129-00-0	PYRENE	Low	1	330	830		µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	390	U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	390	U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	350	J	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	390		µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	390	U	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	390	U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	430		µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	300	J	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	380	J	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	210	J	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	68	J	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	390	U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB06-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **20** SDG ID: **2004-B**
Lab Sample ID: **WU0691-13** Sampling Date/Time: **03/16/2004 16:10** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	330	28 J	µg/Kg	
108-95-2	PHENOL	Low	1	330	410 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	410 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	410 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	410 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	410 U	µg/Kg	
98-86-2	ACETOPHENONE	Low	1	330	410 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	410 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	410 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	410 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	410 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	410 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	410 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	410 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	410 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	410 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	310 J	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	410 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	410 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	410 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	410 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	410 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	410 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	410 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,000 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	410 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	410 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,000 U	µg/Kg	
131-11-3	DIMETHYL PHTHALATE	Low	1	330	410 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	410 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	410 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,000 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	410 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,000 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,000 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	410 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	410 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	410 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	410 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	410 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB06-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **20** SDG ID: **2004-B**
Lab Sample ID: **WU0691-13** Sampling Date/Time: **03/16/2004 16:10** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
100-01-6	4-NITROANILINE	Low	1	830	1,000 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,000 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	410 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	410 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	410 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	410 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,000 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	410 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	410 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	410 U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	410 U	µg/Kg	*
206-44-0	FLUORANTHENE	Low	1	330	410 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	410 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	410 U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	410 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	410 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	410 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	410 U	µg/Kg	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	410 U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	410 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	410 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	410 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	410 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	410 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	410 UJ	µg/Kg	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB06-01D** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **20** SDG ID: **2004-B**
Lab Sample ID: **WU0691-14** Sampling Date/Time: **03/16/2004 16:10** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	330	34 J	µg/Kg	
108-95-2	PHENOL	Low	1	330	420 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	420 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	420 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	420 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	420 U	µg/Kg	
98-86-2	ACETOPHENONE	Low	1	330	420 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	420 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	420 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	420 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	420 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	420 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	420 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	420 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	420 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	420 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	280 J	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	420 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	420 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	420 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	420 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	420 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	420 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	420 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,000 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	420 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	420 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,000 UJ	µg/Kg	*
131-11-3	DIMETHYL PHTHALATE	Low	1	330	420 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	420 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	420 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,000 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	420 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,000 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,000 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	420 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	420 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	420 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	420 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	420 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB06-01D** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **20** SDG ID: **2004-B**
Lab Sample ID: **WU0691-14** Sampling Date/Time: **03/16/2004 16:10** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	1,000 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,000 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	420 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	420 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	420 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	420 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,000 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	420 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	420 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	420 UJ	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	420 U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	420 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	420 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	420 UJ	µg/Kg	*
91-94-1	3,3'-dichlorobenzidine	Low	1	330	420 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	420 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	420 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	420 UJ	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	420 UJ	µg/Kg	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	420 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	420 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	420 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	420 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	420 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	420 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB06-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **23** SDG ID: **2004-B**
Lab Sample ID: **WU0691-15** Sampling Date/Time: **03/16/2004 16:25** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	330	430 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	430 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	430 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	430 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	430 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	430 UJ	µg/Kg	*
98-86-2	ACETOPHENONE	Low	1	330	430 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	430 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	430 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	430 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	430 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	430 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	430 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	430 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	430 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	430 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	89 J	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	430 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	430 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	430 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	430 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	430 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	430 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	430 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,100 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	430 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	430 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,100 UJ	µg/Kg	*
131-11-3	DIMETHYL PHTHALATE	Low	1	330	430 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	430 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	430 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,100 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	430 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,100 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,100 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	430 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	430 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	430 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	430 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	430 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB06-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **23** SDG ID: **2004-B**
Lab Sample ID: **WU0691-15** Sampling Date/Time: **03/16/2004 16:25** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	1,100 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,100 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	430 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	430 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	430 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	430 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,100 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	430 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	430 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	430 UJ	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	430 U	µg/Kg	*
206-44-0	FLUORANTHENE	Low	1	330	430 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	430 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	430 UJ	µg/Kg	*
91-94-1	3,3'-dichlorobenzidine	Low	1	330	430 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	430 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	430 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	430 UJ	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	430 UJ	µg/Kg	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	430 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	430 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	430 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	430 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	430 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	430 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB02-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **24** SDG ID: **2004-B**
Lab Sample ID: **WU0691-16** Sampling Date/Time: **03/16/2004 15:22** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	330	440 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	440 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	440 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	440 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	440 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	440 UJ	µg/Kg	*
98-86-2	ACETOPHENONE	Low	1	330	440 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	440 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	440 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	440 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	440 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	440 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	440 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	440 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	440 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	440 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	23 J	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	440 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	440 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	440 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	440 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	440 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	440 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	440 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,100 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	440 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	440 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,100 UJ	µg/Kg	*
131-11-3	DIMETHYL PHTHALATE	Low	1	330	440 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	440 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	440 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,100 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	440 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,100 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,100 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	440 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	440 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	440 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	440 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	440 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-SB02-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **24** SDG ID: **2004-B**
Lab Sample ID: **WU0691-16** Sampling Date/Time: **03/16/2004 15:22** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	1,100 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,100 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	440 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	440 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	440 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	440 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,100 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	440 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	440 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	440 UJ	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	440 U	µg/Kg	*
206-44-0	FLUORANTHENE	Low	1	330	440 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	440 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	440 UJ	µg/Kg	*
91-94-1	3,3'-dichlorobenzidine	Low	1	330	440 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	440 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	440 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	440 UJ	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	440 UJ	µg/Kg	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	440 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	440 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	440 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	440 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	440 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	440 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB01-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **26** SDG ID: **2004-B**
Lab Sample ID: **WU0691-2** Sampling Date/Time: **03/16/2004 14:10** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-52-7	BENZALDEHYDE	Low	1	330	440 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	440 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	440 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	440 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	440 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	440 U	µg/Kg	
98-86-2	ACETOPHENONE	Low	1	330	440 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	440 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	440 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	440 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	440 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	440 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	440 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	440 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	440 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	440 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	45 J	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	440 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	440 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	440 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	440 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	440 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	440 U	µg/Kg	
88-06-2	2,4,6-trichlorophenol	Low	1	330	440 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,100 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	440 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	440 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,100 U	µg/Kg	
131-11-3	DIMETHYL PHTHALATE	Low	1	330	440 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	440 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	440 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,100 UJ	µg/Kg	*
83-32-9	ACENAPHTHENE	Low	1	330	20 J	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,100 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,100 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	14 J	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	440 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	440 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	17 J	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	440 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-SB01-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **26** SDG ID: **2004-B**
Lab Sample ID: **WU0691-2** Sampling Date/Time: **03/16/2004 14:10** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
Method: CLP OLM04.2 S								
100-01-6	4-NITROANILINE	Low	1	830	1,100	UJ	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,100	U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	440	U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	440	U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	440	U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	440	U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,100	U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	18	J	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	440	U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	440	UJ	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	440	U	µg/Kg	*
206-44-0	FLUORANTHENE	Low	1	330	120	J	µg/Kg	
129-00-0	PYRENE	Low	1	330	120	J	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	440	U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	440	U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	68	J	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	68	J	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	440	U	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	440	U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	68	J	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	50	J	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	54	J	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	28	J	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	440	U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	440	U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB02-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **10** SDG ID: **2004-B**
Lab Sample ID: **WU0691-4** Sampling Date/Time: **03/16/2004 14:50** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-52-7	BENZALDEHYDE	Low	1	330	370 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	370 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	370 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	370 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	370 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	370 U	µg/Kg	
98-86-2	ACETOPHENONE	Low	1	330	370 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	370 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	370 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	370 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	370 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	370 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	370 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	370 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	370 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	370 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	140 J	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	370 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	370 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	370 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	370 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	370 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	370 U	µg/Kg	
88-06-2	2,4,6-trichlorophenol	Low	1	330	370 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	920 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	370 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	370 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	920 U	µg/Kg	
131-11-3	DIMETHYL PHTHALATE	Low	1	330	370 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	370 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	370 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	920 UJ	µg/Kg	*
83-32-9	ACENAPHTHENE	Low	1	330	370 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	920 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	920 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	370 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	370 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	370 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	370 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	370 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB02-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **10** SDG ID: **2004-B**
Lab Sample ID: **WU0691-4** Sampling Date/Time: **03/16/2004 14:50** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
Method:	**CLP OLM04.2 S**							
100-01-6	4-NITROANILINE	Low	1	830	920	UJ	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	920	U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	370	U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	370	U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	370	U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	370	U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	920	U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	370	U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	370	U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	370	UJ	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	370	U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	370	U	µg/Kg	
129-00-0	PYRENE	Low	1	330	370	U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	370	U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	370	U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	370	U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	370	U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	370	U	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	370	U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	370	U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	370	U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	370	U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	370	U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	370	U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	370	U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB02-01D** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **15** SDG ID: **2004-B**
Lab Sample ID: **WU0691-5** Sampling Date/Time: **03/16/2004 14:50** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	330	390 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	390 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	390 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	390 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	390 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	390 U	µg/Kg	
98-86-2	ACETOPHENONE	Low	1	330	390 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	390 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	390 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	390 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	390 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	390 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	390 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	390 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	390 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	390 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	220 J	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	390 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	390 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	390 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	390 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	390 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	390 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	390 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	980 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	390 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	390 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	980 U	µg/Kg	
131-11-3	DIMETHYL PHTHALATE	Low	1	330	390 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	390 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	390 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	980 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	390 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	980 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	980 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	390 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	390 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	390 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	390 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	390 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB02-01D** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **15** SDG ID: **2004-B**
Lab Sample ID: **WU0691-5** Sampling Date/Time: **03/16/2004 14:50** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	980 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	980 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	390 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	390 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	390 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	390 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	980 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	390 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	390 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	390 U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	390 U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	390 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	390 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	390 U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	390 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	390 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	390 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	390 U	µg/Kg	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	390 U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	390 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	390 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	390 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	390 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	390 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	390 UJ	µg/Kg	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB03-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **14** SDG ID: **2004-B**
Lab Sample ID: **WU0691-6** Sampling Date/Time: **03/16/2004 15:51** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	330	23 J	µg/Kg	
108-95-2	PHENOL	Low	1	330	380 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	380 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	380 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	380 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	380 U	µg/Kg	
98-86-2	ACETOPHENONE	Low	1	330	380 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	380 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	380 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	380 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	380 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	380 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	380 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	380 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	380 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	380 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	18 J	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	380 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	380 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	380 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	380 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	380 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	380 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	380 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	970 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	380 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	380 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	970 U	µg/Kg	
131-11-3	DIMETHYL PHTHALATE	Low	1	330	380 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	380 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	380 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	970 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	380 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	970 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	970 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	380 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	380 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	380 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	380 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	380 U	µg/Kg	

U - Non-detected
J - Estimated
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R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB03-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **14** SDG ID: **2004-B**
Lab Sample ID: **WU0691-6** Sampling Date/Time: **03/16/2004 15:51** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	970 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	970 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	380 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	380 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	380 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	380 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	970 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	380 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	380 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	380 U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	380 U	µg/Kg	*
206-44-0	FLUORANTHENE	Low	1	330	380 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	380 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	380 U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	380 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	380 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	380 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	380 U	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	380 U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	380 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	380 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	380 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	380 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	380 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	380 UJ	µg/Kg	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB04-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **33** SDG ID: **2004-B**
Lab Sample ID: **WU0691-8** Sampling Date/Time: **03/16/2004 15:10** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	330	490 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	490 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	490 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	490 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	490 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	490 U	µg/Kg	
98-86-2	ACETOPHENONE	Low	1	330	490 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	490 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	490 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	490 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	490 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	490 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	490 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	490 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	490 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	490 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	490 U	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	490 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	490 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	490 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	490 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	490 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	490 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	490 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,200 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	490 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	490 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,200 U	µg/Kg	
131-11-3	DIMETHYL PHTHALATE	Low	1	330	490 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	490 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	490 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,200 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	490 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,200 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,200 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	490 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	490 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	490 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	490 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	490 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB04-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **33** SDG ID: **2004-B**
Lab Sample ID: **WU0691-8** Sampling Date/Time: **03/16/2004 15:10** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	1,200 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,200 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	490 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	490 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	490 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	490 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,200 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	490 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	490 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	490 U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	490 U	µg/Kg	*
206-44-0	FLUORANTHENE	Low	1	330	67 J	µg/Kg	
129-00-0	PYRENE	Low	1	330	68 J	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	490 U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	490 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	42 J	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	50 J	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	490 U	µg/Kg	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	490 U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	72 J	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	39 J	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	43 J	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	32 J	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	490 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	490 UJ	µg/Kg	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-SB04-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **20** SDG ID: **2004-B**
Lab Sample ID: **WU0691-9** Sampling Date/Time: **03/16/2004 15:15** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-52-7	BENZALDEHYDE	Low	1	330	410 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	410 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	410 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	410 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	410 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	410 U	µg/Kg	
98-86-2	ACETOPHENONE	Low	1	330	410 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	410 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	410 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	410 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	410 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	410 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	410 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	410 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	410 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	410 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	410 U	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	410 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	410 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	410 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	410 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	410 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	410 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	410 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,000 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	410 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	410 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,000 U	µg/Kg	
131-11-3	DIMETHYL PHTHALATE	Low	1	330	410 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	410 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	410 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,000 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	410 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,000 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,000 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	410 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	410 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	410 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	410 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	410 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB04-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **20** SDG ID: **2004-B**
Lab Sample ID: **WU0691-9** Sampling Date/Time: **03/16/2004 15:15** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	1,000 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,000 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	410 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	410 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	410 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	410 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,000 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	410 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	410 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	410 U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	410 U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	410 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	410 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	410 U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	410 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	410 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	410 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	410 U	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	410 U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	410 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	410 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	410 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	410 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	410 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	410 UJ	µg/Kg	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW05** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-1** Sampling Date/Time: **03/17/2004 9:55** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L	
108-95-2	PHENOL	Low	1	10	10 U	µg/L	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L	
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L	
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L	
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L	
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L	
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L	
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L	
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L	
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L	
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L	
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L	
91-20-3	NAPHTHALENE	Low	1	10	10 U	µg/L	
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L	
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L	
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L	
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L	
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 UJ	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L	
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L	
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L	
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L	
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L	
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L	
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L	
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L	
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L	
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L	
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L	
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L	
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L	
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L	
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L	
86-73-7	FLUORENE	Low	1	10	10 U	µg/L	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
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B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-GW05** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-1** Sampling Date/Time: **03/17/2004 9:55** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW07-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-11** Sampling Date/Time: **03/18/2004 15:45** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	10	10 R	µg/L	*
108-95-2	PHENOL	Low	1	10	10 R	µg/L	*
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 R	µg/L	*
95-57-8	2-chlorophenol	Low	1	10	10 R	µg/L	*
95-48-7	2-methylphenol	Low	1	10	10 R	µg/L	*
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L	
98-86-2	ACETOPHENONE	Low	1	10	10 R	µg/L	*
106-44-5	4-methylphenol	Low	1	10	10 R	µg/L	*
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 R	µg/L	*
67-72-1	HEXACHLOROETHANE	Low	1	10	10 R	µg/L	*
98-95-3	NITROBENZENE	Low	1	10	10 R	µg/L	*
78-59-1	ISOPHORONE	Low	1	10	10 R	µg/L	*
88-75-5	2-nitrophenol	Low	1	10	10 R	µg/L	*
105-67-9	2,4-dimethylphenol	Low	1	10	12 R	µg/L	*
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 R	µg/L	*
120-83-2	2,4-dichlorophenol	Low	1	10	10 R	µg/L	*
91-20-3	NAPHTHALENE	Low	1	10	100 R	µg/L	*
106-47-8	4-chloroaniline	Low	1	10	10 R	µg/L	*
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 R	µg/L	*
105-60-2	CAPROLACTAM	Low	1	10	10 R	µg/L	*
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 R	µg/L	*
91-57-6	2-methylnaphthalene	Low	1	10	10 R	µg/L	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 R	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 R	µg/L	*
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 R	µg/L	*
92-52-4	1,1-Biphenyl	Low	1	10	10 R	µg/L	*
91-58-7	2-chloronaphthalene	Low	1	10	10 R	µg/L	*
88-74-4	2-nitroaniline	Low	1	25	25 R	µg/L	*
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 R	µg/L	*
606-20-2	2,6-dinitrotoluene	Low	1	10	10 R	µg/L	*
208-96-8	ACENAPHTHYLENE	Low	1	10	10 R	µg/L	*
99-09-2	3-nitroaniline	Low	1	25	25 R	µg/L	*
83-32-9	ACENAPHTHENE	Low	1	10	10 R	µg/L	*
51-28-5	2,4-dinitrophenol	Low	1	25	25 R	µg/L	*
100-02-7	4-NITROPHENOL	Low	1	25	25 R	µg/L	*
132-64-9	DIBENZOFURAN	Low	1	10	10 R	µg/L	*
121-14-2	2,4-dinitrotoluene	Low	1	10	10 R	µg/L	*
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 R	µg/L	*
86-73-7	FLUORENE	Low	1	10	10 R	µg/L	*
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 R	µg/L	*

U - Non-detected
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R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-GW07-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-11** Sampling Date/Time: **03/18/2004 15:45** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
100-01-6	4-NITROANILINE	Low	1	25	25 R	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 R	µg/L	*
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 R	µg/L	*
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 R	µg/L	*
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 R	µg/L	*
1912-24-9	ATRAZINE	Low	1	10	10 R	µg/L	*
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 R	µg/L	*
85-01-8	PHENANTHRENE	Low	1	10	10 R	µg/L	*
120-12-7	ANTHRACENE	Low	1	10	10 R	µg/L	*
86-74-8	CARBAZOLE	Low	1	10	10 R	µg/L	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 R	µg/L	*
206-44-0	FLUORANTHENE	Low	1	10	10 R	µg/L	*
129-00-0	PYRENE	Low	1	10	10 R	µg/L	*
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 R	µg/L	*
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 R	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 R	µg/L	*
218-01-9	CHRYSENE	Low	1	10	10 R	µg/L	*
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 R	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 R	µg/L	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 R	µg/L	*
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 R	µg/L	*
50-32-8	BENZO(A)PYRENE	Low	1	10	10 R	µg/L	*
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 R	µg/L	*
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 R	µg/L	*
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 R	µg/L	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW07-01DLDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-11DL** Sampling Date/Time: **03/18/2004 0:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	2	10	19 U	µg/L	
108-95-2	PHENOL	Low	2	10	19 U	µg/L	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	2	10	19 U	µg/L	
95-57-8	2-chlorophenol	Low	2	10	19 U	µg/L	
95-48-7	2-methylphenol	Low	2	10	19 U	µg/L	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	2	10	19 U	µg/L	
98-86-2	ACETOPHENONE	Low	2	10	19 U	µg/L	
106-44-5	4-methylphenol	Low	2	10	19 U	µg/L	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	2	10	19 U	µg/L	
67-72-1	HEXACHLOROETHANE	Low	2	10	19 U	µg/L	
98-95-3	NITROBENZENE	Low	2	10	19 U	µg/L	
78-59-1	ISOPHORONE	Low	2	10	19 U	µg/L	
88-75-5	2-nitrophenol	Low	2	10	19 U	µg/L	
105-67-9	2,4-dimethylphenol	Low	2	10	12 J	µg/L	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	2	10	19 U	µg/L	
120-83-2	2,4-dichlorophenol	Low	2	10	19 U	µg/L	
91-20-3	NAPHTHALENE	Low	2	10	98	µg/L	
106-47-8	4-chloroaniline	Low	2	10	19 U	µg/L	
87-68-3	HEXACHLOROBUTADIENE	Low	2	10	19 U	µg/L	
105-60-2	CAPROLACTAM	Low	2	10	19 U	µg/L	
59-50-7	4-chloro-3-methylphenol	Low	2	10	19 U	µg/L	
91-57-6	2-methylnaphthalene	Low	2	10	19 U	µg/L	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	2	10	19 UJ	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	2	10	19 U	µg/L	
95-95-4	2,4,5-trichlorophenol	Low	2	25	47 U	µg/L	
92-52-4	1,1-Biphenyl	Low	2	10	19 U	µg/L	
91-58-7	2-chloronaphthalene	Low	2	10	19 U	µg/L	
88-74-4	2-nitroaniline	Low	2	25	47 U	µg/L	
131-11-3	DIMETHYL PHTHALATE	Low	2	10	19 U	µg/L	
606-20-2	2,6-dinitrotoluene	Low	2	10	19 U	µg/L	
208-96-8	ACENAPHTHYLENE	Low	2	10	19 U	µg/L	
99-09-2	3-nitroaniline	Low	2	25	47 U	µg/L	
83-32-9	ACENAPHTHENE	Low	2	10	19 U	µg/L	
51-28-5	2,4-dinitrophenol	Low	2	25	47 U	µg/L	
100-02-7	4-NITROPHENOL	Low	2	25	47 U	µg/L	
132-64-9	DIBENZOFURAN	Low	2	10	19 U	µg/L	
121-14-2	2,4-dinitrotoluene	Low	2	10	19 U	µg/L	
84-66-2	DIETHYL PHTHALATE	Low	2	10	19 U	µg/L	
86-73-7	FLUORENE	Low	2	10	19 U	µg/L	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	2	10	19 U	µg/L	

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TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW07-01DLDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-11DL** Sampling Date/Time: **03/18/2004 0:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-01-6	4-NITROANILINE	Low	2	25	47 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	2	25	47 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	2	10	19 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	2	10	19 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	2	10	19 U	µg/L	
1912-24-9	ATRAZINE	Low	2	10	19 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	2	25	47 U	µg/L	
85-01-8	PHENANTHRENE	Low	2	10	19 U	µg/L	
120-12-7	ANTHRACENE	Low	2	10	19 U	µg/L	
86-74-8	CARBAZOLE	Low	2	10	19 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	2	10	19 U	µg/L	
206-44-0	FLUORANTHENE	Low	2	10	19 U	µg/L	
129-00-0	PYRENE	Low	2	10	19 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	2	10	19 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	2	10	19 UJ	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	2	10	19 U	µg/L	
218-01-9	CHRYSENE	Low	2	10	19 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	2	10	19 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	2	10	19 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	2	10	19 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	2	10	19 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	2	10	19 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	2	10	19 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	2	10	19 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	2	10	19 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW06-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-2** Sampling Date/Time: **03/17/2004 12:15** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-52-7	BENZALDEHYDE	Low	1	10	10	U	µg/L	
108-95-2	PHENOL	Low	1	10	10	U	µg/L	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10	U	µg/L	
95-57-8	2-chlorophenol	Low	1	10	10	U	µg/L	
95-48-7	2-methylphenol	Low	40	400	410	D	µg/L	*
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10	U	µg/L	
98-86-2	ACETOPHENONE	Low	1	10	10	U	µg/L	
106-44-5	4-methylphenol	Low	40	400	250	DJ	µg/L	*
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10	U	µg/L	
67-72-1	HEXACHLOROETHANE	Low	1	10	10	U	µg/L	
98-95-3	NITROBENZENE	Low	1	10	10	U	µg/L	
78-59-1	ISOPHORONE	Low	1	10	10	U	µg/L	
88-75-5	2-nitrophenol	Low	1	10	10	U	µg/L	
105-67-9	2,4-dimethylphenol	Low	40	400	990	D	µg/L	*
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10	U	µg/L	
120-83-2	2,4-dichlorophenol	Low	1	10	10	U	µg/L	
91-20-3	NAPHTHALENE	Low	40	400	2,100	D	µg/L	*
106-47-8	4-chloroaniline	Low	1	10	10	U	µg/L	
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10	U	µg/L	
105-60-2	CAPROLACTAM	Low	1	10	10	U	µg/L	
59-50-7	4-chloro-3-methylphenol	Low	1	10	10	U	µg/L	
91-57-6	2-methylnaphthalene	Low	40	400	480	D	µg/L	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10	UJ	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	1	10	10	U	µg/L	
95-95-4	2,4,5-trichlorophenol	Low	1	25	25	U	µg/L	
92-52-4	1,1-Biphenyl	Low	1	10	36		µg/L	
91-58-7	2-chloronaphthalene	Low	1	10	10	U	µg/L	
88-74-4	2-nitroaniline	Low	1	25	25	U	µg/L	
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10	U	µg/L	
606-20-2	2,6-dinitrotoluene	Low	1	10	10	U	µg/L	
208-96-8	ACENAPHTHYLENE	Low	1	10	10	U	µg/L	
99-09-2	3-nitroaniline	Low	1	25	25	U	µg/L	
83-32-9	ACENAPHTHENE	Low	40	400	280	DJ	µg/L	*
51-28-5	2,4-dinitrophenol	Low	1	25	25	U	µg/L	
100-02-7	4-NITROPHENOL	Low	1	25	25	U	µg/L	
132-64-9	DIBENZOFURAN	Low	1	10	73		µg/L	
121-14-2	2,4-dinitrotoluene	Low	1	10	10	U	µg/L	
84-66-2	DIETHYL PHTHALATE	Low	1	10	10	U	µg/L	
86-73-7	FLUORENE	Low	1	10	46		µg/L	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10	U	µg/L	

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D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
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Client Sample ID: **SWMU318-GW06-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-2** Sampling Date/Time: **03/17/2004 12:15** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	26	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

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D - (Lab qualifier) Reported from a dilution
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RL - Reporting limit
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Client Sample ID:	**SWMU318-GW06-01DLDL**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample Dilution**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0717-2DL2**	Sampling Date/Time:	**03/17/2004 0:00**	SDG Page:	

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
100-52-7	BENZALDEHYDE	Low	40	10	380 R	µg/L	*
108-95-2	PHENOL	Low	40	10	380 R	µg/L	*
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	40	10	380 R	µg/L	*
95-57-8	2-chlorophenol	Low	40	10	380 R	µg/L	*
95-48-7	2-methylphenol	Low	40	10	410 R	µg/L	*
108-60-1	2,2'-oxybis (1-chloropropane)	Low	40	10	380 R	µg/L	*
98-86-2	ACETOPHENONE	Low	40	10	380 R	µg/L	*
106-44-5	4-methylphenol	Low	40	10	250 R	µg/L	*
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	40	10	380 R	µg/L	*
67-72-1	HEXACHLOROETHANE	Low	40	10	380 R	µg/L	*
98-95-3	NITROBENZENE	Low	40	10	380 R	µg/L	*
78-59-1	ISOPHORONE	Low	40	10	380 R	µg/L	*
88-75-5	2-nitrophenol	Low	40	10	380 R	µg/L	*
105-67-9	2,4-dimethylphenol	Low	40	10	990 R	µg/L	*
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	40	10	380 R	µg/L	*
120-83-2	2,4-dichlorophenol	Low	40	10	380 R	µg/L	*
91-20-3	NAPHTHALENE	Low	40	10	2,100 R	µg/L	*
106-47-8	4-chloroaniline	Low	40	10	380 R	µg/L	*
87-68-3	HEXACHLOROBUTADIENE	Low	40	10	380 R	µg/L	*
105-60-2	CAPROLACTAM	Low	40	10	380 R	µg/L	*
59-50-7	4-chloro-3-methylphenol	Low	40	10	380 R	µg/L	*
91-57-6	2-methylnaphthalene	Low	40	10	480 R	µg/L	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	40	10	380 R	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	40	10	380 R	µg/L	*
95-95-4	2,4,5-trichlorophenol	Low	40	25	940 R	µg/L	*
92-52-4	1,1-Biphenyl	Low	40	10	380 R	µg/L	*
91-58-7	2-chloronaphthalene	Low	40	10	380 R	µg/L	*
88-74-4	2-nitroaniline	Low	40	25	940 R	µg/L	*
131-11-3	DIMETHYL PHTHALATE	Low	40	10	380 R	µg/L	*
606-20-2	2,6-dinitrotoluene	Low	40	10	380 R	µg/L	*
208-96-8	ACENAPHTHYLENE	Low	40	10	380 R	µg/L	*
99-09-2	3-nitroaniline	Low	40	25	940 R	µg/L	*
83-32-9	ACENAPHTHENE	Low	40	10	280 R	µg/L	*
51-28-5	2,4-dinitrophenol	Low	40	25	940 R	µg/L	*
100-02-7	4-NITROPHENOL	Low	40	25	940 R	µg/L	*
132-64-9	DIBENZOFURAN	Low	40	10	380 R	µg/L	*
121-14-2	2,4-dinitrotoluene	Low	40	10	380 R	µg/L	*
84-66-2	DIETHYL PHTHALATE	Low	40	10	380 R	µg/L	*
86-73-7	FLUORENE	Low	40	10	380 R	µg/L	*
7005-72-3	4-chlorophenyl Phenyl Ether	Low	40	10	380 R	µg/L	*

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D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit

***** - Modification by data validation

Client Sample ID: **SWMU318-GW06-01DLDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-2DL2** Sampling Date/Time: **03/17/2004 0:00** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	40	25	940 R	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	40	25	940 R	µg/L	*
86-30-6	N-NITROSODIPHENYLAMINE	Low	40	10	380 R	µg/L	*
101-55-3	4-bromophenyl Phenyl Ether	Low	40	10	380 R	µg/L	*
118-74-1	HEXACHLOROBENZENE	Low	40	10	380 R	µg/L	*
1912-24-9	ATRAZINE	Low	40	10	380 R	µg/L	*
87-86-5	PENTACHLOROPHENOL	Low	40	25	940 R	µg/L	*
85-01-8	PHENANTHRENE	Low	40	10	380 R	µg/L	*
120-12-7	ANTHRACENE	Low	40	10	380 R	µg/L	*
86-74-8	CARBAZOLE	Low	40	10	380 R	µg/L	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	40	10	380 R	µg/L	*
206-44-0	FLUORANTHENE	Low	40	10	380 R	µg/L	*
129-00-0	PYRENE	Low	40	10	380 R	µg/L	*
85-68-7	BUTYL BENZYL PHTHALATE	Low	40	10	380 R	µg/L	*
91-94-1	3,3'-dichlorobenzidine	Low	40	10	380 R	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	40	10	380 R	µg/L	*
218-01-9	CHRYSENE	Low	40	10	380 R	µg/L	*
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	40	10	380 R	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	40	10	380 R	µg/L	*
205-99-2	BENZO(B)FLUORANTHENE	Low	40	10	380 R	µg/L	*
207-08-9	BENZO(K)FLUORANTHENE	Low	40	10	380 R	µg/L	*
50-32-8	BENZO(A)PYRENE	Low	40	10	380 R	µg/L	*
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	40	10	380 R	µg/L	*
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	40	10	380 R	µg/L	*
191-24-2	BENZO[G,H,I]PERYLENE	Low	40	10	380 R	µg/L	*

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J - Estimated
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R - Unusable
B - (Lab qualifier) Found in the associated method blank
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TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW02** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-3** Sampling Date/Time: **03/17/2004 18:10** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L	
108-95-2	PHENOL	Low	1	10	10 U	µg/L	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L	
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L	
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L	
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L	
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L	
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L	
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L	
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L	
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L	
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L	
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L	
91-20-3	NAPHTHALENE	Low	1	10	10 U	µg/L	
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L	
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L	
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L	
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L	
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 UJ	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L	
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L	
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L	
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L	
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L	
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L	
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L	
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L	
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L	
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L	
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L	
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L	
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L	
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L	
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L	
86-73-7	FLUORENE	Low	1	10	10 U	µg/L	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
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RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW02** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-3** Sampling Date/Time: **03/17/2004 18:10** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

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J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW02D** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-4** Sampling Date/Time: **03/17/2004 18:10** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L	
108-95-2	PHENOL	Low	1	10	10 U	µg/L	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L	
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L	
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L	
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L	
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L	
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L	
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L	
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L	
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L	
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L	
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L	
91-20-3	NAPHTHALENE	Low	1	10	10 U	µg/L	
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L	
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L	
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L	
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L	
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 UJ	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L	
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L	
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L	
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L	
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L	
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L	
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L	
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L	
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L	
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L	
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L	
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L	
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L	
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L	
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L	
86-73-7	FLUORENE	Low	1	10	10 U	µg/L	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L	

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J - Estimated
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TIC - Tentatively identified compound
RL - Reporting limit
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Client Sample ID: **SWMU318-GW02D** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-4** Sampling Date/Time: **03/17/2004 18:10** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

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D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
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Client Sample ID: **SWMU318-GW08-01RE** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Re-extraction/Re-analysis** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-5RA** Sampling Date/Time: **03/17/2004 0:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L	
108-95-2	PHENOL	Low	1	10	10 U	µg/L	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L	
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L	
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L	
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L	
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L	
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L	
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L	
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L	
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L	
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L	
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L	
91-20-3	NAPHTHALENE	Low	1	10	10 U	µg/L	
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L	
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L	
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L	
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L	
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 U	µg/L	
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L	
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L	
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L	
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L	
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L	
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L	
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L	

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D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-GW08-01RE** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Re-extraction/Re-analysis** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-5RA** Sampling Date/Time: **03/17/2004 0:00** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L	
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L	
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L	
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L	
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L	
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L	
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L	
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L	
86-73-7	FLUORENE	Low	1	10	10 U	µg/L	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 UJ	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

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R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-GW04** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-6** Sampling Date/Time: **03/18/2004 8:25** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L	
108-95-2	PHENOL	Low	1	10	10 U	µg/L	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L	
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L	
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L	
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L	
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L	
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L	
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L	
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L	
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L	
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L	
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L	
91-20-3	NAPHTHALENE	Low	1	10	12	µg/L	
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L	
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L	
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L	
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L	
91-57-6	2-methylnaphthalene	Low	1	10	8 J	µg/L	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 UJ	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L	
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L	
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L	
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L	
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L	
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L	
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L	
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L	
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L	
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L	
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L	
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L	
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L	
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L	
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L	
86-73-7	FLUORENE	Low	1	10	10 U	µg/L	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-GW04** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-6** Sampling Date/Time: **03/18/2004 8:25** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW03** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-8** Sampling Date/Time: **03/18/2004 11:30** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L	
108-95-2	PHENOL	Low	1	10	10 U	µg/L	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L	
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L	
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L	
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L	
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L	
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L	
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L	
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L	
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L	
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L	
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L	
91-20-3	NAPHTHALENE	Low	1	10	10 U	µg/L	
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L	
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L	
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L	
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L	
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 UJ	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L	
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L	
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L	
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L	
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L	
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L	
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L	
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L	
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L	
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L	
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L	
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L	
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L	
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L	
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L	
86-73-7	FLUORENE	Low	1	10	10 U	µg/L	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW03** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0717-8** Sampling Date/Time: **03/18/2004 11:30** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB05-02D** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0732-1** Sampling Date/Time: **03/16/2004 16:50** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
100-52-7	BENZALDEHYDE	Low	1	330	400 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	400 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	400 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	400 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	400 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	400 UJ	µg/Kg	*
98-86-2	ACETOPHENONE	Low	1	330	400 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	400 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	400 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	400 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	400 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	400 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	400 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	400 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	400 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	400 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	400 U	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	400 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	400 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	400 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	400 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	400 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	400 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	400 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,000 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	400 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	400 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,000 UJ	µg/Kg	*
131-11-3	DIMETHYL PHTHALATE	Low	1	330	400 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	400 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	400 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,000 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	400 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,000 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,000 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	400 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	400 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	400 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	400 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	400 U	µg/Kg	

U - Non-detected
J - Estimated
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R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-SB05-02D** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0732-1** Sampling Date/Time: **03/16/2004 16:50** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	1,000 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,000 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	400 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	400 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	400 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	400 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,000 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	400 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	400 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	400 UJ	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	400 U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	400 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	400 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	400 UJ	µg/Kg	*
91-94-1	3,3'-dichlorobenzidine	Low	1	330	400 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	400 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	400 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	400 UJ	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	400 UJ	µg/Kg	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	400 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	400 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	400 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	400 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	400 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	400 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB05-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **23** SDG ID: **2004-B**
Lab Sample ID: **WU0732-2** Sampling Date/Time: **03/16/2004 16:50** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	330	430 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	430 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	430 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	430 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	430 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	430 UJ	µg/Kg	*
98-86-2	ACETOPHENONE	Low	1	330	430 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	430 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	430 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	430 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	430 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	430 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	430 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	430 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	430 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	430 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	430 U	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	430 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	430 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	430 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	430 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	430 UJ	µg/Kg	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	430 U	µg/Kg	
88-06-2	2,4,6-trichlorophenol	Low	1	330	430 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,100 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	430 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	430 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,100 UJ	µg/Kg	*
131-11-3	DIMETHYL PHTHALATE	Low	1	330	430 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	430 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	430 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,100 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	430 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,100 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,100 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	430 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	430 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	430 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	430 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	430 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB05-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **23** SDG ID: **2004-B**
Lab Sample ID: **WU0732-2** Sampling Date/Time: **03/16/2004 16:50** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	1,100 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,100 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	430 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	430 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	430 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	430 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,100 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	430 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	430 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	430 UJ	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	430 UJ	µg/Kg	*
206-44-0	FLUORANTHENE	Low	1	330	430 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	430 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	430 UJ	µg/Kg	*
91-94-1	3,3'-dichlorobenzidine	Low	1	330	430 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	430 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	430 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	430 UJ	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	430 UJ	µg/Kg	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	430 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	430 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	430 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	430 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	430 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	430 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB05-03** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0732-3** Sampling Date/Time: **03/16/2004 17:18** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	330	18 J	µg/Kg	
108-95-2	PHENOL	Low	1	330	400 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	400 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	400 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	400 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	400 UJ	µg/Kg	*
98-86-2	ACETOPHENONE	Low	1	330	400 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	400 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	400 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	400 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	400 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	400 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	400 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	400 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	400 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	400 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	400 U	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	400 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	400 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	400 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	400 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	400 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	400 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	400 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,000 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	400 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	400 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,000 UJ	µg/Kg	*
131-11-3	DIMETHYL PHTHALATE	Low	1	330	400 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	400 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	400 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,000 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	400 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,000 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,000 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	400 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	400 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	400 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	400 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	400 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB05-03** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0732-3** Sampling Date/Time: **03/16/2004 17:18** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
Method: CLP OLM04.2 S								
100-01-6	4-NITROANILINE	Low	1	830	1,000	U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,000	U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	400	U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	400	U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	400	U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	400	U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,000	U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	170	J	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	31	J	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	65	J	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	2	800	4,600	D	µg/Kg	*
206-44-0	FLUORANTHENE	Low	1	330	3,000		µg/Kg	
129-00-0	PYRENE	Low	1	330	2,200		µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	400	U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	87	J	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	1,200		µg/Kg	
218-01-9	CHRYSENE	Low	1	330	1,900		µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	400	UJ	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	400	UJ	µg/Kg	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	1,500		µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	1,200		µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	820		µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	440		µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	180	J	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	130	J	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID:	**SWMU318-SB05-03DLDL**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample Dilution**	% Moisture:	**18**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0732-3DL**	Sampling Date/Time:	**03/16/2004 17:18**	SDG Page:	

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-52-7	BENZALDEHYDE	Low	2	330	21	R	µg/Kg	*
108-95-2	PHENOL	Low	2	330	800	R	µg/Kg	*
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	2	330	800	R	µg/Kg	*
95-57-8	2-chlorophenol	Low	2	330	800	R	µg/Kg	*
95-48-7	2-methylphenol	Low	2	330	800	R	µg/Kg	*
108-60-1	2,2'-oxybis (1-chloropropane)	Low	2	330	800	R	µg/Kg	*
98-86-2	ACETOPHENONE	Low	2	330	800	R	µg/Kg	*
106-44-5	4-methylphenol	Low	2	330	800	R	µg/Kg	*
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	2	330	800	R	µg/Kg	*
67-72-1	HEXACHLOROETHANE	Low	2	330	800	R	µg/Kg	*
98-95-3	NITROBENZENE	Low	2	330	800	R	µg/Kg	*
78-59-1	ISOPHORONE	Low	2	330	800	R	µg/Kg	*
88-75-5	2-nitrophenol	Low	2	330	800	R	µg/Kg	*
105-67-9	2,4-dimethylphenol	Low	2	330	800	R	µg/Kg	*
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	2	330	800	R	µg/Kg	*
120-83-2	2,4-dichlorophenol	Low	2	330	800	R	µg/Kg	*
91-20-3	NAPHTHALENE	Low	2	330	800	R	µg/Kg	*
106-47-8	4-chloroaniline	Low	2	330	800	R	µg/Kg	*
87-68-3	HEXACHLOROBUTADIENE	Low	2	330	800	R	µg/Kg	*
105-60-2	CAPROLACTAM	Low	2	330	800	R	µg/Kg	*
59-50-7	4-chloro-3-methylphenol	Low	2	330	800	R	µg/Kg	*
91-57-6	2-methylnaphthalene	Low	2	330	800	R	µg/Kg	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	2	330	800	R	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	2	330	800	R	µg/Kg	*
95-95-4	2,4,5-trichlorophenol	Low	2	830	2,000	R	µg/Kg	*
92-52-4	1,1-Biphenyl	Low	2	330	800	R	µg/Kg	*
91-58-7	2-chloronaphthalene	Low	2	330	800	R	µg/Kg	*
88-74-4	2-nitroaniline	Low	2	830	2,000	R	µg/Kg	*
131-11-3	DIMETHYL PHTHALATE	Low	2	330	800	R	µg/Kg	*
606-20-2	2,6-dinitrotoluene	Low	2	330	800	R	µg/Kg	*
208-96-8	ACENAPHTHYLENE	Low	2	330	800	R	µg/Kg	*
99-09-2	3-nitroaniline	Low	2	830	2,000	R	µg/Kg	*
83-32-9	ACENAPHTHENE	Low	2	330	800	R	µg/Kg	*
51-28-5	2,4-dinitrophenol	Low	2	830	2,000	R	µg/Kg	*
100-02-7	4-NITROPHENOL	Low	2	830	2,000	R	µg/Kg	*
132-64-9	DIBENZOFURAN	Low	2	330	800	R	µg/Kg	*
121-14-2	2,4-dinitrotoluene	Low	2	330	800	R	µg/Kg	*
84-66-2	DIETHYL PHTHALATE	Low	2	330	800	R	µg/Kg	*
86-73-7	FLUORENE	Low	2	330	800	R	µg/Kg	*
7005-72-3	4-chlorophenyl Phenyl Ether	Low	2	330	800	R	µg/Kg	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit

***** - Modification by data validation

Client Sample ID: **SWMU318-SB05-03DLDL** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0732-3DL** Sampling Date/Time: **03/16/2004 17:18** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	2	830	2,000 R	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	2	830	2,000 R	µg/Kg	*
86-30-6	N-NITROSODIPHENYLAMINE	Low	2	330	800 R	µg/Kg	*
101-55-3	4-bromophenyl Phenyl Ether	Low	2	330	800 R	µg/Kg	*
118-74-1	HEXACHLOROBENZENE	Low	2	330	800 R	µg/Kg	*
1912-24-9	ATRAZINE	Low	2	330	800 R	µg/Kg	*
87-86-5	PENTACHLOROPHENOL	Low	2	830	2,000 R	µg/Kg	*
85-01-8	PHENANTHRENE	Low	2	330	170 R	µg/Kg	*
120-12-7	ANTHRACENE	Low	2	330	28 R	µg/Kg	*
86-74-8	CARBAZOLE	Low	2	330	61 R	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	2	330	4,600 R	µg/Kg	*
206-44-0	FLUORANTHENE	Low	2	330	3,600 R	µg/Kg	*
129-00-0	PYRENE	Low	2	330	3,400 R	µg/Kg	*
85-68-7	BUTYL BENZYL PHTHALATE	Low	2	330	800 R	µg/Kg	*
91-94-1	3,3'-dichlorobenzidine	Low	2	330	800 R	µg/Kg	*
56-55-3	BENZO(A)ANTHRACENE	Low	2	330	1,300 R	µg/Kg	*
218-01-9	CHRYSENE	Low	2	330	2,200 R	µg/Kg	*
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	2	330	190 R	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	2	330	800 R	µg/Kg	*
205-99-2	BENZO(B)FLUORANTHENE	Low	2	330	1,700 R	µg/Kg	*
207-08-9	BENZO(K)FLUORANTHENE	Low	2	330	1,300 R	µg/Kg	*
50-32-8	BENZO(A)PYRENE	Low	2	330	820 R	µg/Kg	*
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	2	330	440 R	µg/Kg	*
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	2	330	120 R	µg/Kg	*
191-24-2	BENZO[G,H,I]PERYLENE	Low	2	330	140 R	µg/Kg	*

U - Non-detected
J - Estimated
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R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB03-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0744-1** Sampling Date/Time: **03/17/2004 13:38** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
78-59-1	ISOPHORONE	Low	1	330	400 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	400 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	400 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	400 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	400 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	400 U	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	400 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	400 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	400 U	µg/Kg	
100-52-7	BENZALDEHYDE	Low	1	330	400 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	400 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	400 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	400 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	400 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	400 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	400 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	400 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	400 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	400 UJ	µg/Kg	*
98-86-2	ACETOPHENONE	Low	1	330	400 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	400 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	400 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	400 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	400 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	400 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	400 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	400 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	400 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,000 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	400 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	400 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,000 UJ	µg/Kg	*
131-11-3	DIMETHYL PHTHALATE	Low	1	330	400 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	400 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	400 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,000 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	400 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,000 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,000 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	400 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB03-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0744-1** Sampling Date/Time: **03/17/2004 13:38** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	1,000 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,000 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	400 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	400 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	400 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	400 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,000 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	400 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	400 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	400 UJ	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	400 U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	400 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	400 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	400 UJ	µg/Kg	*
91-94-1	3,3'-dichlorobenzidine	Low	1	330	400 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	400 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	400 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	400 UJ	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	400 UJ	µg/Kg	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	400 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	400 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	400 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	400 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	400 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	400 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB07-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **17** SDG ID: **2004-B**
Lab Sample ID: **WU0744-2** Sampling Date/Time: **03/20/2004 8:39** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	330	400 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	400 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	400 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	400 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	400 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	400 UJ	µg/Kg	*
98-86-2	ACETOPHENONE	Low	1	330	400 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	400 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	400 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	400 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	400 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	400 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	400 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	400 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	400 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	400 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	400 U	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	400 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	400 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	400 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	400 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	400 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	400 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	400 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,000 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	400 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	400 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,000 UJ	µg/Kg	*
131-11-3	DIMETHYL PHTHALATE	Low	1	330	400 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	400 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	400 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,000 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	400 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,000 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,000 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	400 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	400 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	400 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	400 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	400 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
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D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-SB07-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **17** SDG ID: **2004-B**
Lab Sample ID: **WU0744-2** Sampling Date/Time: **03/20/2004 8:39** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	1,000 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,000 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	400 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	400 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	400 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	400 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,000 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	400 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	400 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	400 UJ	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	400 U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	400 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	400 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	400 UJ	µg/Kg	*
91-94-1	3,3'-dichlorobenzidine	Low	1	330	400 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	400 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	400 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	400 UJ	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	400 UJ	µg/Kg	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	400 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	400 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	400 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	400 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	400 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	400 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB07-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **22** SDG ID: **2004-B**
Lab Sample ID: **WU0744-3** Sampling Date/Time: **03/20/2004 8:41** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	330	420 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	420 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	420 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	420 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	420 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	420 UJ	µg/Kg	*
98-86-2	ACETOPHENONE	Low	1	330	420 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	420 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	420 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	420 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	420 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	420 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	420 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	420 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	420 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	420 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	420 U	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	420 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	420 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	420 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	420 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	420 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	420 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	420 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,100 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	420 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	420 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,100 UJ	µg/Kg	*
131-11-3	DIMETHYL PHTHALATE	Low	1	330	420 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	420 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	420 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,100 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	420 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,100 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,100 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	420 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	420 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	420 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	420 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	420 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB07-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **22** SDG ID: **2004-B**
Lab Sample ID: **WU0744-3** Sampling Date/Time: **03/20/2004 8:41** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	1,100 U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,100 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	420 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	420 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	420 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	420 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,100 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	420 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	420 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	420 UJ	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	420 U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	420 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	420 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	420 UJ	µg/Kg	*
91-94-1	3,3'-dichlorobenzidine	Low	1	330	420 U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	420 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	420 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	420 UJ	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	420 UJ	µg/Kg	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	420 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	420 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	420 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	420 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	420 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	420 U	µg/Kg	

U - Non-detected
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D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB08-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **8** SDG ID: **2004-B**
Lab Sample ID: **WU0744-4** Sampling Date/Time: **03/20/2004 8:08** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-52-7	BENZALDEHYDE	Low	1	330	360	R	µg/Kg	*
108-95-2	PHENOL	Low	1	330	360	R	µg/Kg	*
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	360	R	µg/Kg	*
95-57-8	2-chlorophenol	Low	1	330	360	R	µg/Kg	*
95-48-7	2-methylphenol	Low	1	330	360	R	µg/Kg	*
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	360	R	µg/Kg	*
98-86-2	ACETOPHENONE	Low	1	330	360	R	µg/Kg	*
106-44-5	4-methylphenol	Low	1	330	360	R	µg/Kg	*
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	360	R	µg/Kg	*
67-72-1	HEXACHLOROETHANE	Low	1	330	360	R	µg/Kg	*
98-95-3	NITROBENZENE	Low	1	330	360	R	µg/Kg	*
78-59-1	ISOPHORONE	Low	1	330	360	R	µg/Kg	*
88-75-5	2-nitrophenol	Low	1	330	360	R	µg/Kg	*
105-67-9	2,4-dimethylphenol	Low	1	330	360	R	µg/Kg	*
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	360	R	µg/Kg	*
120-83-2	2,4-dichlorophenol	Low	1	330	360	R	µg/Kg	*
91-20-3	NAPHTHALENE	Low	1	330	12,000	R	µg/Kg	*
106-47-8	4-chloroaniline	Low	1	330	360	R	µg/Kg	*
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	360	R	µg/Kg	*
105-60-2	CAPROLACTAM	Low	1	330	360	R	µg/Kg	*
59-50-7	4-chloro-3-methylphenol	Low	1	330	360	R	µg/Kg	*
91-57-6	2-methylnaphthalene	Low	1	330	2,800	R	µg/Kg	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	360	R	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	360	R	µg/Kg	*
95-95-4	2,4,5-trichlorophenol	Low	1	830	900	R	µg/Kg	*
92-52-4	1,1-Biphenyl	Low	1	330	360	R	µg/Kg	*
91-58-7	2-chloronaphthalene	Low	1	330	360	R	µg/Kg	*
88-74-4	2-nitroaniline	Low	1	830	900	R	µg/Kg	*
131-11-3	DIMETHYL PHTHALATE	Low	1	330	360	R	µg/Kg	*
606-20-2	2,6-dinitrotoluene	Low	1	330	360	R	µg/Kg	*
208-96-8	ACENAPHTHYLENE	Low	1	330	360	R	µg/Kg	*
99-09-2	3-nitroaniline	Low	1	830	900	R	µg/Kg	*
83-32-9	ACENAPHTHENE	Low	1	330	360	R	µg/Kg	*
51-28-5	2,4-dinitrophenol	Low	1	830	900	R	µg/Kg	*
100-02-7	4-NITROPHENOL	Low	1	830	900	R	µg/Kg	*
132-64-9	DIBENZOFURAN	Low	1	330	360	R	µg/Kg	*
121-14-2	2,4-dinitrotoluene	Low	1	330	360	R	µg/Kg	*
84-66-2	DIETHYL PHTHALATE	Low	1	330	360	R	µg/Kg	*
86-73-7	FLUORENE	Low	1	330	360	R	µg/Kg	*
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	360	R	µg/Kg	*

U - Non-detected
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D - (Lab qualifier) Reported from a dilution
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RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-SB08-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **8** SDG ID: **2004-B**
Lab Sample ID: **WU0744-4** Sampling Date/Time: **03/20/2004 8:08** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	900 R	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	900 R	µg/Kg	*
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	360 R	µg/Kg	*
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	360 R	µg/Kg	*
118-74-1	HEXACHLOROBENZENE	Low	1	330	360 R	µg/Kg	*
1912-24-9	ATRAZINE	Low	1	330	360 R	µg/Kg	*
87-86-5	PENTACHLOROPHENOL	Low	1	830	900 R	µg/Kg	*
85-01-8	PHENANTHRENE	Low	1	330	360 R	µg/Kg	*
120-12-7	ANTHRACENE	Low	1	330	360 R	µg/Kg	*
86-74-8	CARBAZOLE	Low	1	330	360 R	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	360 R	µg/Kg	*
206-44-0	FLUORANTHENE	Low	1	330	360 R	µg/Kg	*
129-00-0	PYRENE	Low	1	330	360 R	µg/Kg	*
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	360 R	µg/Kg	*
91-94-1	3,3'-dichlorobenzidine	Low	1	330	360 R	µg/Kg	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	360 R	µg/Kg	*
218-01-9	CHRYSENE	Low	1	330	360 R	µg/Kg	*
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	1,200 R	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	360 R	µg/Kg	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	360 R	µg/Kg	*
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	360 R	µg/Kg	*
50-32-8	BENZO(A)PYRENE	Low	1	330	360 R	µg/Kg	*
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	360 R	µg/Kg	*
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	360 R	µg/Kg	*
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	360 R	µg/Kg	*

U - Non-detected
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N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB08-00DLDL** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **8** SDG ID: **2004-B**
Lab Sample ID: **WU0744-4DL2** Sampling Date/Time: **03/20/2004 0:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	25	330	9,000 U	µg/Kg	
108-95-2	PHENOL	Low	25	330	9,000 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	25	330	9,000 U	µg/Kg	
95-57-8	2-chlorophenol	Low	25	330	9,000 U	µg/Kg	
95-48-7	2-methylphenol	Low	25	330	9,000 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	25	330	9,000 U	µg/Kg	
98-86-2	ACETOPHENONE	Low	25	330	9,000 U	µg/Kg	
106-44-5	4-methylphenol	Low	25	330	9,000 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	25	330	9,000 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	25	330	9,000 U	µg/Kg	
98-95-3	NITROBENZENE	Low	25	330	9,000 U	µg/Kg	
78-59-1	ISOPHORONE	Low	25	330	9,000 U	µg/Kg	
88-75-5	2-nitrophenol	Low	25	330	9,000 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	25	330	9,000 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	25	330	9,000 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	25	330	9,000 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	25	330	32,000	µg/Kg	
106-47-8	4-chloroaniline	Low	25	330	9,000 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	25	330	9,000 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	25	330	9,000 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	25	330	9,000 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	25	330	9,000 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	25	330	9,000 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	25	330	9,000 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	25	830	22,000 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	25	330	9,000 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	25	330	9,000 U	µg/Kg	
88-74-4	2-nitroaniline	Low	25	830	22,000 U	µg/Kg	
131-11-3	DIMETHYL PHTHALATE	Low	25	330	9,000 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	25	330	9,000 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	25	330	9,000 U	µg/Kg	
99-09-2	3-nitroaniline	Low	25	830	22,000 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	25	330	9,000 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	25	830	22,000 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	25	830	22,000 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	25	330	9,000 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	25	330	9,000 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	25	330	9,000 U	µg/Kg	
86-73-7	FLUORENE	Low	25	330	9,000 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	25	330	9,000 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB08-00DLDL** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **8** SDG ID: **2004-B**
Lab Sample ID: **WU0744-4DL2** Sampling Date/Time: **03/20/2004 0:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-01-6	4-NITROANILINE	Low	25	830	22,000	UJ	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	25	830	22,000	U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	25	330	9,000	U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	25	330	9,000	U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	25	330	9,000	U	µg/Kg	
1912-24-9	ATRAZINE	Low	25	330	9,000	U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	25	830	22,000	U	µg/Kg	
85-01-8	PHENANTHRENE	Low	25	330	9,000	U	µg/Kg	
120-12-7	ANTHRACENE	Low	25	330	9,000	U	µg/Kg	
86-74-8	CARBAZOLE	Low	25	330	9,000	U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	25	330	9,000	U	µg/Kg	
206-44-0	FLUORANTHENE	Low	25	330	9,000	U	µg/Kg	
129-00-0	PYRENE	Low	25	330	9,000	U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	25	330	9,000	U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	25	330	9,000	UJ	µg/Kg	*
56-55-3	BENZO(A)ANTHRACENE	Low	25	330	9,000	U	µg/Kg	
218-01-9	CHRYSENE	Low	25	330	9,000	U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	25	330	9,000	U	µg/Kg	
117-84-0	DI-N-OCTYLPHTHALATE	Low	25	330	9,000	U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	25	330	9,000	U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	25	330	9,000	U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	25	330	9,000	U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	25	330	9,000	U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	25	330	9,000	U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	25	330	9,000	U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB08-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **27** SDG ID: **2004-B**
Lab Sample ID: **WU0744-5** Sampling Date/Time: **03/20/2004 8:15** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	330	450 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	450 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	450 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	450 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	450 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	450 UJ	µg/Kg	*
98-86-2	ACETOPHENONE	Low	1	330	450 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	450 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	450 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	450 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	450 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	450 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	450 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	450 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	450 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	450 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	450 U	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	450 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	450 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	450 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	450 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	450 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	450 UJ	µg/Kg	*
88-06-2	2,4,6-trichlorophenol	Low	1	330	450 U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,100 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	450 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	450 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,100 UJ	µg/Kg	*
131-11-3	DIMETHYL PHTHALATE	Low	1	330	450 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	450 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	450 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,100 U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	450 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,100 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,100 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	450 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	450 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	450 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	450 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	450 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB08-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **27** SDG ID: **2004-B**
Lab Sample ID: **WU0744-5** Sampling Date/Time: **03/20/2004 8:15** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
Method: CLP OLM04.2 S								
100-01-6	4-NITROANILINE	Low	1	830	1,100	U	µg/Kg	
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,100	U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	450	U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	450	U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	450	U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	450	U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,100	U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	450	U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	450	U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	450	UJ	µg/Kg	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	450	U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	450	U	µg/Kg	
129-00-0	PYRENE	Low	1	330	450	U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	450	UJ	µg/Kg	*
91-94-1	3,3'-dichlorobenzidine	Low	1	330	450	U	µg/Kg	
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	450	U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	450	U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	450	UJ	µg/Kg	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	450	UJ	µg/Kg	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	450	U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	450	U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	450	U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	450	U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	450	U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	450	U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB09-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **15** SDG ID: **2004-B**
Lab Sample ID: **WU0756-1** Sampling Date/Time: **03/22/2004 16:13** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method: CLP OLM04.2 S						
100-52-7	BENZALDEHYDE	Low	1	330	390 U	µg/Kg
108-95-2	PHENOL	Low	1	330	390 U	µg/Kg
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	390 U	µg/Kg
95-57-8	2-chlorophenol	Low	1	330	390 U	µg/Kg
95-48-7	2-methylphenol	Low	1	330	390 U	µg/Kg
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	390 U	µg/Kg
98-86-2	ACETOPHENONE	Low	1	330	390 U	µg/Kg
106-44-5	4-methylphenol	Low	1	330	390 U	µg/Kg
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	390 U	µg/Kg
67-72-1	HEXACHLOROETHANE	Low	1	330	390 U	µg/Kg
98-95-3	NITROBENZENE	Low	1	330	390 U	µg/Kg
78-59-1	ISOPHORONE	Low	1	330	390 U	µg/Kg
88-75-5	2-nitrophenol	Low	1	330	390 U	µg/Kg
105-67-9	2,4-dimethylphenol	Low	1	330	390 U	µg/Kg
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	390 U	µg/Kg
120-83-2	2,4-dichlorophenol	Low	1	330	390 U	µg/Kg
91-20-3	NAPHTHALENE	Low	1	330	390 U	µg/Kg
106-47-8	4-chloroaniline	Low	1	330	390 U	µg/Kg
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	390 U	µg/Kg
105-60-2	CAPROLACTAM	Low	1	330	390 U	µg/Kg
59-50-7	4-chloro-3-methylphenol	Low	1	330	390 U	µg/Kg
91-57-6	2-methylnaphthalene	Low	1	330	390 U	µg/Kg
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	390 U	µg/Kg
88-06-2	2,4,6-trichlorophenol	Low	1	330	390 U	µg/Kg
95-95-4	2,4,5-trichlorophenol	Low	1	830	980 U	µg/Kg
92-52-4	1,1-Biphenyl	Low	1	330	390 U	µg/Kg
91-58-7	2-chloronaphthalene	Low	1	330	390 U	µg/Kg
88-74-4	2-nitroaniline	Low	1	830	980 U	µg/Kg
131-11-3	DIMETHYL PHTHALATE	Low	1	330	390 U	µg/Kg
606-20-2	2,6-dinitrotoluene	Low	1	330	390 U	µg/Kg
208-96-8	ACENAPHTHYLENE	Low	1	330	390 U	µg/Kg
99-09-2	3-nitroaniline	Low	1	830	980 U	µg/Kg
83-32-9	ACENAPHTHENE	Low	1	330	390 U	µg/Kg
51-28-5	2,4-dinitrophenol	Low	1	830	980 U	µg/Kg
100-02-7	4-NITROPHENOL	Low	1	830	980 U	µg/Kg
132-64-9	DIBENZOFURAN	Low	1	330	390 U	µg/Kg
121-14-2	2,4-dinitrotoluene	Low	1	330	390 U	µg/Kg
84-66-2	DIETHYL PHTHALATE	Low	1	330	390 U	µg/Kg
86-73-7	FLUORENE	Low	1	330	390 U	µg/Kg
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	390 U	µg/Kg

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB09-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **15** SDG ID: **2004-B**
Lab Sample ID: **WU0756-1** Sampling Date/Time: **03/22/2004 16:13** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	980 UJ	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	980 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	390 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	390 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	390 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	390 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	980 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	390 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	390 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	390 U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	390 U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	390 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	390 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	390 U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	390 UJ	µg/Kg	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	390 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	390 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	390 U	µg/Kg	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	390 U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	390 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	390 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	390 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	390 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	390 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	390 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID:	**SWMU318-SB09-02**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**16**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0756-2**	Sampling Date/Time:	**03/22/2004 16:15**	SDG Page:	

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
100-52-7	BENZALDEHYDE	Low	1	330	390 U	µg/Kg
108-95-2	PHENOL	Low	1	330	390 U	µg/Kg
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	390 U	µg/Kg
95-57-8	2-chlorophenol	Low	1	330	390 U	µg/Kg
95-48-7	2-methylphenol	Low	1	330	390 U	µg/Kg
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	390 U	µg/Kg
98-86-2	ACETOPHENONE	Low	1	330	390 U	µg/Kg
106-44-5	4-methylphenol	Low	1	330	390 U	µg/Kg
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	390 U	µg/Kg
67-72-1	HEXACHLOROETHANE	Low	1	330	390 U	µg/Kg
98-95-3	NITROBENZENE	Low	1	330	390 U	µg/Kg
78-59-1	ISOPHORONE	Low	1	330	390 U	µg/Kg
88-75-5	2-nitrophenol	Low	1	330	390 U	µg/Kg
105-67-9	2,4-dimethylphenol	Low	1	330	390 U	µg/Kg
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	390 U	µg/Kg
120-83-2	2,4-dichlorophenol	Low	1	330	390 U	µg/Kg
91-20-3	NAPHTHALENE	Low	1	330	390 U	µg/Kg
106-47-8	4-chloroaniline	Low	1	330	390 U	µg/Kg
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	390 U	µg/Kg
105-60-2	CAPROLACTAM	Low	1	330	390 U	µg/Kg
59-50-7	4-chloro-3-methylphenol	Low	1	330	390 U	µg/Kg
91-57-6	2-methylnaphthalene	Low	1	330	390 U	µg/Kg
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	390 U	µg/Kg
88-06-2	2,4,6-trichlorophenol	Low	1	330	390 U	µg/Kg
95-95-4	2,4,5-trichlorophenol	Low	1	830	980 U	µg/Kg
92-52-4	1,1-Biphenyl	Low	1	330	390 U	µg/Kg
91-58-7	2-chloronaphthalene	Low	1	330	390 U	µg/Kg
88-74-4	2-nitroaniline	Low	1	830	980 U	µg/Kg
131-11-3	DIMETHYL PHTHALATE	Low	1	330	390 U	µg/Kg
606-20-2	2,6-dinitrotoluene	Low	1	330	390 U	µg/Kg
208-96-8	ACENAPHTHYLENE	Low	1	330	390 U	µg/Kg
99-09-2	3-nitroaniline	Low	1	830	980 U	µg/Kg
83-32-9	ACENAPHTHENE	Low	1	330	390 U	µg/Kg
51-28-5	2,4-dinitrophenol	Low	1	830	980 U	µg/Kg
100-02-7	4-NITROPHENOL	Low	1	830	980 U	µg/Kg
132-64-9	DIBENZOFURAN	Low	1	330	390 U	µg/Kg
121-14-2	2,4-dinitrotoluene	Low	1	330	390 U	µg/Kg
84-66-2	DIETHYL PHTHALATE	Low	1	330	390 U	µg/Kg
86-73-7	FLUORENE	Low	1	330	390 U	µg/Kg
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	390 U	µg/Kg

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB09-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **16** SDG ID: **2004-B**
Lab Sample ID: **WU0756-2** Sampling Date/Time: **03/22/2004 16:15** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	980 UJ	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	980 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	390 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	390 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	390 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	390 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	980 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	390 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	390 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	390 U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	390 U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	390 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	390 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	390 U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	390 UJ	µg/Kg	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	390 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	390 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	390 U	µg/Kg	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	390 U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	390 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	390 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	390 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	390 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	390 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	390 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW15** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-1** Sampling Date/Time: **03/22/2004 14:10** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-52-7	BENZALDEHYDE	Low	1	10	10	U	µg/L	
108-95-2	PHENOL	Low	1	10	10	U	µg/L	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10	U	µg/L	
95-57-8	2-chlorophenol	Low	1	10	10	U	µg/L	
95-48-7	2-methylphenol	Low	1	10	10	U	µg/L	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10	U	µg/L	
98-86-2	ACETOPHENONE	Low	1	10	10	U	µg/L	
106-44-5	4-methylphenol	Low	1	10	10	U	µg/L	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10	U	µg/L	
67-72-1	HEXACHLOROETHANE	Low	1	10	10	U	µg/L	
98-95-3	NITROBENZENE	Low	1	10	10	U	µg/L	
78-59-1	ISOPHORONE	Low	1	10	10	U	µg/L	
88-75-5	2-nitrophenol	Low	1	10	10	U	µg/L	
105-67-9	2,4-dimethylphenol	Low	1	10	21		µg/L	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10	U	µg/L	
120-83-2	2,4-dichlorophenol	Low	1	10	10	U	µg/L	
91-20-3	NAPHTHALENE	Low	5	50	340	D	µg/L	*
106-47-8	4-chloroaniline	Low	1	10	10	U	µg/L	
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10	U	µg/L	
105-60-2	CAPROLACTAM	Low	1	10	10	U	µg/L	
59-50-7	4-chloro-3-methylphenol	Low	1	10	10	U	µg/L	
91-57-6	2-methylnaphthalene	Low	5	50	130	D	µg/L	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10	U	µg/L	
88-06-2	2,4,6-trichlorophenol	Low	1	10	10	U	µg/L	
95-95-4	2,4,5-trichlorophenol	Low	1	25	25	U	µg/L	
92-52-4	1,1-Biphenyl	Low	1	10	27		µg/L	
91-58-7	2-chloronaphthalene	Low	1	10	10	U	µg/L	
88-74-4	2-nitroaniline	Low	1	25	25	U	µg/L	
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10	U	µg/L	
606-20-2	2,6-dinitrotoluene	Low	1	10	10	U	µg/L	
208-96-8	ACENAPHTHYLENE	Low	1	10	10	U	µg/L	
99-09-2	3-nitroaniline	Low	1	25	25	U	µg/L	
83-32-9	ACENAPHTHENE	Low	5	50	130	D	µg/L	*
51-28-5	2,4-dinitrophenol	Low	1	25	25	U	µg/L	
100-02-7	4-NITROPHENOL	Low	1	25	25	U	µg/L	
132-64-9	DIBENZOFURAN	Low	1	10	68		µg/L	
121-14-2	2,4-dinitrotoluene	Low	1	10	10	U	µg/L	
84-66-2	DIETHYL PHTHALATE	Low	1	10	10	U	µg/L	
86-73-7	FLUORENE	Low	1	10	49		µg/L	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10	U	µg/L	

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J - Estimated
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R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW15** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-1** Sampling Date/Time: **03/22/2004 14:10** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	11	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	44	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 UJ	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW15DLDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-1DL** Sampling Date/Time: **03/22/2004 0:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	5	10	53 R	µg/L	*
108-95-2	PHENOL	Low	5	10	53 R	µg/L	*
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	5	10	53 R	µg/L	*
95-57-8	2-chlorophenol	Low	5	10	53 R	µg/L	*
95-48-7	2-methylphenol	Low	5	10	53 R	µg/L	*
108-60-1	2,2'-oxybis (1-chloropropane)	Low	5	10	53 R	µg/L	*
98-86-2	ACETOPHENONE	Low	5	10	53 R	µg/L	*
106-44-5	4-methylphenol	Low	5	10	53 R	µg/L	*
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	5	10	53 R	µg/L	*
67-72-1	HEXACHLOROETHANE	Low	5	10	53 R	µg/L	*
98-95-3	NITROBENZENE	Low	5	10	53 R	µg/L	*
78-59-1	ISOPHORONE	Low	5	10	53 R	µg/L	*
88-75-5	2-nitrophenol	Low	5	10	53 R	µg/L	*
105-67-9	2,4-dimethylphenol	Low	5	10	19 R	µg/L	*
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	5	10	53 R	µg/L	*
120-83-2	2,4-dichlorophenol	Low	5	10	53 R	µg/L	*
91-20-3	NAPHTHALENE	Low	5	10	340 R	µg/L	*
106-47-8	4-chloroaniline	Low	5	10	53 R	µg/L	*
87-68-3	HEXACHLOROBUTADIENE	Low	5	10	53 R	µg/L	*
105-60-2	CAPROLACTAM	Low	5	10	53 R	µg/L	*
59-50-7	4-chloro-3-methylphenol	Low	5	10	53 R	µg/L	*
91-57-6	2-methylnaphthalene	Low	5	10	130 R	µg/L	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	5	10	53 R	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	5	10	53 R	µg/L	*
95-95-4	2,4,5-trichlorophenol	Low	5	25	130 R	µg/L	*
92-52-4	1,1-Biphenyl	Low	5	10	32 R	µg/L	*
91-58-7	2-chloronaphthalene	Low	5	10	53 R	µg/L	*
88-74-4	2-nitroaniline	Low	5	25	130 R	µg/L	*
131-11-3	DIMETHYL PHTHALATE	Low	5	10	53 R	µg/L	*
606-20-2	2,6-dinitrotoluene	Low	5	10	53 R	µg/L	*
208-96-8	ACENAPHTHYLENE	Low	5	10	53 R	µg/L	*
99-09-2	3-nitroaniline	Low	5	25	130 R	µg/L	*
83-32-9	ACENAPHTHENE	Low	5	10	130 R	µg/L	*
51-28-5	2,4-dinitrophenol	Low	5	25	130 R	µg/L	*
100-02-7	4-NITROPHENOL	Low	5	25	130 R	µg/L	*
132-64-9	DIBENZOFURAN	Low	5	10	74 R	µg/L	*
121-14-2	2,4-dinitrotoluene	Low	5	10	53 R	µg/L	*
84-66-2	DIETHYL PHTHALATE	Low	5	10	53 R	µg/L	*
86-73-7	FLUORENE	Low	5	10	54 R	µg/L	*
7005-72-3	4-chlorophenyl Phenyl Ether	Low	5	10	53 R	µg/L	*

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J - Estimated
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B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-GW15DLDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-1DL** Sampling Date/Time: **03/22/2004 0:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-01-6	4-NITROANILINE	Low	5	25	130 R	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	5	25	130 R	µg/L	*
86-30-6	N-NITROSODIPHENYLAMINE	Low	5	10	53 R	µg/L	*
101-55-3	4-bromophenyl Phenyl Ether	Low	5	10	53 R	µg/L	*
118-74-1	HEXACHLOROBENZENE	Low	5	10	53 R	µg/L	*
1912-24-9	ATRAZINE	Low	5	10	53 R	µg/L	*
87-86-5	PENTACHLOROPHENOL	Low	5	25	130 R	µg/L	*
85-01-8	PHENANTHRENE	Low	5	10	53 R	µg/L	*
120-12-7	ANTHRACENE	Low	5	10	53 R	µg/L	*
86-74-8	CARBAZOLE	Low	5	10	45 R	µg/L	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	5	10	53 R	µg/L	*
206-44-0	FLUORANTHENE	Low	5	10	53 R	µg/L	*
129-00-0	PYRENE	Low	5	10	53 R	µg/L	*
85-68-7	BUTYL BENZYL PHTHALATE	Low	5	10	53 R	µg/L	*
91-94-1	3,3'-dichlorobenzidine	Low	5	10	53 R	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	5	10	53 R	µg/L	*
218-01-9	CHRYSENE	Low	5	10	53 R	µg/L	*
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	5	10	53 R	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	5	10	53 R	µg/L	*
205-99-2	BENZO(B)FLUORANTHENE	Low	5	10	53 R	µg/L	*
207-08-9	BENZO(K)FLUORANTHENE	Low	5	10	53 R	µg/L	*
50-32-8	BENZO(A)PYRENE	Low	5	10	53 R	µg/L	*
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	5	10	53 R	µg/L	*
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	5	10	53 R	µg/L	*
191-24-2	BENZO[G,H,I]PERYLENE	Low	5	10	53 R	µg/L	*

U - Non-detected
J - Estimated
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R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-2** Sampling Date/Time: **03/19/2004 9:05** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L
108-95-2	PHENOL	Low	1	10	10 U	µg/L
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L
91-20-3	NAPHTHALENE	Low	1	10	9 J	µg/L
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 U	µg/L
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L
86-73-7	FLUORENE	Low	1	10	10 U	µg/L
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L

U - Non-detected
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N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
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***** - Modification by data validation

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Client Sample ID: **SWMU318-GW01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-2** Sampling Date/Time: **03/19/2004 9:05** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 UJ	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW09-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-3** Sampling Date/Time: **03/19/2004 10:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L
108-95-2	PHENOL	Low	1	10	10 U	µg/L
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L
91-20-3	NAPHTHALENE	Low	1	10	10 U	µg/L
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 U	µg/L
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L
86-73-7	FLUORENE	Low	1	10	10 U	µg/L
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-GW09-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-3** Sampling Date/Time: **03/19/2004 10:00** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 UJ	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW12-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-8** Sampling Date/Time: **03/20/2004 15:30** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L
108-95-2	PHENOL	Low	1	10	10 U	µg/L
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L
91-20-3	NAPHTHALENE	Low	1	10	26	µg/L
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 U	µg/L
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L
83-32-9	ACENAPHTHENE	Low	1	10	11	µg/L
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L
86-73-7	FLUORENE	Low	1	10	10 U	µg/L
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L

U - Non-detected
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N - Presumptively present
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B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-GW12-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0757-8** Sampling Date/Time: **03/20/2004 15:30** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 UJ	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW10** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0758-1** Sampling Date/Time: **03/20/2004 11:30** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L
108-95-2	PHENOL	Low	1	10	10 U	µg/L
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L
91-20-3	NAPHTHALENE	Low	1	10	10 U	µg/L
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 U	µg/L
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L
86-73-7	FLUORENE	Low	1	10	10 U	µg/L
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW10** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0758-1** Sampling Date/Time: **03/20/2004 11:30** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	*
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID:	**SWMU318-GW13**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0758-2**	Sampling Date/Time:	**03/20/2004 14:50**	SDG Page:	

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L
108-95-2	PHENOL	Low	1	10	10 U	µg/L
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L
91-20-3	NAPHTHALENE	Low	1	10	10 U	µg/L
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 U	µg/L
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L
86-73-7	FLUORENE	Low	1	10	10 U	µg/L
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-GW13** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0758-2** Sampling Date/Time: **03/20/2004 14:50** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW11-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0758-3** Sampling Date/Time: **03/20/2004 10:55** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L
108-95-2	PHENOL	Low	1	10	10 U	µg/L
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L
91-20-3	NAPHTHALENE	Low	1	10	10 U	µg/L
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 U	µg/L
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L
86-73-7	FLUORENE	Low	1	10	10 U	µg/L
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-GW11-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0758-3** Sampling Date/Time: **03/20/2004 10:55** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB10-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0770-1** Sampling Date/Time: **03/23/2004 7:32** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
83-32-9	ACENAPHTHENE	Low	1	330	400 U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,000 U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,000 U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	400 U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	400 U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	400 U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	400 U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	400 U	µg/Kg	
100-01-6	4-NITROANILINE	Low	1	830	1,000 UJ	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,000 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	400 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	400 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	400 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	400 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,000 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	400 U	µg/Kg	
100-52-7	BENZALDEHYDE	Low	1	330	400 U	µg/Kg	
108-95-2	PHENOL	Low	1	330	400 U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	400 U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	400 U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	400 U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	400 U	µg/Kg	
98-86-2	ACETOPHENONE	Low	1	330	400 U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	400 U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	400 U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	400 U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	400 U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	400 U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	400 U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	400 U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	400 U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	400 U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	400 U	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	400 U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	400 U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	400 U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	400 U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	400 U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	400 U	µg/Kg	
88-06-2	2,4,6-trichlorophenol	Low	1	330	400 U	µg/Kg	

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B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB10-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **18** SDG ID: **2004-B**
Lab Sample ID: **WU0770-1** Sampling Date/Time: **03/23/2004 7:32** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,000 U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	400 U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	400 U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,000 U	µg/Kg	
131-11-3	DIMETHYL PHTHALATE	Low	1	330	400 U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	400 U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	400 U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,000 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	400 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	400 U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	400 U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	400 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	400 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	400 U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	400 UJ	µg/Kg	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	400 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	400 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	400 U	µg/Kg	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	400 U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	400 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	400 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	400 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	400 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	400 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	400 U	µg/Kg	

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J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB10-03RARE** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Re-extraction/Re-analysis** % Moisture: **29** SDG ID: **2004-B**
Lab Sample ID: **WU0770-2RA** Sampling Date/Time: **03/23/2004 0:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-52-7	BENZALDEHYDE	Low	1	330	470	UJ	µg/Kg	*
108-95-2	PHENOL	Low	1	330	470	U	µg/Kg	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	470	U	µg/Kg	
95-57-8	2-chlorophenol	Low	1	330	470	U	µg/Kg	
95-48-7	2-methylphenol	Low	1	330	470	U	µg/Kg	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	470	U	µg/Kg	
98-86-2	ACETOPHENONE	Low	1	330	470	U	µg/Kg	
106-44-5	4-methylphenol	Low	1	330	470	U	µg/Kg	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	470	U	µg/Kg	
67-72-1	HEXACHLOROETHANE	Low	1	330	470	U	µg/Kg	
98-95-3	NITROBENZENE	Low	1	330	470	U	µg/Kg	
78-59-1	ISOPHORONE	Low	1	330	470	U	µg/Kg	
88-75-5	2-nitrophenol	Low	1	330	470	U	µg/Kg	
105-67-9	2,4-dimethylphenol	Low	1	330	470	U	µg/Kg	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	470	U	µg/Kg	
120-83-2	2,4-dichlorophenol	Low	1	330	470	U	µg/Kg	
91-20-3	NAPHTHALENE	Low	1	330	470	U	µg/Kg	
106-47-8	4-chloroaniline	Low	1	330	470	U	µg/Kg	
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	470	U	µg/Kg	
105-60-2	CAPROLACTAM	Low	1	330	470	U	µg/Kg	
59-50-7	4-chloro-3-methylphenol	Low	1	330	470	U	µg/Kg	
91-57-6	2-methylnaphthalene	Low	1	330	470	U	µg/Kg	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	470	U	µg/Kg	
88-06-2	2,4,6-trichlorophenol	Low	1	330	470	U	µg/Kg	
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,200	U	µg/Kg	
92-52-4	1,1-Biphenyl	Low	1	330	470	U	µg/Kg	
91-58-7	2-chloronaphthalene	Low	1	330	470	U	µg/Kg	
88-74-4	2-nitroaniline	Low	1	830	1,200	U	µg/Kg	
131-11-3	DIMETHYL PHTHALATE	Low	1	330	470	U	µg/Kg	
606-20-2	2,6-dinitrotoluene	Low	1	330	470	U	µg/Kg	
208-96-8	ACENAPHTHYLENE	Low	1	330	470	U	µg/Kg	
99-09-2	3-nitroaniline	Low	1	830	1,200	U	µg/Kg	
83-32-9	ACENAPHTHENE	Low	1	330	470	U	µg/Kg	
51-28-5	2,4-dinitrophenol	Low	1	830	1,200	U	µg/Kg	
100-02-7	4-NITROPHENOL	Low	1	830	1,200	U	µg/Kg	
132-64-9	DIBENZOFURAN	Low	1	330	470	U	µg/Kg	
121-14-2	2,4-dinitrotoluene	Low	1	330	470	U	µg/Kg	
84-66-2	DIETHYL PHTHALATE	Low	1	330	470	U	µg/Kg	
86-73-7	FLUORENE	Low	1	330	470	U	µg/Kg	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	470	U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB10-03RARE** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Re-extraction/Re-analysis** % Moisture: **29** SDG ID: **2004-B**
Lab Sample ID: **WU0770-2RA** Sampling Date/Time: **03/23/2004 0:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-01-6	4-NITROANILINE	Low	1	830	1,200	UJ	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,200	U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	470	U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	470	U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	470	U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	470	U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,200	U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	470	U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	470	U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	470	U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	470	U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	470	U	µg/Kg	
129-00-0	PYRENE	Low	1	330	470	U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	470	U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	470	UJ	µg/Kg	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	470	U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	470	U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	470	U	µg/Kg	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	470	U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	470	U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	470	U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	470	U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	470	U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	470	U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	470	U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB11-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **14** SDG ID: **2004-B**
Lab Sample ID: **WU0770-3** Sampling Date/Time: **03/23/2004 17:25** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method: CLP OLM04.2 S						
100-52-7	BENZALDEHYDE	Low	1	330	380 U	µg/Kg
108-95-2	PHENOL	Low	1	330	380 U	µg/Kg
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	380 U	µg/Kg
95-57-8	2-chlorophenol	Low	1	330	380 U	µg/Kg
95-48-7	2-methylphenol	Low	1	330	380 U	µg/Kg
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	380 U	µg/Kg
98-86-2	ACETOPHENONE	Low	1	330	380 U	µg/Kg
106-44-5	4-methylphenol	Low	1	330	380 U	µg/Kg
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	380 U	µg/Kg
67-72-1	HEXACHLOROETHANE	Low	1	330	380 U	µg/Kg
98-95-3	NITROBENZENE	Low	1	330	380 U	µg/Kg
78-59-1	ISOPHORONE	Low	1	330	380 U	µg/Kg
88-75-5	2-nitrophenol	Low	1	330	380 U	µg/Kg
105-67-9	2,4-dimethylphenol	Low	1	330	380 U	µg/Kg
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	380 U	µg/Kg
120-83-2	2,4-dichlorophenol	Low	1	330	380 U	µg/Kg
91-20-3	NAPHTHALENE	Low	1	330	380 U	µg/Kg
106-47-8	4-chloroaniline	Low	1	330	380 U	µg/Kg
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	380 U	µg/Kg
105-60-2	CAPROLACTAM	Low	1	330	380 U	µg/Kg
59-50-7	4-chloro-3-methylphenol	Low	1	330	380 U	µg/Kg
91-57-6	2-methylnaphthalene	Low	1	330	380 U	µg/Kg
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	380 U	µg/Kg
88-06-2	2,4,6-trichlorophenol	Low	1	330	380 U	µg/Kg
95-95-4	2,4,5-trichlorophenol	Low	1	830	960 U	µg/Kg
92-52-4	1,1-Biphenyl	Low	1	330	380 U	µg/Kg
91-58-7	2-chloronaphthalene	Low	1	330	380 U	µg/Kg
88-74-4	2-nitroaniline	Low	1	830	960 U	µg/Kg
131-11-3	DIMETHYL PHTHALATE	Low	1	330	380 U	µg/Kg
606-20-2	2,6-dinitrotoluene	Low	1	330	380 U	µg/Kg
208-96-8	ACENAPHTHYLENE	Low	1	330	380 U	µg/Kg
99-09-2	3-nitroaniline	Low	1	830	960 U	µg/Kg
83-32-9	ACENAPHTHENE	Low	1	330	380 U	µg/Kg
51-28-5	2,4-dinitrophenol	Low	1	830	960 U	µg/Kg
100-02-7	4-NITROPHENOL	Low	1	830	960 U	µg/Kg
132-64-9	DIBENZOFURAN	Low	1	330	380 U	µg/Kg
121-14-2	2,4-dinitrotoluene	Low	1	330	380 U	µg/Kg
84-66-2	DIETHYL PHTHALATE	Low	1	330	380 U	µg/Kg
86-73-7	FLUORENE	Low	1	330	380 U	µg/Kg
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	380 U	µg/Kg

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB11-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **14** SDG ID: **2004-B**
Lab Sample ID: **WU0770-3** Sampling Date/Time: **03/23/2004 17:25** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	830	960 UJ	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	960 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	380 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	380 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	380 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	380 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	960 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	380 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	380 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	380 U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	380 U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	380 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	380 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	380 U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	380 UJ	µg/Kg	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	380 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	380 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	380 U	µg/Kg	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	380 U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	380 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	380 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	380 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	380 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	380 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	380 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB11-03** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **23** SDG ID: **2004-B**
Lab Sample ID: **WU0770-4** Sampling Date/Time: **03/23/2004 17:35** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
100-52-7	BENZALDEHYDE	Low	1	330	430 U	µg/Kg
108-95-2	PHENOL	Low	1	330	430 U	µg/Kg
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	430 U	µg/Kg
95-57-8	2-chlorophenol	Low	1	330	430 U	µg/Kg
95-48-7	2-methylphenol	Low	1	330	430 U	µg/Kg
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	430 U	µg/Kg
98-86-2	ACETOPHENONE	Low	1	330	430 U	µg/Kg
106-44-5	4-methylphenol	Low	1	330	430 U	µg/Kg
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	430 U	µg/Kg
67-72-1	HEXACHLOROETHANE	Low	1	330	430 U	µg/Kg
98-95-3	NITROBENZENE	Low	1	330	430 U	µg/Kg
78-59-1	ISOPHORONE	Low	1	330	430 U	µg/Kg
88-75-5	2-nitrophenol	Low	1	330	430 U	µg/Kg
105-67-9	2,4-dimethylphenol	Low	1	330	430 U	µg/Kg
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	430 U	µg/Kg
120-83-2	2,4-dichlorophenol	Low	1	330	430 U	µg/Kg
91-20-3	NAPHTHALENE	Low	1	330	580	µg/Kg
106-47-8	4-chloroaniline	Low	1	330	430 U	µg/Kg
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	430 U	µg/Kg
105-60-2	CAPROLACTAM	Low	1	330	430 U	µg/Kg
59-50-7	4-chloro-3-methylphenol	Low	1	330	430 U	µg/Kg
91-57-6	2-methylnaphthalene	Low	1	330	430 U	µg/Kg
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	430 U	µg/Kg
88-06-2	2,4,6-trichlorophenol	Low	1	330	430 U	µg/Kg
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,100 U	µg/Kg
92-52-4	1,1-Biphenyl	Low	1	330	430 U	µg/Kg
91-58-7	2-chloronaphthalene	Low	1	330	430 U	µg/Kg
88-74-4	2-nitroaniline	Low	1	830	1,100 U	µg/Kg
131-11-3	DIMETHYL PHTHALATE	Low	1	330	430 U	µg/Kg
606-20-2	2,6-dinitrotoluene	Low	1	330	430 U	µg/Kg
208-96-8	ACENAPHTHYLENE	Low	1	330	430 U	µg/Kg
99-09-2	3-nitroaniline	Low	1	830	1,100 U	µg/Kg
83-32-9	ACENAPHTHENE	Low	1	330	430 U	µg/Kg
51-28-5	2,4-dinitrophenol	Low	1	830	1,100 U	µg/Kg
100-02-7	4-NITROPHENOL	Low	1	830	1,100 U	µg/Kg
132-64-9	DIBENZOFURAN	Low	1	330	430 U	µg/Kg
121-14-2	2,4-dinitrotoluene	Low	1	330	430 U	µg/Kg
84-66-2	DIETHYL PHTHALATE	Low	1	330	430 U	µg/Kg
86-73-7	FLUORENE	Low	1	330	430 U	µg/Kg
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	430 U	µg/Kg

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB11-03** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **23** SDG ID: **2004-B**
Lab Sample ID: **WU0770-4** Sampling Date/Time: **03/23/2004 17:35** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
Method:	**CLP OLM04.2 S**							
100-01-6	4-NITROANILINE	Low	1	830	1,100	UJ	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,100	U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	430	U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	430	U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	430	U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	430	U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,100	U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	430	U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	430	U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	430	U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	430	U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	430	U	µg/Kg	
129-00-0	PYRENE	Low	1	330	430	U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	430	U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	430	UJ	µg/Kg	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	430	U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	430	U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	430	U	µg/Kg	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	430	U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	430	U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	430	U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	430	U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	430	U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	430	U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	430	U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB12-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **13** SDG ID: **2004-B**
Lab Sample ID: **WU0770-5** Sampling Date/Time: **03/23/2004 16:45** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
100-52-7	BENZALDEHYDE	Low	1	330	380 U	µg/Kg
108-95-2	PHENOL	Low	1	330	380 U	µg/Kg
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	380 U	µg/Kg
95-57-8	2-chlorophenol	Low	1	330	380 U	µg/Kg
95-48-7	2-methylphenol	Low	1	330	380 U	µg/Kg
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	380 U	µg/Kg
98-86-2	ACETOPHENONE	Low	1	330	380 U	µg/Kg
106-44-5	4-methylphenol	Low	1	330	380 U	µg/Kg
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	380 U	µg/Kg
67-72-1	HEXACHLOROETHANE	Low	1	330	380 U	µg/Kg
98-95-3	NITROBENZENE	Low	1	330	380 U	µg/Kg
78-59-1	ISOPHORONE	Low	1	330	380 U	µg/Kg
88-75-5	2-nitrophenol	Low	1	330	380 U	µg/Kg
105-67-9	2,4-dimethylphenol	Low	1	330	380 U	µg/Kg
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	380 U	µg/Kg
120-83-2	2,4-dichlorophenol	Low	1	330	380 U	µg/Kg
91-20-3	NAPHTHALENE	Low	1	330	380 U	µg/Kg
106-47-8	4-chloroaniline	Low	1	330	380 U	µg/Kg
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	380 U	µg/Kg
105-60-2	CAPROLACTAM	Low	1	330	380 U	µg/Kg
59-50-7	4-chloro-3-methylphenol	Low	1	330	380 U	µg/Kg
91-57-6	2-methylnaphthalene	Low	1	330	380 U	µg/Kg
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	380 U	µg/Kg
88-06-2	2,4,6-trichlorophenol	Low	1	330	380 U	µg/Kg
95-95-4	2,4,5-trichlorophenol	Low	1	830	950 U	µg/Kg
92-52-4	1,1-Biphenyl	Low	1	330	380 U	µg/Kg
91-58-7	2-chloronaphthalene	Low	1	330	380 U	µg/Kg
88-74-4	2-nitroaniline	Low	1	830	950 U	µg/Kg
131-11-3	DIMETHYL PHTHALATE	Low	1	330	380 U	µg/Kg
606-20-2	2,6-dinitrotoluene	Low	1	330	380 U	µg/Kg
208-96-8	ACENAPHTHYLENE	Low	1	330	380 U	µg/Kg
99-09-2	3-nitroaniline	Low	1	830	950 U	µg/Kg
83-32-9	ACENAPHTHENE	Low	1	330	380 U	µg/Kg
51-28-5	2,4-dinitrophenol	Low	1	830	950 U	µg/Kg
100-02-7	4-NITROPHENOL	Low	1	830	950 U	µg/Kg
132-64-9	DIBENZOFURAN	Low	1	330	380 U	µg/Kg
121-14-2	2,4-dinitrotoluene	Low	1	330	380 U	µg/Kg
84-66-2	DIETHYL PHTHALATE	Low	1	330	380 U	µg/Kg
86-73-7	FLUORENE	Low	1	330	380 U	µg/Kg
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	380 U	µg/Kg

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB12-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **13** SDG ID: **2004-B**
Lab Sample ID: **WU0770-5** Sampling Date/Time: **03/23/2004 16:45** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-01-6	4-NITROANILINE	Low	1	830	950 UJ	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	950 U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	380 U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	380 U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	380 U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	380 U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	950 U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	380 U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	380 U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	380 U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	380 U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	380 U	µg/Kg	
129-00-0	PYRENE	Low	1	330	380 U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	380 U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	380 UJ	µg/Kg	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	380 U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	380 U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	380 U	µg/Kg	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	380 U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	380 U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	380 U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	380 U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	380 U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	380 U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	380 U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB12-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **23** SDG ID: **2004-B**
Lab Sample ID: **WU0770-6** Sampling Date/Time: **03/23/2004 16:50** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
Method: CLP OLM04.2 S						
100-52-7	BENZALDEHYDE	Low	1	330	430 U	µg/Kg
108-95-2	PHENOL	Low	1	330	430 U	µg/Kg
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	330	430 U	µg/Kg
95-57-8	2-chlorophenol	Low	1	330	430 U	µg/Kg
95-48-7	2-methylphenol	Low	1	330	430 U	µg/Kg
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	330	430 U	µg/Kg
98-86-2	ACETOPHENONE	Low	1	330	430 U	µg/Kg
106-44-5	4-methylphenol	Low	1	330	430 U	µg/Kg
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	330	430 U	µg/Kg
67-72-1	HEXACHLOROETHANE	Low	1	330	430 U	µg/Kg
98-95-3	NITROBENZENE	Low	1	330	430 U	µg/Kg
78-59-1	ISOPHORONE	Low	1	330	430 U	µg/Kg
88-75-5	2-nitrophenol	Low	1	330	430 U	µg/Kg
105-67-9	2,4-dimethylphenol	Low	1	330	430 U	µg/Kg
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	330	430 U	µg/Kg
120-83-2	2,4-dichlorophenol	Low	1	330	430 U	µg/Kg
91-20-3	NAPHTHALENE	Low	1	330	430 U	µg/Kg
106-47-8	4-chloroaniline	Low	1	330	430 U	µg/Kg
87-68-3	HEXACHLOROBUTADIENE	Low	1	330	430 U	µg/Kg
105-60-2	CAPROLACTAM	Low	1	330	430 U	µg/Kg
59-50-7	4-chloro-3-methylphenol	Low	1	330	430 U	µg/Kg
91-57-6	2-methylnaphthalene	Low	1	330	430 U	µg/Kg
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	330	430 U	µg/Kg
88-06-2	2,4,6-trichlorophenol	Low	1	330	430 U	µg/Kg
95-95-4	2,4,5-trichlorophenol	Low	1	830	1,100 U	µg/Kg
92-52-4	1,1-Biphenyl	Low	1	330	430 U	µg/Kg
91-58-7	2-chloronaphthalene	Low	1	330	430 U	µg/Kg
88-74-4	2-nitroaniline	Low	1	830	1,100 U	µg/Kg
131-11-3	DIMETHYL PHTHALATE	Low	1	330	430 U	µg/Kg
606-20-2	2,6-dinitrotoluene	Low	1	330	430 U	µg/Kg
208-96-8	ACENAPHTHYLENE	Low	1	330	430 U	µg/Kg
99-09-2	3-nitroaniline	Low	1	830	1,100 U	µg/Kg
83-32-9	ACENAPHTHENE	Low	1	330	430 U	µg/Kg
51-28-5	2,4-dinitrophenol	Low	1	830	1,100 U	µg/Kg
100-02-7	4-NITROPHENOL	Low	1	830	1,100 U	µg/Kg
132-64-9	DIBENZOFURAN	Low	1	330	430 U	µg/Kg
121-14-2	2,4-dinitrotoluene	Low	1	330	430 U	µg/Kg
84-66-2	DIETHYL PHTHALATE	Low	1	330	430 U	µg/Kg
86-73-7	FLUORENE	Low	1	330	430 U	µg/Kg
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	330	430 U	µg/Kg

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-SB12-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **23** SDG ID: **2004-B**
Lab Sample ID: **WU0770-6** Sampling Date/Time: **03/23/2004 16:50** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-01-6	4-NITROANILINE	Low	1	830	1,100	UJ	µg/Kg	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	830	1,100	U	µg/Kg	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	330	430	U	µg/Kg	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	330	430	U	µg/Kg	
118-74-1	HEXACHLOROBENZENE	Low	1	330	430	U	µg/Kg	
1912-24-9	ATRAZINE	Low	1	330	430	U	µg/Kg	
87-86-5	PENTACHLOROPHENOL	Low	1	830	1,100	U	µg/Kg	
85-01-8	PHENANTHRENE	Low	1	330	430	U	µg/Kg	
120-12-7	ANTHRACENE	Low	1	330	430	U	µg/Kg	
86-74-8	CARBAZOLE	Low	1	330	430	U	µg/Kg	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	330	430	U	µg/Kg	
206-44-0	FLUORANTHENE	Low	1	330	430	U	µg/Kg	
129-00-0	PYRENE	Low	1	330	430	U	µg/Kg	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	330	430	U	µg/Kg	
91-94-1	3,3'-dichlorobenzidine	Low	1	330	430	UJ	µg/Kg	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	330	430	U	µg/Kg	
218-01-9	CHRYSENE	Low	1	330	430	U	µg/Kg	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	330	430	U	µg/Kg	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	330	430	U	µg/Kg	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	330	430	U	µg/Kg	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	330	430	U	µg/Kg	
50-32-8	BENZO(A)PYRENE	Low	1	330	430	U	µg/Kg	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	330	430	U	µg/Kg	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	330	430	U	µg/Kg	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	330	430	U	µg/Kg	

U - Non-detected
J - Estimated
N - Presumptively present
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B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-GW14-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0785-4** Sampling Date/Time: **03/23/2004 15:40** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L	
108-95-2	PHENOL	Low	1	10	0.5 J	µg/L	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L	
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L	
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L	
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L	
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L	
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L	
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L	
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L	
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L	
105-67-9	2,4-dimethylphenol	Low	1	10	13	µg/L	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L	
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L	
91-20-3	NAPHTHALENE	Low	25	120	800 D	µg/L	*
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L	
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L	
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L	
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L	
91-57-6	2-methylnaphthalene	Low	25	120	130 D	µg/L	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 U	µg/L	
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L	
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L	
92-52-4	1,1-Biphenyl	Low	1	10	12	µg/L	
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L	
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L	
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L	
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L	
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L	
99-09-2	3-nitroaniline	Low	1	25	25 UJ	µg/L	*
83-32-9	ACENAPHTHENE	Low	25	120	95 DJ	µg/L	*
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L	
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L	
132-64-9	DIBENZOFURAN	Low	1	10	26	µg/L	
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L	
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L	
86-73-7	FLUORENE	Low	1	10	16	µg/L	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L	

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D - (Lab qualifier) Reported from a dilution
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RL - Reporting limit
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Client Sample ID: **SWMU318-GW14-01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0785-4** Sampling Date/Time: **03/23/2004 15:40** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	0.6 J	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	24 J	µg/L	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	2 J	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 U	µg/L	
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW14-01DLDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0785-4DL2** Sampling Date/Time: **03/23/2004 0:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-52-7	BENZALDEHYDE	Low	25	10	120	R	µg/L	*
108-95-2	PHENOL	Low	25	10	120	R	µg/L	*
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	25	10	120	R	µg/L	*
95-57-8	2-chlorophenol	Low	25	10	120	R	µg/L	*
118-74-1	HEXACHLOROBENZENE	Low	25	10	120	R	µg/L	*
1912-24-9	ATRAZINE	Low	25	10	120	R	µg/L	*
87-86-5	PENTACHLOROPHENOL	Low	25	25	290	R	µg/L	*
85-01-8	PHENANTHRENE	Low	25	10	120	R	µg/L	*
120-12-7	ANTHRACENE	Low	25	10	120	R	µg/L	*
86-74-8	CARBAZOLE	Low	25	10	18	R	µg/L	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	25	10	120	R	µg/L	*
206-44-0	FLUORANTHENE	Low	25	10	120	R	µg/L	*
129-00-0	PYRENE	Low	25	10	120	R	µg/L	*
85-68-7	BUTYL BENZYL PHTHALATE	Low	25	10	120	R	µg/L	*
91-94-1	3,3'-dichlorobenzidine	Low	25	10	120	R	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	25	10	120	R	µg/L	*
218-01-9	CHRYSENE	Low	25	10	120	R	µg/L	*
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	25	10	120	R	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	25	10	120	R	µg/L	*
205-99-2	BENZO(B)FLUORANTHENE	Low	25	10	120	R	µg/L	*
207-08-9	BENZO(K)FLUORANTHENE	Low	25	10	120	R	µg/L	*
50-32-8	BENZO(A)PYRENE	Low	25	10	120	R	µg/L	*
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	25	10	120	R	µg/L	*
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	25	10	120	R	µg/L	*
191-24-2	BENZO[G,H,I]PERYLENE	Low	25	10	120	R	µg/L	*
95-48-7	2-methylphenol	Low	25	10	120	R	µg/L	*
108-60-1	2,2'-oxybis (1-chloropropane)	Low	25	10	120	R	µg/L	*
98-86-2	ACETOPHENONE	Low	25	10	120	R	µg/L	*
106-44-5	4-methylphenol	Low	25	10	120	R	µg/L	*
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	25	10	120	R	µg/L	*
67-72-1	HEXACHLOROETHANE	Low	25	10	120	R	µg/L	*
98-95-3	NITROBENZENE	Low	25	10	120	R	µg/L	*
78-59-1	ISOPHORONE	Low	25	10	120	R	µg/L	*
88-75-5	2-nitrophenol	Low	25	10	120	R	µg/L	*
105-67-9	2,4-dimethylphenol	Low	25	10	120	R	µg/L	*
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	25	10	120	R	µg/L	*
120-83-2	2,4-dichlorophenol	Low	25	10	120	R	µg/L	*
91-20-3	NAPHTHALENE	Low	25	10	800	R	µg/L	*
106-47-8	4-chloroaniline	Low	25	10	120	R	µg/L	*
87-68-3	HEXACHLOROBUTADIENE	Low	25	10	120	R	µg/L	*

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TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW14-01DLDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0785-4DL2** Sampling Date/Time: **03/23/2004 0:00** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
105-60-2	CAPROLACTAM	Low	25	10	120 R	µg/L	*
59-50-7	4-chloro-3-methylphenol	Low	25	10	120 R	µg/L	*
91-57-6	2-methylnaphthalene	Low	25	10	130 R	µg/L	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	25	10	120 R	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	25	10	120 R	µg/L	*
95-95-4	2,4,5-trichlorophenol	Low	25	25	290 R	µg/L	*
92-52-4	1,1-Biphenyl	Low	25	10	14 R	µg/L	*
91-58-7	2-chloronaphthalene	Low	25	10	120 R	µg/L	*
88-74-4	2-nitroaniline	Low	25	25	290 R	µg/L	*
131-11-3	DIMETHYL PHTHALATE	Low	25	10	120 R	µg/L	*
606-20-2	2,6-dinitrotoluene	Low	25	10	120 R	µg/L	*
208-96-8	ACENAPHTHYLENE	Low	25	10	120 R	µg/L	*
99-09-2	3-nitroaniline	Low	25	25	290 R	µg/L	*
83-32-9	ACENAPHTHENE	Low	25	10	95 R	µg/L	*
51-28-5	2,4-dinitrophenol	Low	25	25	290 R	µg/L	*
100-02-7	4-NITROPHENOL	Low	25	25	290 R	µg/L	*
132-64-9	DIBENZOFURAN	Low	25	10	28 R	µg/L	*
121-14-2	2,4-dinitrotoluene	Low	25	10	120 R	µg/L	*
84-66-2	DIETHYL PHTHALATE	Low	25	10	120 R	µg/L	*
86-73-7	FLUORENE	Low	25	10	18 R	µg/L	*
7005-72-3	4-chlorophenyl Phenyl Ether	Low	25	10	120 R	µg/L	*
100-01-6	4-NITROANILINE	Low	25	25	290 R	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	25	25	290 R	µg/L	*
86-30-6	N-NITROSODIPHENYLAMINE	Low	25	10	120 R	µg/L	*
101-55-3	4-bromophenyl Phenyl Ether	Low	25	10	120 R	µg/L	*

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B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW14-01RE** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0785-4RE** Sampling Date/Time: **03/23/2004 0:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	1	10	10 R	µg/L	*
108-95-2	PHENOL	Low	1	10	0.7 R	µg/L	*
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 R	µg/L	*
95-57-8	2-chlorophenol	Low	1	10	10 R	µg/L	*
95-48-7	2-methylphenol	Low	1	10	10 R	µg/L	*
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 R	µg/L	*
98-86-2	ACETOPHENONE	Low	1	10	10 R	µg/L	*
106-44-5	4-methylphenol	Low	1	10	10 R	µg/L	*
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 R	µg/L	*
67-72-1	HEXACHLOROETHANE	Low	1	10	10 R	µg/L	*
98-95-3	NITROBENZENE	Low	1	10	10 R	µg/L	*
78-59-1	ISOPHORONE	Low	1	10	10 R	µg/L	*
88-75-5	2-nitrophenol	Low	1	10	10 R	µg/L	*
105-67-9	2,4-dimethylphenol	Low	1	10	64 R	µg/L	*
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 R	µg/L	*
120-83-2	2,4-dichlorophenol	Low	1	10	10 R	µg/L	*
91-20-3	NAPHTHALENE	Low	1	10	240 R	µg/L	*
106-47-8	4-chloroaniline	Low	1	10	10 R	µg/L	*
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 R	µg/L	*
105-60-2	CAPROLACTAM	Low	1	10	10 R	µg/L	*
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 R	µg/L	*
91-57-6	2-methylnaphthalene	Low	1	10	99 R	µg/L	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 R	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 R	µg/L	*
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 R	µg/L	*
92-52-4	1,1-Biphenyl	Low	1	10	13 R	µg/L	*
91-58-7	2-chloronaphthalene	Low	1	10	10 R	µg/L	*
88-74-4	2-nitroaniline	Low	1	25	25 R	µg/L	*
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 R	µg/L	*
606-20-2	2,6-dinitrotoluene	Low	1	10	10 R	µg/L	*
208-96-8	ACENAPHTHYLENE	Low	1	10	10 R	µg/L	*
99-09-2	3-nitroaniline	Low	1	25	25 R	µg/L	*
83-32-9	ACENAPHTHENE	Low	1	10	68 R	µg/L	*
51-28-5	2,4-dinitrophenol	Low	1	25	25 R	µg/L	*
100-02-7	4-NITROPHENOL	Low	1	25	25 R	µg/L	*
132-64-9	DIBENZOFURAN	Low	1	10	24 R	µg/L	*
121-14-2	2,4-dinitrotoluene	Low	1	10	10 R	µg/L	*
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 R	µg/L	*
86-73-7	FLUORENE	Low	1	10	17 R	µg/L	*
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 R	µg/L	*

U - Non-detected **B** - (Lab qualifier) Found in the associated method blank
J - Estimated **D** - (Lab qualifier) Reported from a dilution
N - Presumptively present **TIC** - Tentatively identified compound
R - Unusable **RL** - Reporting limit

***** - Modification by data validation

Client Sample ID: **SWMU318-GW14-01RE** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0785-4RE** Sampling Date/Time: **03/23/2004 0:00** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
100-01-6	4-NITROANILINE	Low	1	25	25 R	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 R	µg/L	*
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 R	µg/L	*
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 R	µg/L	*
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 R	µg/L	*
1912-24-9	ATRAZINE	Low	1	10	10 R	µg/L	*
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 R	µg/L	*
85-01-8	PHENANTHRENE	Low	1	10	0.6 R	µg/L	*
120-12-7	ANTHRACENE	Low	1	10	10 R	µg/L	*
86-74-8	CARBAZOLE	Low	1	10	12 R	µg/L	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	1 R	µg/L	*
206-44-0	FLUORANTHENE	Low	1	10	10 R	µg/L	*
129-00-0	PYRENE	Low	1	10	10 R	µg/L	*
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 R	µg/L	*
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 R	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 R	µg/L	*
218-01-9	CHRYSENE	Low	1	10	10 R	µg/L	*
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	2 R	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 R	µg/L	*
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 R	µg/L	*
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 R	µg/L	*
50-32-8	BENZO(A)PYRENE	Low	1	10	10 R	µg/L	*
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 R	µg/L	*
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 R	µg/L	*
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 R	µg/L	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-GW14-01REDLDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0785-4REDL** Sampling Date/Time: **03/23/2004 0:00** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	10	10	47 R	µg/L	*
108-95-2	PHENOL	Low	10	10	47 R	µg/L	*
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	10	10	47 R	µg/L	*
95-57-8	2-chlorophenol	Low	10	10	47 R	µg/L	*
118-74-1	HEXACHLOROBENZENE	Low	10	10	47 R	µg/L	*
1912-24-9	ATRAZINE	Low	10	10	47 R	µg/L	*
87-86-5	PENTACHLOROPHENOL	Low	10	25	120 R	µg/L	*
85-01-8	PHENANTHRENE	Low	10	10	47 R	µg/L	*
120-12-7	ANTHRACENE	Low	10	10	47 R	µg/L	*
86-74-8	CARBAZOLE	Low	10	10	11 R	µg/L	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	10	10	47 R	µg/L	*
206-44-0	FLUORANTHENE	Low	10	10	47 R	µg/L	*
129-00-0	PYRENE	Low	10	10	47 R	µg/L	*
85-68-7	BUTYL BENZYL PHTHALATE	Low	10	10	47 R	µg/L	*
91-94-1	3,3'-dichlorobenzidine	Low	10	10	47 R	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	10	10	47 R	µg/L	*
218-01-9	CHRYSENE	Low	10	10	47 R	µg/L	*
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	10	10	47 R	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	10	10	47 R	µg/L	*
205-99-2	BENZO(B)FLUORANTHENE	Low	10	10	47 R	µg/L	*
207-08-9	BENZO(K)FLUORANTHENE	Low	10	10	47 R	µg/L	*
50-32-8	BENZO(A)PYRENE	Low	10	10	47 R	µg/L	*
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	10	10	47 R	µg/L	*
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	10	10	47 R	µg/L	*
191-24-2	BENZO[G,H,I]PERYLENE	Low	10	10	47 R	µg/L	*
95-48-7	2-methylphenol	Low	10	10	47 R	µg/L	*
108-60-1	2,2'-oxybis (1-chloropropane)	Low	10	10	47 R	µg/L	*
98-86-2	ACETOPHENONE	Low	10	10	47 R	µg/L	*
106-44-5	4-methylphenol	Low	10	10	47 R	µg/L	*
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	10	10	47 R	µg/L	*
67-72-1	HEXACHLOROETHANE	Low	10	10	47 R	µg/L	*
98-95-3	NITROBENZENE	Low	10	10	47 R	µg/L	*
78-59-1	ISOPHORONE	Low	10	10	47 R	µg/L	*
88-75-5	2-nitrophenol	Low	10	10	47 R	µg/L	*
105-67-9	2,4-dimethylphenol	Low	10	10	61 R	µg/L	*
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	10	10	47 R	µg/L	*
120-83-2	2,4-dichlorophenol	Low	10	10	47 R	µg/L	*
91-20-3	NAPHTHALENE	Low	10	10	580 R	µg/L	*
106-47-8	4-chloroaniline	Low	10	10	47 R	µg/L	*
87-68-3	HEXACHLOROBUTADIENE	Low	10	10	47 R	µg/L	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-GW14-01REDLDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0785-4REDL** Sampling Date/Time: **03/23/2004 0:00** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
105-60-2	CAPROLACTAM	Low	10	10	47 R	µg/L	*
59-50-7	4-chloro-3-methylphenol	Low	10	10	47 R	µg/L	*
91-57-6	2-methylnaphthalene	Low	10	10	110 R	µg/L	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	10	10	47 R	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	10	10	47 R	µg/L	*
95-95-4	2,4,5-trichlorophenol	Low	10	25	120 R	µg/L	*
92-52-4	1,1-Biphenyl	Low	10	10	14 R	µg/L	*
91-58-7	2-chloronaphthalene	Low	10	10	47 R	µg/L	*
88-74-4	2-nitroaniline	Low	10	25	120 R	µg/L	*
131-11-3	DIMETHYL PHTHALATE	Low	10	10	47 R	µg/L	*
606-20-2	2,6-dinitrotoluene	Low	10	10	47 R	µg/L	*
208-96-8	ACENAPHTHYLENE	Low	10	10	47 R	µg/L	*
99-09-2	3-nitroaniline	Low	10	25	120 R	µg/L	*
83-32-9	ACENAPHTHENE	Low	10	10	81 R	µg/L	*
51-28-5	2,4-dinitrophenol	Low	10	25	120 R	µg/L	*
100-02-7	4-NITROPHENOL	Low	10	25	120 R	µg/L	*
132-64-9	DIBENZOFURAN	Low	10	10	25 R	µg/L	*
121-14-2	2,4-dinitrotoluene	Low	10	10	47 R	µg/L	*
84-66-2	DIETHYL PHTHALATE	Low	10	10	47 R	µg/L	*
86-73-7	FLUORENE	Low	10	10	17 R	µg/L	*
7005-72-3	4-chlorophenyl Phenyl Ether	Low	10	10	47 R	µg/L	*
100-01-6	4-NITROANILINE	Low	10	25	120 R	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	10	25	120 R	µg/L	*
86-30-6	N-NITROSODIPHENYLAMINE	Low	10	10	47 R	µg/L	*
101-55-3	4-bromophenyl Phenyl Ether	Low	10	10	47 R	µg/L	*

U - Non-detected **B** - (Lab qualifier) Found in the associated method blank
J - Estimated **D** - (Lab qualifier) Reported from a dilution
N - Presumptively present **TIC** - Tentatively identified compound
R - Unusable **RL** - Reporting limit

***** - Modification by data validation

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Client Sample ID: **SWMU318-MW01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-10** Sampling Date/Time: **04/03/2004 16:05** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L
108-95-2	PHENOL	Low	1	10	10 U	µg/L
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L
91-20-3	NAPHTHALENE	Low	1	10	10 U	µg/L
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 U	µg/L
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L
86-73-7	FLUORENE	Low	1	10	10 U	µg/L
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-MW01** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-10** Sampling Date/Time: **04/03/2004 16:05** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 UJ	µg/L	*
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-MW02** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-11** Sampling Date/Time: **04/04/2004 10:50** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-52-7	BENZALDEHYDE	Low	1	10	10	U	µg/L	
108-95-2	PHENOL	Low	1	10	10	U	µg/L	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10	U	µg/L	
95-57-8	2-chlorophenol	Low	1	10	10	U	µg/L	
95-48-7	2-methylphenol	Low	1	10	10	U	µg/L	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10	U	µg/L	
98-86-2	ACETOPHENONE	Low	1	10	10	U	µg/L	
106-44-5	4-methylphenol	Low	1	10	10	U	µg/L	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10	U	µg/L	
67-72-1	HEXACHLOROETHANE	Low	1	10	10	U	µg/L	
98-95-3	NITROBENZENE	Low	1	10	10	U	µg/L	
78-59-1	ISOPHORONE	Low	1	10	10	U	µg/L	
88-75-5	2-nitrophenol	Low	1	10	10	U	µg/L	
105-67-9	2,4-dimethylphenol	Low	1	10	67		µg/L	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10	U	µg/L	
120-83-2	2,4-dichlorophenol	Low	1	10	10	U	µg/L	
91-20-3	NAPHTHALENE	Low	4	40	260	D	µg/L	*
106-47-8	4-chloroaniline	Low	1	10	10	U	µg/L	
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10	U	µg/L	
105-60-2	CAPROLACTAM	Low	1	10	10	U	µg/L	
59-50-7	4-chloro-3-methylphenol	Low	1	10	10	U	µg/L	
91-57-6	2-methylnaphthalene	Low	1	10	62		µg/L	
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10	U	µg/L	
88-06-2	2,4,6-trichlorophenol	Low	1	10	10	U	µg/L	
95-95-4	2,4,5-trichlorophenol	Low	1	25	25	U	µg/L	
92-52-4	1,1-Biphenyl	Low	1	10	8	J	µg/L	
91-58-7	2-chloronaphthalene	Low	1	10	10	U	µg/L	
88-74-4	2-nitroaniline	Low	1	25	25	U	µg/L	
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10	U	µg/L	
606-20-2	2,6-dinitrotoluene	Low	1	10	10	U	µg/L	
208-96-8	ACENAPHTHYLENE	Low	1	10	10	U	µg/L	
99-09-2	3-nitroaniline	Low	1	25	25	U	µg/L	
83-32-9	ACENAPHTHENE	Low	1	10	35		µg/L	
51-28-5	2,4-dinitrophenol	Low	1	25	25	U	µg/L	
100-02-7	4-NITROPHENOL	Low	1	25	25	U	µg/L	
132-64-9	DIBENZOFURAN	Low	1	10	10		µg/L	
121-14-2	2,4-dinitrotoluene	Low	1	10	10	U	µg/L	
84-66-2	DIETHYL PHTHALATE	Low	1	10	10	U	µg/L	
86-73-7	FLUORENE	Low	1	10	9		µg/L	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10	U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-MW02** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-11** Sampling Date/Time: **04/04/2004 10:50** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 UJ	µg/L	*
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-MW02DLDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-11DL** Sampling Date/Time: **04/04/2004 10:50** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
100-52-7	BENZALDEHYDE	Low	4	10	38 R	µg/L	*
108-95-2	PHENOL	Low	4	10	38 R	µg/L	*
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	4	10	38 R	µg/L	*
95-57-8	2-chlorophenol	Low	4	10	38 R	µg/L	*
95-48-7	2-methylphenol	Low	4	10	38 R	µg/L	*
108-60-1	2,2'-oxybis (1-chloropropane)	Low	4	10	38 R	µg/L	*
98-86-2	ACETOPHENONE	Low	4	10	38 R	µg/L	*
106-44-5	4-methylphenol	Low	4	10	38 R	µg/L	*
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	4	10	38 R	µg/L	*
67-72-1	HEXACHLOROETHANE	Low	4	10	38 R	µg/L	*
98-95-3	NITROBENZENE	Low	4	10	38 R	µg/L	*
78-59-1	ISOPHORONE	Low	4	10	38 R	µg/L	*
88-75-5	2-nitrophenol	Low	4	10	38 R	µg/L	*
105-67-9	2,4-dimethylphenol	Low	4	10	77 R	µg/L	*
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	4	10	38 R	µg/L	*
120-83-2	2,4-dichlorophenol	Low	4	10	38 R	µg/L	*
91-20-3	NAPHTHALENE	Low	4	10	260 R	µg/L	*
106-47-8	4-chloroaniline	Low	4	10	38 R	µg/L	*
87-68-3	HEXACHLOROBUTADIENE	Low	4	10	38 R	µg/L	*
105-60-2	CAPROLACTAM	Low	4	10	38 R	µg/L	*
59-50-7	4-chloro-3-methylphenol	Low	4	10	38 R	µg/L	*
91-57-6	2-methylnaphthalene	Low	4	10	78 R	µg/L	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	4	10	38 R	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	4	10	38 R	µg/L	*
95-95-4	2,4,5-trichlorophenol	Low	4	25	94 R	µg/L	*
92-52-4	1,1-Biphenyl	Low	4	10	15 R	µg/L	*
91-58-7	2-chloronaphthalene	Low	4	10	38 R	µg/L	*
88-74-4	2-nitroaniline	Low	4	25	94 R	µg/L	*
131-11-3	DIMETHYL PHTHALATE	Low	4	10	38 R	µg/L	*
606-20-2	2,6-dinitrotoluene	Low	4	10	38 R	µg/L	*
208-96-8	ACENAPHTHYLENE	Low	4	10	38 R	µg/L	*
99-09-2	3-nitroaniline	Low	4	25	94 R	µg/L	*
83-32-9	ACENAPHTHENE	Low	4	10	72 R	µg/L	*
51-28-5	2,4-dinitrophenol	Low	4	25	94 R	µg/L	*
100-02-7	4-NITROPHENOL	Low	4	25	94 R	µg/L	*
132-64-9	DIBENZOFURAN	Low	4	10	19 R	µg/L	*
121-14-2	2,4-dinitrotoluene	Low	4	10	38 R	µg/L	*
84-66-2	DIETHYL PHTHALATE	Low	4	10	38 R	µg/L	*
86-73-7	FLUORENE	Low	4	10	17 R	µg/L	*
7005-72-3	4-chlorophenyl Phenyl Ether	Low	4	10	38 R	µg/L	*

U - Non-detected
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D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

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Client Sample ID: **SWMU318-MW02DLDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-11DL** Sampling Date/Time: **04/04/2004 10:50** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-01-6	4-NITROANILINE	Low	4	25	94	R	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	4	25	94	R	µg/L	*
86-30-6	N-NITROSODIPHENYLAMINE	Low	4	10	38	R	µg/L	*
101-55-3	4-bromophenyl Phenyl Ether	Low	4	10	38	R	µg/L	*
118-74-1	HEXACHLOROBENZENE	Low	4	10	38	R	µg/L	*
1912-24-9	ATRAZINE	Low	4	10	38	R	µg/L	*
87-86-5	PENTACHLOROPHENOL	Low	4	25	94	R	µg/L	*
85-01-8	PHENANTHRENE	Low	4	10	38	R	µg/L	*
120-12-7	ANTHRACENE	Low	4	10	38	R	µg/L	*
86-74-8	CARBAZOLE	Low	4	10	11	R	µg/L	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	4	10	38	R	µg/L	*
206-44-0	FLUORANTHENE	Low	4	10	38	R	µg/L	*
129-00-0	PYRENE	Low	4	10	38	R	µg/L	*
85-68-7	BUTYL BENZYL PHTHALATE	Low	4	10	38	R	µg/L	*
91-94-1	3,3'-dichlorobenzidine	Low	4	10	38	R	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	4	10	38	R	µg/L	*
218-01-9	CHRYSENE	Low	4	10	38	R	µg/L	*
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	4	10	38	R	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	4	10	38	R	µg/L	*
205-99-2	BENZO(B)FLUORANTHENE	Low	4	10	38	R	µg/L	*
207-08-9	BENZO(K)FLUORANTHENE	Low	4	10	38	R	µg/L	*
50-32-8	BENZO(A)PYRENE	Low	4	10	38	R	µg/L	*
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	4	10	38	R	µg/L	*
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	4	10	38	R	µg/L	*
191-24-2	BENZO[G,H,I]PERYLENE	Low	4	10	38	R	µg/L	*

U - Non-detected
J - Estimated
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RL - Reporting limit
***** - Modification by data validation

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Client Sample ID:	**SWMU318-MW02D**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0894-12**	Sampling Date/Time:	**04/04/2004 10:50**	SDG Page:	

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-52-7	BENZALDEHYDE	Low	1	10	10	U	µg/L	
108-95-2	PHENOL	Low	1	10	10	U	µg/L	
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10	U	µg/L	
95-57-8	2-chlorophenol	Low	1	10	10	U	µg/L	
95-48-7	2-methylphenol	Low	1	10	10	U	µg/L	
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10	U	µg/L	
98-86-2	ACETOPHENONE	Low	1	10	10	U	µg/L	
106-44-5	4-methylphenol	Low	1	10	10	U	µg/L	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10	U	µg/L	
67-72-1	HEXACHLOROETHANE	Low	1	10	10	U	µg/L	
98-95-3	NITROBENZENE	Low	1	10	10	U	µg/L	
78-59-1	ISOPHORONE	Low	1	10	10	U	µg/L	
88-75-5	2-nitrophenol	Low	1	10	10	U	µg/L	
105-67-9	2,4-dimethylphenol	Low	1	10	74		µg/L	
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10	U	µg/L	
120-83-2	2,4-dichlorophenol	Low	1	10	10	U	µg/L	
91-20-3	NAPHTHALENE	Low	5	50	360	D	µg/L	*
106-47-8	4-chloroaniline	Low	1	10	10	U	µg/L	
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10	U	µg/L	
105-60-2	CAPROLACTAM	Low	1	10	10	U	µg/L	
59-50-7	4-chloro-3-methylphenol	Low	1	10	10	U	µg/L	
91-57-6	2-methylnaphthalene	Low	5	50	97	D	µg/L	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10	U	µg/L	
88-06-2	2,4,6-trichlorophenol	Low	1	10	10	U	µg/L	
95-95-4	2,4,5-trichlorophenol	Low	1	25	25	U	µg/L	
92-52-4	1,1-Biphenyl	Low	1	10	8	J	µg/L	
91-58-7	2-chloronaphthalene	Low	1	10	10	U	µg/L	
88-74-4	2-nitroaniline	Low	1	25	25	U	µg/L	
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10	U	µg/L	
606-20-2	2,6-dinitrotoluene	Low	1	10	10	U	µg/L	
208-96-8	ACENAPHTHYLENE	Low	1	10	10	U	µg/L	
99-09-2	3-nitroaniline	Low	1	25	25	U	µg/L	
83-32-9	ACENAPHTHENE	Low	1	10	32		µg/L	
51-28-5	2,4-dinitrophenol	Low	1	25	25	U	µg/L	
100-02-7	4-NITROPHENOL	Low	1	25	25	U	µg/L	
132-64-9	DIBENZOFURAN	Low	1	10	9	J	µg/L	
121-14-2	2,4-dinitrotoluene	Low	1	10	10	U	µg/L	
84-66-2	DIETHYL PHTHALATE	Low	1	10	10	U	µg/L	
86-73-7	FLUORENE	Low	1	10	8	J	µg/L	
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10	U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit

***** - Modification by data validation

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Client Sample ID: **SWMU318-MW02D** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-12** Sampling Date/Time: **04/04/2004 10:50** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	9 J	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 UJ	µg/L	*
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID:	**SWMU318-MW02DDLDL**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample Dilution**	% Moisture:	**NA**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0894-12DL2**	Sampling Date/Time:	**04/04/2004 0:00**	SDG Page:	

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results		Units	
100-52-7	BENZALDEHYDE	Low	5	10	47	R	µg/L	*
108-95-2	PHENOL	Low	5	10	47	R	µg/L	*
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	5	10	47	R	µg/L	*
101-55-3	4-bromophenyl Phenyl Ether	Low	5	10	47	R	µg/L	*
118-74-1	HEXACHLOROBENZENE	Low	5	10	47	R	µg/L	*
1912-24-9	ATRAZINE	Low	5	10	47	R	µg/L	*
87-86-5	PENTACHLOROPHENOL	Low	5	25	120	R	µg/L	*
85-01-8	PHENANTHRENE	Low	5	10	47	R	µg/L	*
120-12-7	ANTHRACENE	Low	5	10	47	R	µg/L	*
86-74-8	CARBAZOLE	Low	5	10	47	R	µg/L	*
84-74-2	DI-N-BUTYL PHTHALATE	Low	5	10	47	R	µg/L	*
206-44-0	FLUORANTHENE	Low	5	10	47	R	µg/L	*
129-00-0	PYRENE	Low	5	10	47	R	µg/L	*
85-68-7	BUTYL BENZYL PHTHALATE	Low	5	10	47	R	µg/L	*
91-94-1	3,3'-dichlorobenzidine	Low	5	10	47	R	µg/L	*
56-55-3	BENZO(A)ANTHRACENE	Low	5	10	47	R	µg/L	*
218-01-9	CHRYSENE	Low	5	10	47	R	µg/L	*
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	5	10	47	R	µg/L	*
117-84-0	DI-N-OCTYLPHTHALATE	Low	5	10	47	R	µg/L	*
205-99-2	BENZO(B)FLUORANTHENE	Low	5	10	47	R	µg/L	*
207-08-9	BENZO(K)FLUORANTHENE	Low	5	10	47	R	µg/L	*
50-32-8	BENZO(A)PYRENE	Low	5	10	47	R	µg/L	*
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	5	10	47	R	µg/L	*
95-57-8	2-chlorophenol	Low	5	10	47	R	µg/L	*
95-48-7	2-methylphenol	Low	5	10	47	R	µg/L	*
108-60-1	2,2'-oxybis (1-chloropropane)	Low	5	10	47	R	µg/L	*
98-86-2	ACETOPHENONE	Low	5	10	47	R	µg/L	*
106-44-5	4-methylphenol	Low	5	10	47	R	µg/L	*
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	5	10	47	R	µg/L	*
67-72-1	HEXACHLOROETHANE	Low	5	10	47	R	µg/L	*
98-95-3	NITROBENZENE	Low	5	10	47	R	µg/L	*
78-59-1	ISOPHORONE	Low	5	10	47	R	µg/L	*
88-75-5	2-nitrophenol	Low	5	10	47	R	µg/L	*
105-67-9	2,4-dimethylphenol	Low	5	10	83	R	µg/L	*
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	5	10	47	R	µg/L	*
120-83-2	2,4-dichlorophenol	Low	5	10	47	R	µg/L	*
91-20-3	NAPHTHALENE	Low	5	10	360	R	µg/L	*
106-47-8	4-chloroaniline	Low	5	10	47	R	µg/L	*
87-68-3	HEXACHLOROBUTADIENE	Low	5	10	47	R	µg/L	*
105-60-2	CAPROLACTAM	Low	5	10	47	R	µg/L	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable

B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit

***** - Modification by data validation

Client Sample ID: **SWMU318-MW02DDLDL** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample Dilution** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-12DL2** Sampling Date/Time: **04/04/2004 0:00** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method:	**CLP OLM04.2 S**						
59-50-7	4-chloro-3-methylphenol	Low	5	10	47 R	µg/L	*
91-57-6	2-methylnaphthalene	Low	5	10	97 R	µg/L	*
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	5	10	47 R	µg/L	*
88-06-2	2,4,6-trichlorophenol	Low	5	10	47 R	µg/L	*
95-95-4	2,4,5-trichlorophenol	Low	5	25	120 R	µg/L	*
92-52-4	1,1-Biphenyl	Low	5	10	16 R	µg/L	*
91-58-7	2-chloronaphthalene	Low	5	10	47 R	µg/L	*
88-74-4	2-nitroaniline	Low	5	25	120 R	µg/L	*
131-11-3	DIMETHYL PHTHALATE	Low	5	10	47 R	µg/L	*
606-20-2	2,6-dinitrotoluene	Low	5	10	47 R	µg/L	*
208-96-8	ACENAPHTHYLENE	Low	5	10	47 R	µg/L	*
99-09-2	3-nitroaniline	Low	5	25	120 R	µg/L	*
83-32-9	ACENAPHTHENE	Low	5	10	80 R	µg/L	*
51-28-5	2,4-dinitrophenol	Low	5	25	120 R	µg/L	*
100-02-7	4-NITROPHENOL	Low	5	25	120 R	µg/L	*
132-64-9	DIBENZOFURAN	Low	5	10	20 R	µg/L	*
121-14-2	2,4-dinitrotoluene	Low	5	10	47 R	µg/L	*
84-66-2	DIETHYL PHTHALATE	Low	5	10	47 R	µg/L	*
86-73-7	FLUORENE	Low	5	10	18 R	µg/L	*
7005-72-3	4-chlorophenyl Phenyl Ether	Low	5	10	47 R	µg/L	*
100-01-6	4-NITROANILINE	Low	5	25	120 R	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	5	25	120 R	µg/L	*
86-30-6	N-NITROSODIPHENYLAMINE	Low	5	10	47 R	µg/L	*
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	5	10	47 R	µg/L	*
191-24-2	BENZO[G,H,I]PERYLENE	Low	5	10	47 R	µg/L	*

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-MW03** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-13** Sampling Date/Time: **04/04/2004 12:30** SDG Page:

Method: CLP OLM04.2 S

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units
100-52-7	BENZALDEHYDE	Low	1	10	10 U	µg/L
108-95-2	PHENOL	Low	1	10	38	µg/L
111-44-4	BIS(2-CHLOROETHYL) ETHER	Low	1	10	10 U	µg/L
95-57-8	2-chlorophenol	Low	1	10	10 U	µg/L
95-48-7	2-methylphenol	Low	1	10	10 U	µg/L
108-60-1	2,2'-oxybis (1-chloropropane)	Low	1	10	10 U	µg/L
98-86-2	ACETOPHENONE	Low	1	10	10 U	µg/L
106-44-5	4-methylphenol	Low	1	10	10 U	µg/L
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	Low	1	10	10 U	µg/L
67-72-1	HEXACHLOROETHANE	Low	1	10	10 U	µg/L
98-95-3	NITROBENZENE	Low	1	10	10 U	µg/L
78-59-1	ISOPHORONE	Low	1	10	10 U	µg/L
88-75-5	2-nitrophenol	Low	1	10	10 U	µg/L
105-67-9	2,4-dimethylphenol	Low	1	10	10 U	µg/L
111-91-1	BIS(2-CHLOROETHOXY) METHANE	Low	1	10	10 U	µg/L
120-83-2	2,4-dichlorophenol	Low	1	10	10 U	µg/L
91-20-3	NAPHTHALENE	Low	1	10	10 U	µg/L
106-47-8	4-chloroaniline	Low	1	10	10 U	µg/L
87-68-3	HEXACHLOROBUTADIENE	Low	1	10	10 U	µg/L
105-60-2	CAPROLACTAM	Low	1	10	10 U	µg/L
59-50-7	4-chloro-3-methylphenol	Low	1	10	10 U	µg/L
91-57-6	2-methylnaphthalene	Low	1	10	10 U	µg/L
77-47-4	HEXACHLOROCYCLOPENTADIENE	Low	1	10	10 U	µg/L
88-06-2	2,4,6-trichlorophenol	Low	1	10	10 U	µg/L
95-95-4	2,4,5-trichlorophenol	Low	1	25	25 U	µg/L
92-52-4	1,1-Biphenyl	Low	1	10	10 U	µg/L
91-58-7	2-chloronaphthalene	Low	1	10	10 U	µg/L
88-74-4	2-nitroaniline	Low	1	25	25 U	µg/L
131-11-3	DIMETHYL PHTHALATE	Low	1	10	10 U	µg/L
606-20-2	2,6-dinitrotoluene	Low	1	10	10 U	µg/L
208-96-8	ACENAPHTHYLENE	Low	1	10	10 U	µg/L
99-09-2	3-nitroaniline	Low	1	25	25 U	µg/L
83-32-9	ACENAPHTHENE	Low	1	10	10 U	µg/L
51-28-5	2,4-dinitrophenol	Low	1	25	25 U	µg/L
100-02-7	4-NITROPHENOL	Low	1	25	25 U	µg/L
132-64-9	DIBENZOFURAN	Low	1	10	10 U	µg/L
121-14-2	2,4-dinitrotoluene	Low	1	10	10 U	µg/L
84-66-2	DIETHYL PHTHALATE	Low	1	10	10 U	µg/L
86-73-7	FLUORENE	Low	1	10	10 U	µg/L
7005-72-3	4-chlorophenyl Phenyl Ether	Low	1	10	10 U	µg/L

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

Client Sample ID: **SWMU318-MW03** Matrix: **Water** Lab ID: **KASW**
Sample Type: **Site Sample** % Moisture: **NA** SDG ID: **2004-B**
Lab Sample ID: **WU0894-13** Sampling Date/Time: **04/04/2004 12:30** SDG Page:

CAS Numbe	Analyte Name	Leve	D/F	RL	Validated Results	Units	
Method: CLP OLM04.2 S							
100-01-6	4-NITROANILINE	Low	1	25	25 UJ	µg/L	*
534-52-1	4,6-dinitro-2-methyl-phenol	Low	1	25	25 U	µg/L	
86-30-6	N-NITROSODIPHENYLAMINE	Low	1	10	10 U	µg/L	
101-55-3	4-bromophenyl Phenyl Ether	Low	1	10	10 U	µg/L	
118-74-1	HEXACHLOROBENZENE	Low	1	10	10 U	µg/L	
1912-24-9	ATRAZINE	Low	1	10	10 U	µg/L	
87-86-5	PENTACHLOROPHENOL	Low	1	25	25 U	µg/L	
85-01-8	PHENANTHRENE	Low	1	10	10 U	µg/L	
120-12-7	ANTHRACENE	Low	1	10	10 U	µg/L	
86-74-8	CARBAZOLE	Low	1	10	10 U	µg/L	
84-74-2	DI-N-BUTYL PHTHALATE	Low	1	10	10 U	µg/L	
206-44-0	FLUORANTHENE	Low	1	10	10 U	µg/L	
129-00-0	PYRENE	Low	1	10	10 U	µg/L	
85-68-7	BUTYL BENZYL PHTHALATE	Low	1	10	10 U	µg/L	
91-94-1	3,3'-dichlorobenzidine	Low	1	10	10 U	µg/L	
56-55-3	BENZO(A)ANTHRACENE	Low	1	10	10 U	µg/L	
218-01-9	CHRYSENE	Low	1	10	10 U	µg/L	
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	Low	1	10	10 U	µg/L	
117-84-0	DI-N-OCTYLPHTHALATE	Low	1	10	10 U	µg/L	
205-99-2	BENZO(B)FLUORANTHENE	Low	1	10	10 UJ	µg/L	*
207-08-9	BENZO(K)FLUORANTHENE	Low	1	10	10 U	µg/L	
50-32-8	BENZO(A)PYRENE	Low	1	10	10 U	µg/L	
193-39-5	INDENO(1,2,3-CD)PYRENE	Low	1	10	10 U	µg/L	
53-70-3	DIBENZO(A,H)ANTHRACENE	Low	1	10	10 U	µg/L	
191-24-2	BENZO[G,H,I]PERYLENE	Low	1	10	10 U	µg/L	

U - Non-detected
J - Estimated
N - Presumptively present
R - Unusable
B - (Lab qualifier) Found in the associated method blank
D - (Lab qualifier) Reported from a dilution
TIC - Tentatively identified compound
RL - Reporting limit
***** - Modification by data validation

METAL

Marine Corp Base Camp Lejeune
AS Database
Site: SWMU 318

DATA VALIDATION REPORT

SDG 2004-B

Prepared for:

CH2M HILL
Herndon, VA

Integrate Project Number: 10086

May, 2004

Integrate Data Validation Reporting Method

The purpose of this section is to give the data user an understanding of the ideas and concepts associated with data validation in general and with the Integrate, Inc.™ (Integrate) method of reporting validated data.

Analyte Level Validation Issues

Integrate has developed a method for reporting validated data which utilizes a presentation of laboratory data issues and validation issues. This technique is based on the concept that issues encountered in the validation of laboratory data affect individual analytes of a sample. For instance, determining that a detected analyte in a sample was the result of laboratory contamination will cause only that analyte to be qualified.

Integrate Codes: Standardizing the Description of Analytical Defects

Integrate has standardized the data validation process by developing a database of codes employed by our analysts to describe the various analytical defects that may occur with an analysis. Each code is associated with written text describing the problem and the qualification that may be applied. For instance, the code that would be applied to an analyte that was determined to be a result of laboratory contamination would be BC (Blank Contamination). A complete listing of the analyte qualification parameters and their respective codes are presented below in *Analyte Qualification Codes*.

Analyte Qualification Codes

- CO Comment
- HT Holding Time
- IC Initial Calibration
- CC Continuing Calibration
- BC Blank Contamination
- MS Matrix Spike Effects
- CQ Compound Quantitation
- AS Analytical Sequence

Metal Section Reporting Format

The Metal Section of this data validation report is divided into 1) a text-formatted report which describes the contents of the laboratory data package and 2) a number of tabular reports which allow the data user to readily obtain information about the results of the data validation. Below is a description of the type of information contained in these tabular reports.

1) *Narrative of the Sample Delivery Group (SDG):* This section provides general information that pertains to the data package, such as the date of receipt, the number and type of samples, the laboratory performing the analysis, the instrumentation utilized to perform the analysis, the method of analysis, and the number and type of quality control parameters reported by the laboratory. Additionally, any other pertinent issues dealing with the laboratory or the data package may be noted in this section.

2) ***Table M1*** *Summary of Metal Data Validation Issues*: This table represents a bulleted summary of all metal samples that were validated for analyte level defects and provides a quick view of any issues that were associated with this sample delivery group. A bullet represents the assignment of a comment and/or qualifier by the data validator for a specific sample. The nature of a qualification can be found in ***Table M2*** *Metal Analyte Qualification Summary*.

3) ***Table M2*** *Metal Analyte Qualification Summary*: This tabular report displays all of the analyte-level data validation issues checked (*Analyte Qualification Codes*). The table indicates the client sample name, the analyte that has been qualified, the qualification code, the lab result and its qualifier and units, the validated result and the validation qualifier and units. Explanations of the actions taken by the validator are explained in ***Table M3*** *Metal Analyte Qualification Comments.*

4) ***Table M3*** *Metal Analyte Qualification Comments:* This report contains an explanation of each problem and any qualification which was documented in ***Table M2*** *Metal Analyte Qualification Summary*.

5) ***Table M4*** *Validated Metal Results*: This report displays all the analytical and validated information in a one-sample per-page view. It includes the metal analyte list, analytical extraction level, dilution factor, method quantitation limits per analyte, the results for each analyte and the units of measure for each analyte.

Narrative of Sample Delivery Group (SDG): 2004-B

On May 25, 2004 Integrate, Inc. received one data package containing results for thirty site samples which were analyzed by Katahdin Analytical Services, Inc. for metals. The laboratory utilized a Sequential Trace Inductively Coupled Plasma Emission Spectrophotometer (ICP) Analyzer and cold vapor AA according to CLP SOW ILMO4.0/6010B/7470A. The following quality control parameters were reported in the data package:

Laboratory QC
• 2 linear matrix sample(s)
• 6 matrix spike(s)
• 6 matrix duplicate(s)
• 10 method blank(s)
• 10 laboratory control sample(s)
• 0 laboratory control sample duplicate(s)

Note:

1. The ICP interelement correction factor study was performed on January 29, 2003. This is outside the method recommendation.
2. The ICP linear range study was performed on January 17, 2003. This is outside the method recommendation.
3. All field quality control samples are reported in a QA database data validation report.
4. Samples SWMU318-SB05-02D, SWMU318-SB10-00, SWMU318-SB10-03 , SWMU318-SB07-00, SWMU318-SB07-02, SWMU318-SB08-00, SWMU318-SB06-01D and SWMU318-SB08-04 were not marked on the chains of custody for metals anlaysis. Verbal instructions were given for sample analysis.

Lab: **KASW / KASW**

SDG ID: **2004-B**

	Analyte Qualification							
Client Sample	AS	CO	HT	IC	CC	BC	MS	CQ
SWMU318-MW01						•		
SWMU318-MW02								
SWMU318-MW03						•		
SWMU318-SB01-00							•	
SWMU318-SB01-04							•	
SWMU318-SB02-01							•	
SWMU318-SB02-01D							•	
SWMU318-SB02-04							•	
SWMU318-SB03-00						•	•	
SWMU318-SB03-01							•	
SWMU318-SB04-02							•	
SWMU318-SB04-04							•	
SWMU318-SB05-02							•	
SWMU318-SB05-02D							•	
SWMU318-SB05-03							•	
SWMU318-SB06-01							•	
SWMU318-SB06-01D							•	
SWMU318-SB06-02							•	
SWMU318-SB07-00								
SWMU318-SB07-02						•		
SWMU318-SB08-00								
SWMU318-SB08-04						•		
SWMU318-SB09-00							•	
SWMU318-SB09-02							•	
SWMU318-SB10-00						•	•	
SWMU318-SB10-03							•	
SWMU318-SB11-01						•	•	
SWMU318-SB11-03							•	
SWMU318-SB12-01							•	
SWMU318-SB12-04								

All samples were validated. A bullet (•) denotes sample qualification.

Analyte Qualification Codes:

AS - Analytical sequence
CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
BC - Blank contamination
MS - Matrix spike effects
CQ - Compound/parameter quantitation

M2 - Metal Analyte Qualification Summary

As prepared by Integrate, Inc.

Marine Corp Base Camp Lejeu
2004-B

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	AS	CO	HT	IC	CC	BC	MS	CQ	Lab Result		Units	Validated Result		Units
SWMU318-MW01															
	CHROMIUM	-	-	-	-	-	13	-	-	0.86	B	µg/L	10	U	µg/L
SWMU318-MW03															
	CHROMIUM	-	-	-	-	-	13	-	-	2.1	B	µg/L	10	U	µg/L
SWMU318-SB01-00															
	SILVER	-	-	-	-	-	-	21,23	-	4.6		mg/Kg	4.6	J	mg/Kg
	CHROMIUM	-	-	-	-	-	-	23	-	6.1		mg/Kg	6.1	J	mg/Kg
	SELENIUM	-	-	-	-	-	-	21	-	0.42	B	mg/Kg	0.42	J	mg/Kg
SWMU318-SB01-04															
	SILVER	-	-	-	-	-	-	21,23	-	0.25	U	mg/Kg	0.25	UJ	mg/Kg
	CHROMIUM	-	-	-	-	-	-	23	-	14.6		mg/Kg	14.6	J	mg/Kg
	SELENIUM	-	-	-	-	-	-	21	-	0.5	U	mg/Kg	0.5	UJ	mg/Kg
SWMU318-SB02-01															
	SILVER	-	-	-	-	-	-	21,23	-	0.19	U	mg/Kg	0.19	UJ	mg/Kg
	CHROMIUM	-	-	-	-	-	-	23	-	5		mg/Kg	5	J	mg/Kg
	SELENIUM	-	-	-	-	-	-	21	-	0.81	B	mg/Kg	0.81	J	mg/Kg
SWMU318-SB02-01D															
	SILVER	-	-	-	-	-	-	21,23	-	0.21	U	mg/Kg	0.21	UJ	mg/Kg
	CHROMIUM	-	-	-	-	-	-	23	-	8.4		mg/Kg	8.4	J	mg/Kg
	SELENIUM	-	-	-	-	-	-	21	-	0.66	B	mg/Kg	0.66	J	mg/Kg
SWMU318-SB02-04															
	SILVER	-	-	-	-	-	-	21,23	-	0.24	U	mg/Kg	0.24	UJ	mg/Kg
	CHROMIUM	-	-	-	-	-	-	23	-	11.1		mg/Kg	11.1	J	mg/Kg
	SELENIUM	-	-	-	-	-	-	21	-	0.47	U	mg/Kg	0.47	UJ	mg/Kg
SWMU318-SB03-00															
	ARSENIC	-	-	-	-	-	13	-	-	0.38	B	mg/Kg	1.4	U	mg/Kg
	BARIUM	-	-	-	-	-	-	23	-	4.6		mg/Kg	4.6	J	mg/Kg
	CADMIUM	-	-	-	-	-	13	-	-	0.06	B	mg/Kg	10	U	mg/Kg

Analyte Qualification Codes:

AS - Analytical sequence
CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
BC - Blank contamination
MS - Matrix spike effects
CQ - Compound/parameter quantitation

Analyte Qualifiers:

U - Non-detected
J - Estimated
R - Unusable
B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	AS	CO	HT	IC	CC	BC	MS	CQ	Lab Result		Units	Validated Result		Units
	CHROMIUM	-	-	-	-	-	-	23	-	2.8		mg/Kg	2.8	J	mg/Kg
	LEAD	-	-	-	-	-	-	23	-	2		mg/Kg	2	J	mg/Kg
SWMU318-SB03-01															
	SILVER	-	-	-	-	-	-	21,23	-	0.22	U	mg/Kg	0.22	UJ	mg/Kg
	CHROMIUM	-	-	-	-	-	-	23	-	10.2		mg/Kg	10.2	J	mg/Kg
	SELENIUM	-	-	-	-	-	-	21	-	0.86	B	mg/Kg	0.86	J	mg/Kg
SWMU318-SB04-02															
	SILVER	-	-	-	-	-	-	21,23	-	0.3	U	mg/Kg	0.3	UJ	mg/Kg
	CHROMIUM	-	-	-	-	-	-	23	-	34		mg/Kg	34	J	mg/Kg
	SELENIUM	-	-	-	-	-	-	21	-	0.89	B	mg/Kg	0.89	J	mg/Kg
SWMU318-SB04-04															
	SILVER	-	-	-	-	-	-	21,23	-	0.25	U	mg/Kg	0.25	UJ	mg/Kg
	CHROMIUM	-	-	-	-	-	-	23	-	6.7		mg/Kg	6.7	J	mg/Kg
	SELENIUM	-	-	-	-	-	-	21	-	0.77	B	mg/Kg	0.77	J	mg/Kg
SWMU318-SB05-02															
	LEAD	-	-	-	-	-	-	23	-	45.9		mg/Kg	45.9	J	mg/Kg
SWMU318-SB05-02D															
	LEAD	-	-	-	-	-	-	23	-	26.1		mg/Kg	26.1	J	mg/Kg
SWMU318-SB05-03															
	LEAD	-	-	-	-	-	-	23	-	12.2		mg/Kg	12.2	J	mg/Kg
SWMU318-SB06-01															
	SILVER	-	-	-	-	-	-	21,23	-	0.26	U	mg/Kg	0.26	UJ	mg/Kg
	CHROMIUM	-	-	-	-	-	-	23	-	5.1		mg/Kg	5.1	J	mg/Kg
	SELENIUM	-	-	-	-	-	-	21	-	1	B	mg/Kg	1	J	mg/Kg
SWMU318-SB06-01D															
	SILVER	-	-	-	-	-	-	21,23	-	0.2	U	mg/Kg	0.2	UJ	mg/Kg
	CHROMIUM	-	-	-	-	-	-	23	-	7.2		mg/Kg	7.2	J	mg/Kg
	SELENIUM	-	-	-	-	-	-	21	-	0.65	B	mg/Kg	0.65	J	mg/Kg

Analyte Qualification Codes:

AS - Analytical sequence
CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
BC - Blank contamination
MS - Matrix spike effects
CQ - Compound/parameter quantitation

Analyte Qualifiers:

U - Non-detected
J - Estimated
R - Unusable
B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Analyte Name	AS	CO	HT	IC	CC	BC	MS	CQ	Lab Result		Units	Validated Result		Units
SWMU318-SB06-02															
	SILVER	-	-	-	-	-	-	21,23	-	0.23	U	mg/Kg	0.23	UJ	mg/Kg
	CHROMIUM	-	-	-	-	-	-	23	-	14		mg/Kg	14	J	mg/Kg
	SELENIUM	-	-	-	-	-	-	21	-	0.6	B	mg/Kg	0.6	J	mg/Kg
SWMU318-SB07-02															
	CADMIUM	-	-	-	-	-	13	-	-	0.07	B	mg/Kg	1.8	U	mg/Kg
SWMU318-SB08-04															
	CADMIUM	-	-	-	-	-	13	-	-	0.06	B	mg/Kg	1.8	U	mg/Kg
SWMU318-SB09-00															
	LEAD	-	-	-	-	-	-	23	-	21.7		mg/Kg	21.7	J	mg/Kg
SWMU318-SB09-02															
	LEAD	-	-	-	-	-	-	23	-	3.8		mg/Kg	3.8	J	mg/Kg
SWMU318-SB10-00															
	CADMIUM	-	-	-	-	-	13	-	-	0.04	B	mg/Kg	0.87	U	mg/Kg
	LEAD	-	-	-	-	-	-	21	-	8.4		mg/Kg	8.4	J	mg/Kg
SWMU318-SB10-03															
	LEAD	-	-	-	-	-	-	21	-	14.4		mg/Kg	14.4	J	mg/Kg
SWMU318-SB11-01															
	LEAD	-	-	-	-	-	-	21	-	13.7		mg/Kg	13.7	J	mg/Kg
	CADMIUM	-	-	-	-	-	13	-	-	0.16	B	mg/Kg	0.99	U	mg/Kg
SWMU318-SB11-03															
	LEAD	-	-	-	-	-	-	21	-	5.3		mg/Kg	5.3	J	mg/Kg
SWMU318-SB12-01															
	LEAD	-	-	-	-	-	-	21	-	3.5		mg/Kg	3.5	J	mg/Kg

Analyte Qualification Codes:

AS - Analytical sequence
CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
BC - Blank contamination
MS - Matrix spike effects
CQ - Compound/parameter quantitation

Analyte Qualifiers:

U - Non-detected
J - Estimated
R - Unusable
B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

Qualification Category: **MS**

Qualification Code: **23**

Qualification Description: Duplicate precision criteria was not met on a metal analyte.

Qualification Action: When the concentration of a metal analyte is fives times greater than the detection limit, the relative percent difference (RPD) should not exceed 20 percent. When the analyte value is less than five ti the detection limit, the control limit is +/- two times the detection limit. If a duplicate result exceeds th criteria, the results of all samples in the associated batch are qualified as estimated (J) or non-detec estimated (UJ).

Qualification Category: **BC**

Qualification Code: **13**

Qualification Description: Contamination was detected in a blank and the detection limit for this analyte in the sample was rais using the "five times rule."

Qualification Action: EPA methods do not allow blank results to be subtracted from the sample results. Instead, the level the blanks are used to establish a higher detection limit for those analytes found in the blank. When contaminant is found in any blank (ICB, CCB, PB, FB, EB) above the detection limit and below the reporting limit, the "five times rule" is employed. For this rule, the blank result is multiplied by a facto 5 to achieve a "new blank level". If a reported sample value is greater than the reporting limit but les than the new blank level, then the sample's value is used with a non-detect (U) qualifier. If the sam value is greater than the new blank level, no action is taken.

Qualification Category: **MS**

Qualification Code: **21**

Qualification Description: The recovery of the pre-digestion matrix spike for an analyte was low.

Qualification Action: The pre-digestion spike is prepared by adding a known amount of an analyte to the sample before t acid digestion. If the spike recovery is below acceptable limits, results in all samples for the affecte analyte may be biased on the low side. The results reported are assumed to be the minimum possib value. All results are qualified as estimated (J) and estimated non-detected (UJ). If a spike recover less than 30%, non-detected results may be qualified as unusable (R).

Client Sample ID:	**SWMU318-SB01-00**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**85**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-001**	Sampling Date/Time:	**03/16/2004 14:01**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7440-22-4	SILVER	SW846 6010B	1	1.6	4.6	J	mg/Kg	*
7439-97-6	MERCURY	SW846 7470A	1	0.11	0.01	U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	1.6	0.71	B	mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	32	10.3	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.81	0.43	B	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	1.6	6.1	J	mg/Kg	*
7439-92-1	LEAD	SW846 6010B	1	0.49	19.8		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	0.81	0.42	J	mg/Kg	*

Client Sample ID:	**SWMU318-SB01-04**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**74**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-002**	Sampling Date/Time:	**03/16/2004 14:10**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.11	0.07	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	2.2	0.25	UJ	mg/Kg	*
7440-38-2	ARSENIC	SW846 6010B	1	2.2	1.4	B	mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	43	15.9	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	1.1	0.14	B	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	2.2	14.6	J	mg/Kg	*
7439-92-1	LEAD	SW846 6010B	1	0.65	11		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	1.1	0.5	UJ	mg/Kg	*

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB02-01**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**90**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-004**	Sampling Date/Time:	**03/16/2004 14:50**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.1	0.04	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	1.7	0.19	UJ	mg/Kg	*
7440-38-2	ARSENIC	SW846 6010B	1	1.7	1	B	mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	33	12.8	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.83	0.09	B	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	1.7	5	J	mg/Kg	*
7439-92-1	LEAD	SW846 6010B	1	0.5	7.4		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	0.83	0.81	J	mg/Kg	*

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB02-01D**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**85**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-005**	Sampling Date/Time:	**03/16/2004 14:50**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.11	0.05	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	1.8	0.21	UJ	mg/Kg	*
7440-38-2	ARSENIC	SW846 6010B	1	1.8	1.8		mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	35	19.3	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.89	0.11	B	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	1.8	8.4	J	mg/Kg	*
7439-92-1	LEAD	SW846 6010B	1	0.53	11		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	0.89	0.66	J	mg/Kg	*

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB03-01**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**86**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-006**	Sampling Date/Time:	**03/16/2004 15:51**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.11	0.06	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	1.9	0.22	UJ	mg/Kg	*
7440-38-2	ARSENIC	SW846 6010B	1	1.9	3.1		mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	38	15.3	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.95	0.05	U	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	1.9	10.2	J	mg/Kg	*
7439-92-1	LEAD	SW846 6010B	1	0.57	8.6		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	0.95	0.86	J	mg/Kg	*

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB04-02**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**67**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-008**	Sampling Date/Time:	**03/16/2004 15:10**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.12	0.07	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	2.6	0.3	UJ	mg/Kg	*
7440-38-2	ARSENIC	SW846 6010B	1	2.6	51		mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	52	21.4	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	1.3	0.07	U	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	2.6	34	J	mg/Kg	*
7439-92-1	LEAD	SW846 6010B	1	0.78	14.8		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	1.3	0.89	J	mg/Kg	*

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB04-04**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**80**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-009**	Sampling Date/Time:	**03/16/2004 15:15**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.12	0.03	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	2.1	0.25	UJ	mg/Kg	*
7440-38-2	ARSENIC	SW846 6010B	1	2.1	1.6	B	mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	43	4.8	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	1.1	0.05	U	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	2.1	6.7	J	mg/Kg	*
7439-92-1	LEAD	SW846 6010B	1	0.64	6.7		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	1.1	0.77	J	mg/Kg	*

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB06-01**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**80**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-013**	Sampling Date/Time:	**03/16/2004 16:10**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.11	0.05	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	2.2	0.26	UJ	mg/Kg	*
7440-38-2	ARSENIC	SW846 6010B	1	2.2	1	B	mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	44	13.6	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	1.1	0.07	B	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	2.2	5.1	J	mg/Kg	*
7439-92-1	LEAD	SW846 6010B	1	0.67	10.1		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	1.1	1	J	mg/Kg	*

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB06-01D**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**80**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-014**	Sampling Date/Time:	**03/16/2004 16:10**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.1	0.05	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	1.8	0.2	UJ	mg/Kg	*
7440-38-2	ARSENIC	SW846 6010B	1	1.8	1.6	B	mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	35	14.9	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.88	0.08	B	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	1.8	7.2	J	mg/Kg	*
7439-92-1	LEAD	SW846 6010B	1	0.53	9.5		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	0.88	0.65	J	mg/Kg	*

Client Sample ID:	**SWMU318-SB06-02**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**77**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-015**	Sampling Date/Time:	**03/16/2004 16:25**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.099	0.11		mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	2	0.23	UJ	mg/Kg	*
7440-38-2	ARSENIC	SW846 6010B	1	2	1.1	B	mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	39	23.5	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.99	0.05	U	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	2	14	J	mg/Kg	*
7439-92-1	LEAD	SW846 6010B	1	0.59	15.8		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	0.99	0.6	J	mg/Kg	*

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB02-04**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**76**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0691-016**	Sampling Date/Time:	**03/16/2004 15:22**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.1	0.03	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	2	0.24	UJ	mg/Kg	*
7440-38-2	ARSENIC	SW846 6010B	1	2	10.2		mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	41	9.4	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	1	0.05	U	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	2	11.1	J	mg/Kg	*
7439-92-1	LEAD	SW846 6010B	1	0.61	7.5		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	1	0.47	UJ	mg/Kg	*

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB05-02D**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**82**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0732-001**	Sampling Date/Time:	**03/16/2004 16:50**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.12	0.08	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	1.5	0.18	U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	1.5	5.4		mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	30	22.8	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.76	0.15	B	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	1.5	18.6		mg/Kg	
7439-92-1	LEAD	SW846 6010B	1	0.46	26.1	J	mg/Kg	*
7782-49-2	SELENIUM	SW846 6010B	1	0.76	0.5	B	mg/Kg	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB05-02**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**77**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0732-002**	Sampling Date/Time:	**03/16/2004 16:50**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7440-22-4	SILVER	SW846 6010B	1	1.8	0.21	U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	1.8	4.4		mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	36	18.8	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.91	0.24	B	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	1.8	13.2		mg/Kg	
7439-92-1	LEAD	SW846 6010B	1	0.54	45.9	J	mg/Kg	*
7782-49-2	SELENIUM	SW846 6010B	1	0.91	0.42	U	mg/Kg	
7439-97-6	MERCURY	SW846 7470A	1	0.12	0.04	B	mg/Kg	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB05-03**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**82**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0732-003**	Sampling Date/Time:	**03/16/2004 17:18**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7440-22-4	SILVER	SW846 6010B	1	1.7	0.2	U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	1.7	1.9		mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	35	16.2	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.87	0.37	B	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	1.7	8.1		mg/Kg	
7439-92-1	LEAD	SW846 6010B	1	0.52	12.2	J	mg/Kg	*
7782-49-2	SELENIUM	SW846 6010B	1	0.87	0.62	B	mg/Kg	
7439-97-6	MERCURY	SW846 7470A	1	0.12	0.04	B	mg/Kg	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB03-00**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**82**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0744-001**	Sampling Date/Time:	**03/17/2004 13:38**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results	Units	
7439-97-6	MERCURY	SW846 7470A	1	0.11	0.01 U	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	2.5	0.2 U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	1.4	1.4 U	mg/Kg	*
7440-39-3	BARIUM	SW846 6010B	1	0.85	4.6 J	mg/Kg	*
7440-43-9	CADMIUM	SW846 6010B	1	1.7	10 U	mg/Kg	*
7440-47-3	CHROMIUM	SW846 6010B	1	2.5	2.8 J	mg/Kg	*
7439-92-1	LEAD	SW846 6010B	1	0.85	2 J	mg/Kg	*
7782-49-2	SELENIUM	SW846 6010B	1	1.7	0.39 U	mg/Kg	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB07-00**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**83**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0744-002**	Sampling Date/Time:	**03/20/2004 8:39**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results	Units
7439-97-6	MERCURY	SW846 7470A	1	0.11	0.01 B	mg/Kg
7440-22-4	SILVER	SW846 6010B	1	2.2	0.17 U	mg/Kg
7440-38-2	ARSENIC	SW846 6010B	1	1.2	0.48 B	mg/Kg
7440-39-3	BARIUM	SW846 6010B	1	0.75	5.9	mg/Kg
7440-43-9	CADMIUM	SW846 6010B	1	1.5	0.04 U	mg/Kg
7440-47-3	CHROMIUM	SW846 6010B	1	2.2	3.8	mg/Kg
7439-92-1	LEAD	SW846 6010B	1	0.75	2.8	mg/Kg
7782-49-2	SELENIUM	SW846 6010B	1	1.5	0.38 B	mg/Kg

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB07-02**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**78**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0744-003**	Sampling Date/Time:	**03/20/2004 8:41**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.11	0.05	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	2.8	0.21	U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	1.5	1.6		mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	0.92	19.1		mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	1.8	1.8	U	mg/Kg	*
7440-47-3	CHROMIUM	SW846 6010B	1	2.8	8		mg/Kg	
7439-92-1	LEAD	SW846 6010B	1	0.92	10.1		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	1.8	0.64	B	mg/Kg	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB08-00**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**92**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0744-004**	Sampling Date/Time:	**03/20/2004 8:08**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results	Units
7439-97-6	MERCURY	SW846 7470A	1	0.099	0.01 B	mg/Kg
7440-22-4	SILVER	SW846 6010B	1	2.2	0.17 U	mg/Kg
7440-38-2	ARSENIC	SW846 6010B	1	1.2	1.1 B	mg/Kg
7440-39-3	BARIUM	SW846 6010B	1	0.72	22.1	mg/Kg
7440-43-9	CADMIUM	SW846 6010B	1	1.4	1.3 B	mg/Kg
7440-47-3	CHROMIUM	SW846 6010B	1	2.2	10.7	mg/Kg
7439-92-1	LEAD	SW846 6010B	1	0.72	2.2	mg/Kg
7782-49-2	SELENIUM	SW846 6010B	1	1.4	0.34 U	mg/Kg

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB08-04**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**73**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0744-005**	Sampling Date/Time:	**03/20/2004 8:15**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.14	0.03	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	2.7	0.21	U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	1.4	4.5		mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	0.89	11.5		mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	1.8	1.8	U	mg/Kg	*
7440-47-3	CHROMIUM	SW846 6010B	1	2.7	15.5		mg/Kg	
7439-92-1	LEAD	SW846 6010B	1	0.89	7.8		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	1.8	0.48	B	mg/Kg	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB09-00**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**85**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0756-001**	Sampling Date/Time:	**03/22/2004 16:13**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.11	0.03	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	1.9	0.22	U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	1.9	2.6		mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	38	20.3	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.96	0.55	B	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	1.9	10.3		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	0.96	0.69	B	mg/Kg	
7439-92-1	LEAD	SW846 6010B	1	0.58	21.7	J	mg/Kg	*

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB09-02**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**84**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0756-002**	Sampling Date/Time:	**03/22/2004 16:15**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7440-22-4	SILVER	SW846 6010B	1	2.1	0.24	U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	2.1	0.44	U	mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	41	6.2	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	1	0.05	U	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	2.1	7		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	1	0.48	U	mg/Kg	
7439-92-1	LEAD	SW846 6010B	1	0.62	3.8	J	mg/Kg	*
7439-97-6	MERCURY	SW846 7470A	1	0.091	0.01	U	mg/Kg	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB10-00**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**82**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0770-001**	Sampling Date/Time:	**03/23/2004 7:32**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.1	0.02	B	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	1.7	3.7		mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.87	0.87	U	mg/Kg	*
7440-39-3	BARIUM	SW846 6010B	1	35	11.7	B	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	1.7	0.82	B	mg/Kg	
7440-22-4	SILVER	SW846 6010B	1	1.7	0.2	U	mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	0.87	0.4	U	mg/Kg	
7439-92-1	LEAD	SW846 6010B	1	0.52	8.4	J	mg/Kg	*

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB10-03**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**71**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0770-002**	Sampling Date/Time:	**03/23/2004 7:40**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.13	0.06	B	mg/Kg	
7439-92-1	LEAD	SW846 6010B	1	0.69	14.4	J	mg/Kg	*
7440-22-4	SILVER	SW846 6010B	1	2.3	0.27	U	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	1.2	0.06	U	mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	46	21.7	B	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	2.3	29.8		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	1.2	0.53	U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	2.3	5		mg/Kg	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB11-01**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**86**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0770-003**	Sampling Date/Time:	**03/23/2004 17:25**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-92-1	LEAD	SW846 6010B	1	0.6	13.7	J	mg/Kg	*
7440-22-4	SILVER	SW846 6010B	1	2	0.23	U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	2	2	B	mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	40	59.8		mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.99	0.99	U	mg/Kg	*
7440-47-3	CHROMIUM	SW846 6010B	1	2	6.2		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	0.99	1.1		mg/Kg	
7439-97-6	MERCURY	SW846 7470A	1	0.11	0.05	B	mg/Kg	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB11-03**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**77**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0770-004**	Sampling Date/Time:	**03/23/2004 17:35**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-92-1	LEAD	SW846 6010B	1	0.65	5.3	J	mg/Kg	*
7440-22-4	SILVER	SW846 6010B	1	2.2	0.25	U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	2.2	1.4	B	mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	41	9.1	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	1.1	0.05	U	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	2.2	3		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	1.1	0.68	B	mg/Kg	
7439-97-6	MERCURY	SW846 7470A	1	0.13	0.04	B	mg/Kg	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB12-01**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**87**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0770-005**	Sampling Date/Time:	**03/23/2004 16:45**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-92-1	LEAD	SW846 6010B	1	0.57	3.5	J	mg/Kg	*
7440-22-4	SILVER	SW846 6010B	1	1.9	0.22	U	mg/Kg	
7440-38-2	ARSENIC	SW846 6010B	1	1.9	1.9	B	mg/Kg	
7440-39-3	BARIUM	SW846 6010B	1	38	9.2	B	mg/Kg	
7440-43-9	CADMIUM	SW846 6010B	1	0.95	0.05	U	mg/Kg	
7440-47-3	CHROMIUM	SW846 6010B	1	1.9	6.4		mg/Kg	
7782-49-2	SELENIUM	SW846 6010B	1	0.95	0.67	B	mg/Kg	
7439-97-6	MERCURY	SW846 7470A	1	0.1	0.03	B	mg/Kg	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-SB12-04**	Matrix:	**Soil**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**77**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0770-006**	Sampling Date/Time:	**03/23/2004 16:50**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units
7439-92-1	LEAD	SW846 6010B	1	0.53	15.3		mg/Kg
7440-22-4	SILVER	SW846 6010B	1	1.8	0.21	U	mg/Kg
7440-38-2	ARSENIC	SW846 6010B	1	1.8	10.6		mg/Kg
7440-39-3	BARIUM	SW846 6010B	1	36	19.4	B	mg/Kg
7440-43-9	CADMIUM	SW846 6010B	1	0.89	0.62	B	mg/Kg
7440-47-3	CHROMIUM	SW846 6010B	1	1.8	21.2		mg/Kg
7782-49-2	SELENIUM	SW846 6010B	1	0.89	1		mg/Kg
7439-97-6	MERCURY	SW846 7470A	1	0.13	0.06	B	mg/Kg

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-MW01**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**100**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0894-010**	Sampling Date/Time:	**04/03/2004 16:05**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7440-22-4	SILVER	SW846 6010B	1	10	0.7	U	µg/L	
7440-43-9	CADMIUM	SW846 6010B	1	5	0.3	U	µg/L	
7440-38-2	ARSENIC	SW846 6010B	1	10	3.1	B	µg/L	
7440-39-3	BARIUM	SW846 6010B	1	200	26	B	µg/L	
7439-92-1	LEAD	SW846 6010B	1	3	1.7	U	µg/L	
7440-47-3	CHROMIUM	SW846 6010B	1	10	10	U	µg/L	*
7439-97-6	MERCURY	SW846 7470A	1	0.2	0.01	U	µg/L	
7782-49-2	SELENIUM	SW846 6010B	1	5	3.71	U	µg/L	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-MW02**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**100**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0894-011**	Sampling Date/Time:	**04/04/2004 10:50**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results	Units
7440-47-3	CHROMIUM	SW846 6010B	1	10	0.8 U	µg/L
7439-92-1	LEAD	SW846 6010B	1	3	1.7 U	µg/L
7440-43-9	CADMIUM	SW846 6010B	1	5	0.3 U	µg/L
7440-38-2	ARSENIC	SW846 6010B	1	10	3.03 U	µg/L
7440-39-3	BARIUM	SW846 6010B	1	200	7.1 B	µg/L
7440-22-4	SILVER	SW846 6010B	1	10	0.7 U	µg/L
7439-97-6	MERCURY	SW846 7470A	1	0.2	0.01 U	µg/L
7782-49-2	SELENIUM	SW846 6010B	1	5	3.71 U	µg/L

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

Client Sample ID:	**SWMU318-MW03**	Matrix:	**Water**	Lab ID:	**KASW**
Sample Type:	**Site Sample (total)**	% Solids:	**100**	SDG ID:	**2004-B**
Lab Sample ID:	**WU0894-013**	Sampling Date/Time:	**04/04/2004 12:30**	SDG Page:	**0**

CAS Numbe	Analyte Name	Methoc	D/F	RL	Validated Results		Units	
7439-97-6	MERCURY	SW846 7470A	1	0.2	0.01	U	µg/L	
7440-22-4	SILVER	SW846 6010B	1	10	0.7	U	µg/L	
7782-49-2	SELENIUM	SW846 6010B	1	5	3.71	U	µg/L	
7440-38-2	ARSENIC	SW846 6010B	1	10	3.03	U	µg/L	
7440-43-9	CADMIUM	SW846 6010B	1	5	0.3	U	µg/L	
7440-47-3	CHROMIUM	SW846 6010B	1	10	10	U	µg/L	*
7439-92-1	LEAD	SW846 6010B	1	3	1.7	U	µg/L	
7440-39-3	BARIUM	SW846 6010B	1	200	25.1	B	µg/L	

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - (Lab qualifier) Analyte detected between the instrument detection limit (IDL) and the RL

***** - Modification by data validation

CONVENTIONALS

Marine Corp Base Camp Lejeune
AS Database
Site: SWMU 318

DATA VALIDATION REPORT

SDG 2004-B

Prepared for:

CH2M HILL, Inc
Herndon, VA

Integrate Project Number: 11318

May 2004

Integrate Preliminary Data Qualification Reporting Method

The purpose of this section is to give the data user an understanding of the ideas and concepts associated with data qualification in general and with the Integrate, Inc. (Integrate) method of reporting validated data.

Parameter Level Qualification Issues

Integrate has developed a method for reporting validated data which utilizes a presentation of laboratory data issues and qualification issues. This technique is based on the concept that issues encountered in the qualification of laboratory data affect individual parameters of a sample. For instance, determining that a detected parameter in a sample was the result of laboratory contamination will cause only that parameter to be qualified.

Integrate Codes: Standardizing the Description of Analytical Defects

Integrate has standardized the data qualification process by developing a database of codes employed by our analysts to describe the various analytical defects that may occur with an analysis. Each code is associated with written text describing the problem and the qualification that may be applied. For instance, the code that would be applied to a parameter that was determined to be a result of laboratory contamination would be BC (Blank Contamination). A complete listing of the parameter qualification parameters and their respective codes are presented below in *Parameter Qualification Codes*.

Parameter Qualification Codes

- CO Comment
- HT Holding Time
- BC Blank Contamination
- CQ Compound Quantitation
- IC Initial Calibration
- CC Continuing Calibration
- MS Matrix Spike Effects

Conventional Section Reporting Format

The Conventional Section of this data qualification report is divided into 1) a text-formatted report which describes the contents of the laboratory data package and 2) a number of tabular reports which allow the data user to readily obtain information about the results of the data qualification. Below is a description of the type of information contained in these tabular reports.

1) *Narrative of the Sample Delivery Group (SDG):* This section provides general information that pertains to the data package, such as the date of receipt, the number and type of samples, the laboratory performing the analysis, the instrumentation utilized to perform the analysis, the method of analysis, and the number and type of quality control parameters reported by the laboratory. Additionally, any other pertinent issues dealing with the laboratory or the data package may be noted in this section.

2) ***Table C 1*** *Summary of Conventional Data Qualification Issues*: This table represents a bulleted summary of all conventional samples that were validated for parameter level defects and provides a quick view of any issues that were associated with this sample delivery group. A bullet represents the assignment of a comment and/or qualifier by the data validator for a specific sample. The nature of a qualification can be found in ***Table C 2*** *Conventional Parameter Qualification Summary*.

3) ***Table C 2*** *Conventional Parameter Qualification Summary*: This tabular report displays all of the parameter-level data qualification issues checked (*Parameter Qualification Codes*). The table indicates the client sample name, the parameter that has been qualified, the qualification code, the lab result and its qualifier and units, the validated result and the qualification qualifier and units. Explanations of the actions taken by the validator are explained in ***Table C 3*** *Conventional Parameter Qualification Comments.*

4) ***Table C 3*** *Conventional Parameter Qualification Comments:* This report contains an explanation of each problem and any qualification which was documented in ***Table C 2*** *Conventional Parameter Qualification Summary*.

5) ***Table C 4*** *Qualified Conventional Results*: This report displays all the analytical and validated information in a one-sample per-page view. It includes the conventional parameter list, analytical extraction level, dilution factor, method quantitation limits per parameter, the results for each parameter and the units of measure for each parameter.

Narrative of Sample Delivery Group (SDG): 2004-A

On May 26, 2004 Integrate, Inc. received one data package containing the results for thirty site samples which were analyzed by Katahdin Analytical Services, Inc for Total Moisture. The sample was analyzed according to method CLP SOW 788. The following quality control parameters were reported in the data package:

Laboratory QC

- 6 method blank(s)
- 7 laboratory control sample(s)
- 7 matrix duplicate sample(s)

Lab: **KASW / KASW**

SDG ID: **2004-B**

	Parameter Qualification						
Client Sample	CO	HT	IC	CC	BC	MS	CQ
SWMU318-SB01-00							
SWMU318-SB01-04							
SWMU318-SB02-00							
SWMU318-SB02-01							
SWMU318-SB02-01D							
SWMU318-SB02-04							
SWMU318-SB03-00							
SWMU318-SB03-01							
SWMU318-SB04-00							
SWMU318-SB04-02							
SWMU318-SB04-04							
SWMU318-SB05-02							
SWMU318-SB05-02D							
SWMU318-SB05-03							
SWMU318-SB06-00							
SWMU318-SB06-01							
SWMU318-SB06-01D							
SWMU318-SB06-02							
SWMU318-SB07-00							
SWMU318-SB07-02							
SWMU318-SB08-00							
SWMU318-SB08-04							
SWMU318-SB09-00							
SWMU318-SB09-02							
SWMU318-SB10-00							
SWMU318-SB10-03							
SWMU318-SB11-01							
SWMU318-SB11-03							
SWMU318-SB12-01							
SWMU318-SB12-04							

All samples were validated. A bullet (•) denotes parameter qualification.

Parameter Qualification Codes:

CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
BC - Blank contamination
MS - Matrix spike effects
CQ - Compound/parameter quantitation

Lab: **KASW / KASW**

SDG ID: **2004-B**

Client Sample	Parameter Name	CO	HT	IC	CC	BC	MS	CQ	Lab Result	Units	Verified Result	Units

No conventional samples received parameter qualifiers in this sample delivery group.

Lab: **KASW / KASW**

SDG ID: **2004-B**

No conventional samples received parameter qualifiers in this sample delivery group.

Qualification Categories:

CO - Comment
HT - Holding time
IC - Initial calibration
CC - Continuing calibration
MS - Matrix spike effects
CQ - Compound/parameter quantitation
BC - Blank contamination

Client Sample ID: **SWMU318-SB01-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-1** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 14:01	CLP/CIP SOW	1	-	85	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB06-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-10** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 16:00	CLP/CIP SOW	1	-	82	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB06-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-13** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 16:10	CLP/CIP SOW	1	-	80	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB06-01D** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-14** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 16:10	CLP/CIP SOW	1	-	80	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB06-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-15** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 16:25	CLP/CIP SOW	1	-	77	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB02-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-16** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 15:22	CLP/CIP SOW	1	-	76	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB01-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-2** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 14:10	CLP/CIP SOW	1	-	74	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB02-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-3** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 14:45	CLP/CIP SOW	1	-	86	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB02-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-4** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 14:50	CLP/CIP SOW	1	-	90	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB02-01D** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-5** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 14:50	CLP/CIP SOW	1	-	85	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB03-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-6** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 15:51	CLP/CIP SOW	1	-	86	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB04-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-7** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 15:03	CLP/CIP SOW	1	-	83	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB04-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-8** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 15:10	CLP/CIP SOW	1	-	67	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB04-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0691-9** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 15:15	CLP/CIP SOW	1	-	80	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB05-02D** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0732-1** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 16:50	CLP/CIP SOW	1	-	82	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB05-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0732-2** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 16:50	CLP/CIP SOW	1	-	77	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB05-03** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0732-3** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/16/2004 17:18	CLP/CIP SOW	1	-	82	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB03-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0744-1** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/17/2004 13:38	CLP/CIP SOW	1	-	82	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB07-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0744-2** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/20/2004 8:39	CLP/CIP SOW	1	-	83	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB07-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0744-3** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/20/2004 8:41	CLP/CIP SOW	1	-	78	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB08-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0744-4** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/20/2004 8:08	CLP/CIP SOW	1	-	92	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB08-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0744-5** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/20/2004 8:15	CLP/CIP SOW	1	-	73	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB09-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0756-1** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/22/2004 16:13	CLP/CIP SOW	1	-	85	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit
B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)
***** - Modification by data validation

Client Sample ID: **SWMU318-SB09-02** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0756-2** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/22/2004 16:15	CLP/CIP SOW	1	-	84	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB10-00** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0770-1** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/23/2004 7:32	CLP/CIP SOW	1	-	82	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB10-03** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0770-2** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/23/2004 7:40	CLP/CIP SOW	1	-	71	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB11-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0770-3** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/23/2004 17:25	CLP/CIP SOW	1	-	86	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB11-03** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0770-4** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/23/2004 17:35	CLP/CIP SOW	1	-	77	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB12-01** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0770-5** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/23/2004 16:45	CLP/CIP SOW	1	-	87	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

Client Sample ID: **SWMU318-SB12-04** Matrix: **Soil** Lab ID: **KASW**
Sample Type: **Site Sample** SDG ID: **2004-B**
Lab Sample ID: **WU0770-6** SDG Page: **0**

CAS Numbe	Analyte Name	Sampling D/T	Methoc	D/F	RL	Validated Results	Units
000000-02-9	TOTAL SOLIDS	03/23/2004 16:50	CLP/CIP SOW	1	-	77	%

U - Non-detected
J - Estimated
R - Unusable
RL - Reporting limit

B - Analyte detected between the method detection limit (MDL) and the reporting limit (RL)

***** - Modification by data validation

APPENDIX G

Risk Assessment Data Sets

APPENDIX G

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 303									
SAMPLE ID	SWMU303-IS01-00	SWMU303-IS02-00	SWMU303-IS03-00	SWMU303-IS04-00	SWMU303-IS04-00	SWMU303-SB01-00	SWMU303-SB02-00	SWMU303-TW01-00	SWMU303-TW02-00	SWMU303-TW03-00
SAMPLE DATE	09-09-1997	09-09-1997	09-09-1997	09-09-1997	03-19-2002	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002
SAMPLE DEPTH (ft)	0'-2'	0'-2'	0'-2'	0'-2'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'
Volatile Organic Compounds (ug/kg)										
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane (TCA)	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,1-Dichloroethane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,1-Dichloroethene	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
1,2-Dibromoethane (EDB)	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
1,2-Dichlorobenzene (o-)	1.1 U	1.1 U	1.1 U	1.2 U	6 U	NA	NA	NA	NA	NA
1,2-Dichloroethane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,2-Dichloroethene (cis)	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	28 U	5.3 U	27 U	730 U	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
1,2-Dichloropropane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene (m-)	1.1 U	1.1 U	1.1 U	1.2 U	6 U	NA	NA	NA	NA	NA
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropene (cis)	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,3-Dichloropropene (trans)	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,4-Dichlorobenzene (p-)	1.6	1.8	1.1 U	3.4	6 U	NA	NA	NA	NA	NA
2,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	110 U	21 U	110 U	2900 U	7 J	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone (MBK)	110 U	21 U	110 U	2900 U	14 U	NA	NA	NA	NA	NA
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	110 U	21 U	110 U	2900 U	14 U	NA	NA	NA	NA	NA
Acetone	1900	30	510	14000	27 J	NA	NA	NA	NA	NA
Benzene	1.1 U	1.1 U	1.1 U	1.2 U	6 U	NA	NA	NA	NA	NA
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Bromoform	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Bromomethane	56 U	11 U	54 U	1500 U	6 U	NA	NA	NA	NA	NA
Butylbenzene, sec-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzene, tert-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	28 U	5.3 U	27 U	730 U	2 J	NA	NA	NA	NA	NA
Carbon Tetrachloride	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 303									
SAMPLE ID	SWMU303-IS01-00	SWMU303-IS02-00	SWMU303-IS03-00	SWMU303-IS04-00	SWMU303-IS04-00	SWMU303-SB01-00	SWMU303-SB02-00	SWMU303-TW01-00	SWMU303-TW02-00	SWMU303-TW03-00
SAMPLE DATE	09-09-1997	09-09-1997	09-09-1997	09-09-1997	03-19-2002	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002
SAMPLE DEPTH (ft)	0'-2'	0'-2'	0'-2'	0'-2'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'
Volatile Organic Compounds (ug/kg) (Cont)										
Chlorobenzene	1.1 U	1.1 U	1.1 U	1.2 U	6 U	NA	NA	NA	NA	NA
Chloroethane	56 U	11 U	54 U	1500 U	44 J	NA	NA	NA	NA	NA
Chloroform	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Chloromethane	56 U	11 U	54 U	1500 U	6 U	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
Dibromochloromethane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	6 UJ	NA	NA	NA	NA	NA
Ethylbenzene	1.1 U	1.1 U	1.1 U	1.2 U	6 U	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
Methyl Acetate	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
Methyl Cyclohexane	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
Methylene Chloride	8	5.3 U	7.1	730 U	2 J	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene (Ethenylbenzene)	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Toluene	1.1 U	1.1 U	1.1 U	1.2 U	6 U	NA	NA	NA	NA	NA
Trichloroethene (TCE)	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
Vinyl Chloride	56 U	11 U	54 U	1500 U	6 U	NA	NA	NA	NA	NA
Xylene, m-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene, o-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	1.1 U	1.1 U	1.1 U	1.2 U	17 UJ	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (ug/kg)										
1,1'-Biphenyl	NA	NA	NA	NA	NA	380 U	360 U	370 U	390 U	400 U
2,2'-Oxybis[1-chloropropane]	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2,4,5-Trichlorophenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2,4,6-Trichlorophenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2,4-Dichlorophenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2,4-Dimethylphenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2,4-Dinitrophenol	1800 U	1700 U	1700 U	1900 U	NA	2000 U	1900 U	1900 U	2000 UJ	2000 U
2,4-Dinitrotoluene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2,6-Dinitrotoluene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2-Chloronaphthalene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2-Chlorophenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2-Methylnaphthalene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2-Methylphenol (o-Cresol)	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2-Nitroaniline	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U
2-Nitrophenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
3,3'-Dichlorobenzidine	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 303									
SAMPLE ID	SWMU303-IS01-00	SWMU303-IS02-00	SWMU303-IS03-00	SWMU303-IS04-00	SWMU303-IS04-00	SWMU303-SB01-00	SWMU303-SB02-00	SWMU303-TW01-00	SWMU303-TW02-00	SWMU303-TW03-00
SAMPLE DATE	09-09-1997	09-09-1997	09-09-1997	09-09-1997	03-19-2002	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002
SAMPLE DEPTH (ft)	0'-2'	0'-2'	0'-2'	0'-2'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'
Semivolatile Organic Compounds (ug/kg) (Cont										
3-Nitroaniline	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U
4,6-Dinitro-2-methylpheno	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U
4-Bromophenyl-phenylether	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 UJ	390 U	400 UJ
4-Chloro-3-methylphenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
4-Chloroaniline	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
4-Chlorophenyl-phenylether	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
4-Methylphenol (p-Cresol)	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
4-Nitroaniline	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U
4-Nitrophenol	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U
Acenaphthene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Acenaphthylene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Acetophenone	NA	NA	NA	NA	NA	380 U	360 U	370 U	390 U	400 U
Anthracene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Atrazine	NA	NA	NA	NA	NA	380 U	360 U	370 U	390 U	400 U
Benzaldehyde	NA	NA	NA	NA	NA	380 U	360 U	370 U	390 U	400 U
Benzo(a)anthracene	370 U	52 J	360 U	1000	NA	380 U	360 U	370 U	390 U	400 U
Benzo(a)pyrene	370 U	59 J	59 J	650	NA	380 U	360 U	370 U	390 U	400 U
Benzo(b)fluoranthene	370 U	98 J	71 J	1100	NA	380 U	360 U	34 J	390 U	400 U
Benzo(g,h,i)perylene	370 U	350 U	360 U	200 J	NA	380 U	360 U	370 U	390 U	400 U
Benzo(k)fluoranthene	370 U	48 J	37 J	350 J	NA	380 U	360 U	370 U	390 U	400 U
Bis(2-chloroethoxy)methane	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Bis(2-chloroethyl)ether	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Bis(2-ethylhexyl) Phthalate (BEHP	130 J	75 J	55 J	290 J	NA	110 J	46 J	96 J	390 U	400 U
Butyl Benzyl Phthalate	370 U	350 U	360 U	86 J	NA	380 U	360 U	370 U	390 U	400 U
Caprolactam	NA	NA	NA	NA	NA	380 UJ	360 U	370 U	390 U	400 U
Carbazole	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Chrysene	370 U	82 J	360 U	830	NA	380 U	360 U	370 U	390 U	400 U
Dibenz(a,h)anthracene	370 U	350 U	360 U	42 J	NA	380 U	360 U	370 U	390 U	400 U
Dibenzofuran	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Diethyl Phthalate (DEP)	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Dimethyl Phthalate	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Di-n-butyl Phthalate (DBP)	370 U	350 U	360 U	1800	NA	380 U	360 U	31 J	390 U	400 U
Di-n-octyl Phthalate	370 U	350 U	360 U	390 U	NA	380 U	30 J	370 U	390 U	400 U
Fluoranthene	370 U	350 U	360 U	1400	NA	380 U	360 U	21 J	390 U	400 U
Fluorene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Hexachlorobenzene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 UJ	390 U	400 UJ
Hexachlorobutadiene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Hexachlorocyclopentadiene	1800 U	1700 U	1700 U	1900 U	NA	380 UJ	360 U	370 U	390 UJ	400 U
Hexachloroethane	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Indeno(1,2,3-cd)pyrene	370 U	350 U	360 U	250 J	NA	380 U	360 U	36 J	390 U	400 U
Isophorone	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Naphthalene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	120 J
Nitrobenzene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 303									
SAMPLE ID	SWMU303-IS01-00	SWMU303-IS02-00	SWMU303-IS03-00	SWMU303-IS04-00	SWMU303-IS04-00	SWMU303-SB01-00	SWMU303-SB02-00	SWMU303-TW01-00	SWMU303-TW02-00	SWMU303-TW03-00
SAMPLE DATE	09-09-1997	09-09-1997	09-09-1997	09-09-1997	03-19-2002	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002
SAMPLE DEPTH (ft)	0'-2'	0'-2'	0'-2'	0'-2'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'
Semivolatile Organic Compounds (ug/kg) (Cont										
n-Nitrosodi-n-propylamine	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
n-Nitrosodiphenylamine	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Pentachlorophenol	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U
Phenanthrene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Phenol	370 U	350 U	360 U	160 J	NA	380 U	360 U	370 U	390 U	400 U
Pyrene	370 U	88 J	360 U	1300	NA	380 U	360 U	370 U	390 U	400 U
Metals (mg/kg)										
Arsenic	1.1 U	1.9	1.3	1.2 U	NA	0.48 J	1.1	6.1	1.1 J	0.28 U
Barium	22.6 U	40.3	107	50.9	NA	13.4	47.5	22	15	9.9
Cadmium	0.69	0.53 U	1.1	0.59 U	NA	0.087 J	0.081 J	0.23 U	0.072 U	0.035 U
Chromium	10.3	10.1	16.9	7.9	NA	7.2	6.9	14.4 J	8 J	4.5 J
Lead	12.3	10.1	13.6	16.3	NA	6.3	3.4	7.4	7.1	3.2
Mercury	0.037 U	0.035 U	0.036 U	0.039 U	NA	0.044	0.018 J	0.025 U	0.044 U	0.02 U
Selenium	0.56 U	0.53 U	0.54 U	0.59 U	NA	0.58	0.5 U	0.82	0.76	0.54 U
Silver	1.1 U	1.1 U	1.1 U	1.2 U	NA	0.1 U	0.098 U	0.1 U	0.11 U	0.11 U

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318								
SAMPLE ID	SWMU318-IS01-00	SWMU318-IS02-00	SWMU318-IS03-00	SWMU318-SS01-00	SWMU318-SS02-00	SWMU318-SS03-00	SWMU318-TW01-00	SWMU318-TW02-00	SWMU318-TW03-00
SAMPLE DATE	09-14-1997	09-14-1997	09-14-1997	09-17-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-19-2002
SAMPLE DEPTH (ft)	0' - 2'	0' - 2'	0' - 2'	0' - 2'	0' - 1'	0' - 1'	0' - 1'	0' - 1'	0' - 1'
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane (TCA)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,1,2-Trichloroethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,1-Dichloroethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,1-Dichloroethene	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	11 UJ	7 UJ	5 UJ	7 U	5 U
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	NA	NA	NA	NA	11 UJ	7 UJ	5 UJ	7 U	5 U
1,2-Dibromoethane (EDB)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,2-Dichlorobenzene (o-)	1.2 U	1.4 U	1.2 U	9200	11 UJ	7 UJ	5 UJ	7 U	5 U
1,2-Dichloroethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,2-Dichloroethene (cis)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,2-Dichloropropane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene (m-)	1.2 U	1.4 U	1.2 U	670 U	11 UJ	7 UJ	5 UJ	7 U	5 U
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropene (cis)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,3-Dichloropropene (trans)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,4-Dichlorobenzene (p-)	1.8	1.4 U	1.2 U	4300	11 UJ	7 UJ	5 UJ	7 U	5 U
2,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	NA	NA	NA	NA	11 J	16 J	20	9 J	8 J
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone (MBK)	NA	NA	NA	NA	28 U	16 U	3 J	17 U	13 U
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	28 U	16 U	1 J	17 U	13 U
Acetone	NA	NA	NA	NA	32	40 J	78	37	38 J
Benzene	1.2 U	1.4 U	1.2 U	670 U	2 J	7 U	2 J	7 U	5 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Bromoform	NA	NA	NA	NA	11 U	7 U	5 U	13	5 U
Bromomethane	NA	NA	NA	NA	11 U	7 U	5 UJ	7 UJ	5 U
Butylbenzene, sec-	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzene, tert-	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	NA	NA	NA	NA	11 U	3 J	5 U	7 U	5 U
Carbon Tetrachloride	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318								
SAMPLE ID	SWMU318-IS01-00	SWMU318-IS02-00	SWMU318-IS03-00	SWMU318-SS01-00	SWMU318-SS02-00	SWMU318-SS03-00	SWMU318-TW01-00	SWMU318-TW02-00	SWMU318-TW03-00
SAMPLE DATE	09-14-1997	09-14-1997	09-14-1997	09-17-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-19-2002
SAMPLE DEPTH (ft)	0' - 2'	0' - 2'	0' - 2'	0' - 2'	0' - 1'	0' - 1'	0' - 1'	0' - 1'	0' - 1'
Volatile Organic Compounds (ug/kg) (Cont									
Chlorobenzene	1.2 U	1.4 U	1.2 U	670 U	11 U	7 U	5 U	7 U	5 U
Chloroethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 UJ
Chloroform	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Chloromethane	NA	NA	NA	NA	11 UJ	7 UJ	5 U	7 U	5 U
Cyclohexane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Dibromochloromethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	11 UJ	7 UJ	5 U	7 U	5 UJ
Ethylbenzene	1.2 U	1.4 U	1.2 U	670 U	11 U	7 U	5 U	7 U	5 U
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Methyl Acetate	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Methyl Cyclohexane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Methylene Chloride	NA	NA	NA	NA	4 J	2 J	11	18	1 J
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene (Ethenylbenzene)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Tetrachloroethene (PCE)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Toluene	1.2 U	1.4 U	1.2 U	670 U	11 U	7 U	5 U	7 U	5 U
Trichloroethene (TCE)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Trichlorofluoromethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Vinyl Chloride	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Xylene, m-	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene, o-	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	1.2 U	1.4 U	1.2 U	670 U	34 UJ	20 UJ	16 UJ	20 UJ	15 UJ
Semivolatile Organic Compounds (ug/kg									
1,1'-Biphenyl	NA	NA	NA	NA	650 U	460 U	390 U	390 U	370 U
2,2'-Oxybis[1-chloropropane]	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2,4,5-Trichlorophenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2,4,6-Trichlorophenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2,4-Dichlorophenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2,4-Dimethylphenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2,4-Dinitrophenol	2000 U	2300 U	2000 U	86000 U	3300 U	2400 U	2000 U	2000 U	1900 U
2,4-Dinitrotoluene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2,6-Dinitrotoluene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2-Chloronaphthalene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2-Chlorophenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2-Methylnaphthalene	410 U	470 U	410 U	2600 J	650 UJ	120 J	390 UJ	390 UJ	370 UJ
2-Methylphenol (o-Cresol)	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2-Nitroaniline	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U
2-Nitrophenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
3,3'-Dichlorobenzidine	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318								
SAMPLE ID	SWMU318-IS01-00	SWMU318-IS02-00	SWMU318-IS03-00	SWMU318-SS01-00	SWMU318-SS02-00	SWMU318-SS03-00	SWMU318-TW01-00	SWMU318-TW02-00	SWMU318-TW03-00
SAMPLE DATE	09-14-1997	09-14-1997	09-14-1997	09-17-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-19-2002
SAMPLE DEPTH (ft)	0' - 2'	0' - 2'	0' - 2'	0' - 2'	0' - 1'	0' - 1'	0' - 1'	0' - 1'	0' - 1'
Semivolatile Organic Compounds (ug/kg) (Cont									
3-Nitroaniline	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U
4,6-Dinitro-2-methylpheno	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U
4-Bromophenyl-phenylethe	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
4-Chloro-3-methylphenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
4-Chloroaniline	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
4-Chlorophenyl-phenylethe	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
4-Methylphenol (p-Cresol)	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
4-Nitroaniline	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U
4-Nitrophenol	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U
Acenaphthene	410 U	470 U	410 U	18000 U	650 U	34 J	390 U	390 U	370 U
Acenaphthylene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Acetophenone	NA	NA	NA	NA	650 U	120 J	390 U	390 U	370 U
Anthracene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Atrazine	NA	NA	NA	NA	650 U	460 U	390 U	390 U	370 U
Benzaldehyde	NA	NA	NA	NA	650 U	460 U	390 U	33 J	370 U
Benzo(a)anthracene	56 J	470 U	410 U	4100 J	52 J	220 J	390 U	390 U	370 U
Benzo(a)pyrene	110 J	470 U	410 U	5000 J	82 J	190 J	390 U	390 U	370 U
Benzo(b)fluoranthene	110 J	470 U	410 U	5900 J	140 J	260 J	390 U	29 J	370 U
Benzo(g,h,i)perylene	99 J	470 U	410 U	5000 J	86 J	120 J	390 U	390 U	370 U
Benzo(k)fluoranthene	410 U	470 U	410 U	6900 J	130 J	300 J	390 U	390 U	370 U
Bis(2-chloroethoxy)methane	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Bis(2-chloroethyl)ether	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Bis(2-ethylhexyl) Phthalate (BEHP	230 J	1400 J	180 J	22000 J	300 J	1100 J	380 J	380 J	1100
Butyl Benzyl Phthalate	410 U	470 U	410 U	2000 J	86 J	65 J	390 U	390 U	370 U
Caprolactam	NA	NA	NA	NA	650 U	100 J	390 U	390 U	370 U
Carbazole	410 U	470 U	410 U	18000 U	650 U	44 J	390 U	390 U	370 U
Chrysene	69 J	470 U	410 U	6700 J	99 J	290 J	390 U	390 U	370 U
Dibenz(a,h)anthracene	45 J	470 U	410 U	2300 J	650 U	68 J	390 U	390 U	370 U
Dibenzofuran	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Diethyl Phthalate (DEP)	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Dimethyl Phthalate	410 U	470 U	410 U	18000 U	650 U	48 J	390 U	390 U	370 U
Di-n-butyl Phthalate (DBP)	410 U	470 U	410 U	2400 J	650 U	460 U	390 U	390 U	370 U
Di-n-octyl Phthalate	410 U	470 U	410 U	18000 U	170 J	55 J	390 U	390 U	37 J
Fluoranthene	69 J	470 U	410 U	7700 J	120 J	440 J	390 U	22 J	370 U
Fluorene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Hexachlorobenzene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Hexachlorobutadiene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Hexachlorocyclopentadiene	2000 U	2300 U	2000 U	86000 U	650 UJ	460 UJ	390 UJ	390 UJ	370 UJ
Hexachloroethane	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Indeno(1,2,3-cd)pyrene	91 J	470 U	410 U	4700 J	160 J	240 J	390 U	47 J	370 U
Isophorone	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Naphthalene	410 U	470 U	410 U	17000 J	650 U	430 J	390 U	390 U	370 U
Nitrobenzene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318								
SAMPLE ID	SWMU318-IS01-00	SWMU318-IS02-00	SWMU318-IS03-00	SWMU318-SS01-00	SWMU318-SS02-00	SWMU318-SS03-00	SWMU318-TW01-00	SWMU318-TW02-00	SWMU318-TW03-00
SAMPLE DATE	09-14-1997	09-14-1997	09-14-1997	09-17-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-19-2002
SAMPLE DEPTH (ft)	0' - 2'	0' - 2'	0' - 2'	0' - 2'	0' - 1'	0' - 1'	0' - 1'	0' - 1'	0' - 1'
Semivolatile Organic Compounds (ug/kg) (Cont									
n-Nitrosodi-n-propylamine	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
n-Nitrosodiphenylamine	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Pentachlorophenol	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U
Phenanthrene	410 U	470 U	410 U	18000 U	650 U	110 J	390 U	390 U	370 U
Phenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Pyrene	71 J	470 U	410 U	7800 J	90 J	370 J	390 U	390 U	370 U
Metals (mg/kg)									
Arsenic	3.1	14.3	3.7	1.3 U	1.4 J	3.3	2	0.26 U	0.67 J
Barium	50.3	44	25 U	396	33.2	47.8 J	36.3	13.4	24.6
Cadmium	1.6	3	0.62 U	57.2	3.5	0.41 J	0.46 J	0.14 J	0.57
Chromium	24.6	48.2	18.2	91.1	20.5	24.9	20.2	6.7	9.2
Lead	30.7	45.8	21.9	110	45.4 J	20.8 J	66.1 J	11.2 J	16.7 J
Mercury	0.067	0.14	0.052	0.045	0.066	0.099	0.059	0.023 J	0.027 J
Selenium	0.81	0.85	0.62 U	0.67 U	1	1.3	0.56 J	0.5 U	0.58
Silver	1.2 U	1.4 U	1.2 U	7.2	0.16 U	0.12 U	0.1 U	0.098 U	0.1 U

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
SAMPLE ID	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB11-00	SWMU318-SB12-00	SWMU318-SB16-00	SWMU318-SB19-00	SWMU318-SB20-00
SAMPLE DATE	3/16/2004	3/16/2004	3/22/2004	3/23/2004	3/22/2004	3/22/2004	2/4/2005	2/4/2005	2/3/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	2.4183797 U
1,1,1-Trichloroethane (TCA)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
1,1,2,2-Tetrachloroethane	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	2.4038462 U	11 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	10 UJ	12 U	NA	NA	NA	11 U	NA	11 UJ
1,1,2-Trichloroethane	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
1,1-Dichloroethane	12 U	10 UJ	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
1,1-Dichloroethene	12 U	10 UJ	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
1,1-Dichloropropene	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	1.210347 U	1.2019231 U	1.2091898 U
1,2,3-Trichlorobenzene	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	1.931307 J	6.0096154 U	0.82 J
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	2.4206941 U	2.4038462 U	2.4183797 U
1,2,4-Trichlorobenzene	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	6.0096154 U	11 UJ
1,2,4-Trimethylbenzene	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	0.59 J
1,2-Dibromo-3-chloropropane (DBCP)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	6.0096154 U	11 UJ
1,2-Dibromoethane (EDB)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	2.4038462 U	11 UJ
1,2-Dichlorobenzene (o-)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	2.4038462 U	11 UJ
1,2-Dichloroethane	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
1,2-Dichloroethene (cis)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
1,2-Dichloroethene (total)	NA	10 U	12 U	NA	NA	NA	11 U	NA	11 UJ
1,2-Dichloroethene (trans)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
1,2-Dichloropropane	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
1,3,5-Trimethylbenzene	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	0.47 J
1,3-Dichlorobenzene (m-)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	2.4038462 U	11 UJ
1,3-Dichloropropane	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	1.210347 U	1.2019231 U	1.2091898 U
1,3-Dichloropropene (cis)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
1,3-Dichloropropene (trans)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
1,4-Dichlorobenzene (p-)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	2.4038462 U	11 UJ
2,2-Dichloropropane	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	1.210347 U	1.2019231 U	1.2091898 U
2-Butanone (MEK)	NA	10 UJ	12 U	NA	NA	NA	11 U	NA	11 UJ
2-Chlorotoluene	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	2.4183797 U
2-Hexanone (MBK)	NA	10 UJ	12 U	NA	NA	NA	11 U	NA	11 UJ
4-Chlorotoluene	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	2.4183797 U
4-Isopropyltoluene	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	2.4183797 U
4-Methyl-2-pentanone (MIBK)	NA	10 U	12 U	NA	NA	NA	11 U	NA	11 UJ
Acetone	NA	10 UJ	12 UJ	NA	NA	NA	11 U	NA	11 UJ
Benzene	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
Bromobenzene	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	2.4183797 U
Bromochloromethane	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	2.4183797 U
Bromodichloromethane	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	2.4038462 U	11 UJ
Bromoform	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	2.4038462 U	11 UJ
Bromomethane	12 U	10 U	12 U	11 U	11 U	12 U	11 U	6.0096154 U	11 UJ
Butylbenzene, sec-	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	2.4183797 U
Butylbenzene, tert-	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	2.4183797 U
Carbon Disulfide	NA	10 UJ	12 U	NA	NA	NA	11 U	NA	11 UJ
Carbon Tetrachloride	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
SAMPLE ID	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB11-00	SWMU318-SB12-00	SWMU318-SB16-00	SWMU318-SB19-00	SWMU318-SB20-00
SAMPLE DATE	3/16/2004	3/16/2004	3/22/2004	3/23/2004	3/22/2004	3/22/2004	2/4/2005	2/4/2005	2/3/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
Chloroethane	12 U	10 U	12 U	11 U	11 U	12 U	11 U	6.0096154 U	11 UJ
Chloroform	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
Chloromethane	12 U	10 U	12 U	11 U	11 U	12 U	11 U	6.0096154 U	11 UJ
Cyclohexane	NA	10 U	12 U	NA	NA	NA	11 U	NA	11 UJ
Dibromochloromethane	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	2.4038462 U	11 UJ
Dibromomethane	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	2.4183797 U
Dichlorodifluoromethane	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	6.0096154 U	11 UJ
Ethylbenzene	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
Hexachlorobutadiene	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	6.0517352 U	6.0096154 U	6.0459492 U
Isopropylbenzene (Cumene)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	2.4038462 U	11 UJ
Methyl Acetate	NA	10 UJ	12 U	NA	NA	NA	11 U	NA	11 UJ
Methyl Cyclohexane	NA	10 U	12 U	NA	NA	NA	11 U	NA	11 UJ
Methyl Tert-Butyl Ether (MTBE)	NA	10 U	12 U	NA	NA	NA	11 U	NA	11 UJ
Methylene Chloride	12 U	10 U	23 UJ	11 U	11 U	13	17 U	6.0096154 U	15 U
Naphthalene	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	6.0517352 U	6.0096154 U	1.1 J
n-Butylbenzene	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	2.4183797 U
n-Propylbenzene	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U	2.4206941 U	2.4038462 U	2.4183797 U
Styrene (Ethenylbenzene)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
Tetrachloroethene (PCE)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
Toluene	4 J	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
Trichloroethene (TCE)	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
Trichlorofluoromethane	NA	10 UJ	2 J	NA	NA	NA	11 U	6.0096154 U	11 UJ
Vinyl Chloride	12 U	10 U	12 U	11 U	11 U	12 U	11 U	2.4038462 U	11 UJ
Xylene, m-	2 J	10 U	12 U	4.7 J	5.7 U	6.2 U	11 U	2.4038462 U	11 UJ
Xylene, o-	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U	11 U	1.2019231 U	11 UJ
Xylenes, total	NA	10 U	12 U	NA	NA	NA	11 U	NA	11 UJ
Semivolatile Organic Compounds (ug/									
1,1'-Biphenyl	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
2,2'-Oxybis[1-chloropropane]	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
2,4,5-Trichlorophenol	NA	NA	980 U	1000 U	NA	NA	990 U	980 U	NA
2,4,6-Trichlorophenol	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
2,4-Dichlorophenol	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
2,4-Dimethylphenol	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
2,4-Dinitrophenol	NA	NA	980 U	1000 U	NA	NA	990 U	980 U	NA
2,4-Dinitrotoluene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
2,6-Dinitrotoluene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
2-Chloronaphthalene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
2-Chlorophenol	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
2-Methylnaphthalene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
2-Methylphenol (o-Cresol)	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
2-Nitroaniline	NA	NA	980 U	1000 U	NA	NA	990 U	980 U	NA
2-Nitrophenol	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
3,3'-Dichlorobenzidine	NA	NA	390 UJ	400 UJ	NA	NA	390 U	390 U	NA

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
SAMPLE ID	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB11-00	SWMU318-SB12-00	SWMU318-SB16-00	SWMU318-SB19-00	SWMU318-SB20-00
SAMPLE DATE	3/16/2004	3/16/2004	3/22/2004	3/23/2004	3/22/2004	3/22/2004	2/4/2005	2/4/2005	2/3/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug									
3-Nitroaniline	NA	NA	980 U	1000 U	NA	NA	990 U	980 U	NA
4,6-Dinitro-2-methylphenol	NA	NA	980 U	1000 U	NA	NA	990 U	980 U	NA
4-Bromophenyl-phenylether	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
4-Chloro-3-methylphenol	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
4-Chloroaniline	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
4-Chlorophenyl-phenylether	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
4-Methylphenol (p-Cresol)	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
4-Nitroaniline	NA	NA	980 UJ	1000 UJ	NA	NA	990 U	980 U	NA
4-Nitrophenol	NA	NA	980 U	1000 U	NA	NA	990 U	980 U	NA
Acenaphthene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Acenaphthylene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Acetophenone	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Anthracene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Atrazine	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Benzaldehyde	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Benzo(a)anthracene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Benzo(a)pyrene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Benzo(b)fluoranthene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Benzo(g,h,i)perylene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Benzo(k)fluoranthene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Bis(2-chloroethoxy)methane	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Bis(2-chloroethyl)ether	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Bis(2-ethylhexyl) Phthalate (BEHP	NA	NA	390 U	400 U	NA	NA	220 J	390 U	NA
Butyl Benzyl Phthalate	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Caprolactam	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Carbazole	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Chrysene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Dibenz(a,h)anthracene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Dibenzofuran	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Diethyl Phthalate (DEP)	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Dimethyl Phthalate	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Di-n-butyl Phthalate (DBP)	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Di-n-octyl Phthalate	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Fluoranthene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Fluorene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Hexachlorobenzene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Hexachlorobutadiene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Hexachlorocyclopentadiene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Hexachloroethane	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Indeno(1,2,3-cd)pyrene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Isophorone	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Naphthalene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Nitrobenzene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
SAMPLE ID	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB11-00	SWMU318-SB12-00	SWMU318-SB16-00	SWMU318-SB19-00	SWMU318-SB20-00
SAMPLE DATE	3/16/2004	3/16/2004	3/22/2004	3/23/2004	3/22/2004	3/22/2004	2/4/2005	2/4/2005	2/3/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug									
n-Nitrosodi-n-propylamine	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
n-Nitrosodiphenylamine	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Pentachlorophenol	NA	NA	980 U	1000 U	NA	NA	990 U	980 U	NA
Phenanthrene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Phenol	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Pyrene	NA	NA	390 U	400 U	NA	NA	390 U	390 U	NA
Metals (mg/kg)									
Arsenic	NA	NA	2.6	0.82 J	NA	NA	2 U	3.4 U	NA
Barium	NA	NA	20.3 J	11.7 J	NA	NA	23 J	17.3 J	NA
Cadmium	NA	NA	0.55 J	0.87 U	NA	NA	3.1	0.54 U	NA
Chromium	NA	NA	10.3	3.7	NA	NA	15.5	12.5	NA
Lead	NA	NA	21.7 J	8.4 J	NA	NA	32.5	29.2	NA
Mercury	NA	NA	0.03 J	0.02 J	NA	NA	0.07 U	0.05 U	NA
Selenium	NA	NA	0.69 J	0.4 U	NA	NA	0.66 U	1 U	NA
Silver	NA	NA	0.22 U	0.2 U	NA	NA	0.13 U	0.15 U	NA

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)						
SAMPLE ID	SWMU318-SB21-00	SWMU318-SB22-00	SWMU318-SB23-00	SWMU318-SB24-00	SWMU318-SB26-00	SWMU318-SB25-00	SWMU318-SB28-00
SAMPLE DATE	2/3/2005	2/7/2005	2/3/2005	2/7/2005	2/4/2005	2/8/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)							
1,1,1,2-Tetrachloroethane	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
1,1,1-Trichloroethane (TCA)	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
1,1-Dichloroethane	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
1,1-Dichloroethene	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
1,1-Dichloropropene	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	5.3648069 U	0.7 J	6.097561 U	5.8754407 U	1.3 J	6 U	6 U
1,2,3-Trichloropropane	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	5.3648069 U	0.53 J	6.097561 U	5.8754407 U	0.94 J	6 U	6 U
1,2,4-Trimethylbenzene	2.1459227 U	2 U	2.4390244 U	2.3501763 U	0.65 J	2 U	2 U
1,2-Dibromo-3-chloropropane (DBCP)	5.3648069 U	5 U	6.097561 U	5.8754407 U	6 U	6 U	6 U
1,2-Dibromoethane (EDB)	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
1,2-Dichloroethane	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
1,2-Dichloroethene (cis)	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
1,2-Dichloropropane	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
1,3-Dichloropropane	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
1,3-Dichloropropene (cis)	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
1,3-Dichloropropene (trans)	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
1,4-Dichlorobenzene (p-)	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
2,2-Dichloropropane	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
2-Butanone (MEK)	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
2-Hexanone (MBK)	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
4-Isopropyltoluene	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA
Benzene	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
Bromobenzene	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
Bromochloromethane	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
Bromodichloromethane	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
Bromoform	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
Bromomethane	5.3648069 U	5 U	6.097561 U	5.8754407 U	6 U	6 U	6 U
Butylbenzene, sec-	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
Butylbenzene, tert-	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)						
SAMPLE ID	SWMU318-SB21-00	SWMU318-SB22-00	SWMU318-SB23-00	SWMU318-SB24-00	SWMU318-SB26-00	SWMU318-SB25-00	SWMU318-SB28-00
SAMPLE DATE	2/3/2005	2/7/2005	2/3/2005	2/7/2005	2/4/2005	2/8/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)							
Chlorobenzene	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
Chloroethane	5.3648069 U	5 U	6.097561 U	5.8754407 U	6 U	6 U	6 U
Chloroform	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
Chloromethane	5.3648069 U	5 U	6.097561 U	5.8754407 U	6 U	6 U	6 U
Cyclohexane	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
Dibromomethane	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
Dichlorodifluoromethane	5.3648069 U	5 U	6.097561 U	5.8754407 U	6 U	6 U	6 U
Ethylbenzene	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
Hexachlorobutadiene	5.3648069 U	5 U	6.097561 U	5.8754407 U	6 U	6 U	6 U
Isopropylbenzene (Cumene)	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA
Methyl Cyclohexane	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	5.3648069 U	5 U	6.097561 U	5.8754407 U	6 U	6 U	6 U
Naphthalene	5.3648069 U	5 U	6.097561 U	5.8754407 U	1.5 J	6 U	6 U
n-Butylbenzene	2.1459227 U	2 U	2.4390244 U	2.3501763 U	0.66 J	2 U	2 U
n-Propylbenzene	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
Toluene	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
Trichloroethene (TCE)	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
Trichlorofluoromethane	5.3648069 U	5 U	6.097561 U	5.8754407 U	6 U	6 U	6 U
Vinyl Chloride	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
Xylene, m-	2.1459227 U	2 U	2.4390244 U	2.3501763 U	2 U	2 U	2 U
Xylene, o-	1.0729614 U	1 U	1.2195122 U	1.1750881 U	1 U	1 U	1 U
Xylenes, total	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (ug							
1,1'-Biphenyl	360 U	NA	400 U	390 U	NA	NA	NA
2,2'-Oxybis[1-chloropropane]	360 U	NA	400 U	390 U	NA	NA	NA
2,4,5-Trichlorophenol	890 U	NA	1000 U	980 U	NA	NA	NA
2,4,6-Trichlorophenol	360 U	NA	400 U	390 U	NA	NA	NA
2,4-Dichlorophenol	360 U	NA	400 U	390 U	NA	NA	NA
2,4-Dimethylphenol	360 U	NA	400 U	390 U	NA	NA	NA
2,4-Dinitrophenol	890 U	NA	1000 U	980 U	NA	NA	NA
2,4-Dinitrotoluene	360 U	NA	400 U	390 U	NA	NA	NA
2,6-Dinitrotoluene	360 U	NA	400 U	390 U	NA	NA	NA
2-Chloronaphthalene	360 U	NA	400 U	390 U	NA	NA	NA
2-Chlorophenol	360 U	NA	400 U	390 U	NA	NA	NA
2-Methylnaphthalene	360 U	NA	400 U	390 U	NA	NA	NA
2-Methylphenol (o-Cresol)	360 U	NA	400 U	390 U	NA	NA	NA
2-Nitroaniline	890 U	NA	1000 U	980 U	NA	NA	NA
2-Nitrophenol	360 U	NA	400 U	390 U	NA	NA	NA
3,3'-Dichlorobenzidine	360 U	NA	400 U	390 U	NA	NA	NA

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)						
SAMPLE ID	SWMU318-SB21-00	SWMU318-SB22-00	SWMU318-SB23-00	SWMU318-SB24-00	SWMU318-SB26-00	SWMU318-SB25-00	SWMU318-SB28-00
SAMPLE DATE	2/3/2005	2/7/2005	2/3/2005	2/7/2005	2/4/2005	2/8/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug							
3-Nitroaniline	890 U	NA	1000 U	980 U	NA	NA	NA
4,6-Dinitro-2-methylphenol	890 U	NA	1000 U	980 U	NA	NA	NA
4-Bromophenyl-phenylether	360 U	NA	400 U	390 U	NA	NA	NA
4-Chloro-3-methylphenol	360 U	NA	400 U	390 U	NA	NA	NA
4-Chloroaniline	360 U	NA	400 U	390 U	NA	NA	NA
4-Chlorophenyl-phenylether	360 U	NA	400 U	390 U	NA	NA	NA
4-Methylphenol (p-Cresol)	360 U	NA	400 U	390 U	NA	NA	NA
4-Nitroaniline	890 U	NA	1000 U	980 U	NA	NA	NA
4-Nitrophenol	890 U	NA	1000 U	980 U	NA	NA	NA
Acenaphthene	360 U	NA	400 U	390 U	NA	NA	NA
Acenaphthylene	360 U	NA	400 U	390 U	NA	NA	NA
Acetophenone	360 U	NA	400 U	390 U	NA	NA	NA
Anthracene	360 U	NA	400 U	390 U	NA	NA	NA
Atrazine	360 U	NA	400 U	390 U	NA	NA	NA
Benzaldehyde	360 U	NA	400 U	390 U	NA	NA	NA
Benzo(a)anthracene	360 U	NA	400 U	390 U	NA	NA	NA
Benzo(a)pyrene	360 U	NA	400 U	390 U	NA	NA	NA
Benzo(b)fluoranthene	360 U	NA	400 U	390 U	NA	NA	NA
Benzo(g,h,i)perylene	360 U	NA	400 U	390 U	NA	NA	NA
Benzo(k)fluoranthene	360 U	NA	400 U	390 U	NA	NA	NA
Bis(2-chloroethoxy)methane	360 U	NA	400 U	390 U	NA	NA	NA
Bis(2-chloroethyl)ether	360 U	NA	400 U	390 U	NA	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP	360 U	NA	400 U	2,100	NA	NA	NA
Butyl Benzyl Phthalate	360 U	NA	400 U	390 U	NA	NA	NA
Caprolactam	360 U	NA	400 U	390 U	NA	NA	NA
Carbazole	360 U	NA	400 U	390 U	NA	NA	NA
Chrysene	360 U	NA	400 U	390 U	NA	NA	NA
Dibenz(a,h)anthracene	360 U	NA	400 U	390 U	NA	NA	NA
Dibenzofuran	360 U	NA	400 U	390 U	NA	NA	NA
Diethyl Phthalate (DEP)	360 U	NA	400 U	390 U	NA	NA	NA
Dimethyl Phthalate	360 U	NA	400 U	390 U	NA	NA	NA
Di-n-butyl Phthalate (DBP)	360 U	NA	400 U	390 U	NA	NA	NA
Di-n-octyl Phthalate	360 U	NA	400 U	390 U	NA	NA	NA
Fluoranthene	360 U	NA	400 U	390 U	NA	NA	NA
Fluorene	360 U	NA	400 U	390 U	NA	NA	NA
Hexachlorobenzene	360 U	NA	400 U	390 U	NA	NA	NA
Hexachlorobutadiene	360 U	NA	400 U	390 U	NA	NA	NA
Hexachlorocyclopentadiene	360 U	NA	400 U	390 U	NA	NA	NA
Hexachloroethane	360 U	NA	400 U	390 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	360 U	NA	400 U	390 U	NA	NA	NA
Isophorone	360 U	NA	400 U	390 U	NA	NA	NA
Naphthalene	360 U	NA	400 U	390 U	NA	NA	NA
Nitrobenzene	360 U	NA	400 U	390 U	NA	NA	NA

APPENDIX G (Continued)

CURRENT SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)						
SAMPLE ID	SWMU318-SB21-00	SWMU318-SB22-00	SWMU318-SB23-00	SWMU318-SB24-00	SWMU318-SB26-00	SWMU318-SB25-00	SWMU318-SB28-00
SAMPLE DATE	2/3/2005	2/7/2005	2/3/2005	2/7/2005	2/4/2005	2/8/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug							
n-Nitrosodi-n-propylamine	360 U	NA	400 U	390 U	NA	NA	NA
n-Nitrosodiphenylamine	360 U	NA	400 U	390 U	NA	NA	NA
Pentachlorophenol	890 U	NA	1000 U	980 U	NA	NA	NA
Phenanthrene	360 U	NA	400 U	390 U	NA	NA	NA
Phenol	360 U	NA	400 U	390 U	NA	NA	NA
Pyrene	360 U	NA	400 U	390 U	NA	NA	NA
Metals (mg/kg)							
Arsenic	0.8 U	NA	NA	2.3 U	NA	NA	NA
Barium	9.4 J	NA	NA	26.7 J	NA	NA	NA
Cadmium	0.23 U	NA	NA	1.4	NA	NA	NA
Chromium	5.6	NA	NA	17	NA	NA	NA
Lead	12.8	NA	NA	60.8	NA	NA	NA
Mercury	0.03 U	NA	NA	0.04 U	NA	NA	NA
Selenium	0.67 U	NA	NA	0.78 U	NA	NA	NA
Silver	0.13 U	NA	NA	0.13 U	NA	NA	NA

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 303									
SAMPLE ID	SWMU303-IS01-00	SWMU303-IS02-00	SWMU303-IS03-00	SWMU303-IS04-00	SWMU303-IS04-00	SWMU303-SB01-00	SWMU303-SB02-00	SWMU303-TW01-00	SWMU303-TW02-00	SWMU303-TW03-00
SAMPLE DATE	09-09-1997	09-09-1997	09-09-1997	09-09-1997	03-19-2002	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002
SAMPLE DEPTH (ft)	0'-2'	0'-2'	0'-2'	0'-2'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'
Volatile Organic Compounds (ug/kg)										
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane (TCA)	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,1-Dichloroethane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,1-Dichloroethene	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
1,2-Dibromoethane (EDB)	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
1,2-Dichlorobenzene (o-)	1.1 U	1.1 U	1.1 U	1.2 U	6 U	NA	NA	NA	NA	NA
1,2-Dichloroethane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,2-Dichloroethene (cis)	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	28 U	5.3 U	27 U	730 U	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
1,2-Dichloropropane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene (m-)	1.1 U	1.1 U	1.1 U	1.2 U	6 U	NA	NA	NA	NA	NA
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropene (cis)	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,3-Dichloropropene (trans)	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
1,4-Dichlorobenzene (p-)	1.6	1.8	1.1 U	3.4	6 U	NA	NA	NA	NA	NA
2,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	110 U	21 U	110 U	2900 U	7 J	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone (MBK)	110 U	21 U	110 U	2900 U	14 U	NA	NA	NA	NA	NA
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	110 U	21 U	110 U	2900 U	14 U	NA	NA	NA	NA	NA
Acetone	1900	30	510	14000	27 J	NA	NA	NA	NA	NA
Benzene	1.1 U	1.1 U	1.1 U	1.2 U	6 U	NA	NA	NA	NA	NA
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Bromoform	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Bromomethane	56 U	11 U	54 U	1500 U	6 U	NA	NA	NA	NA	NA
Butylbenzene, sec-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzene, tert-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	28 U	5.3 U	27 U	730 U	2 J	NA	NA	NA	NA	NA
Carbon Tetrachloride	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 303									
SAMPLE ID	SWMU303-IS01-00	SWMU303-IS02-00	SWMU303-IS03-00	SWMU303-IS04-00	SWMU303-IS04-00	SWMU303-SB01-00	SWMU303-SB02-00	SWMU303-TW01-00	SWMU303-TW02-00	SWMU303-TW03-00
SAMPLE DATE	09-09-1997	09-09-1997	09-09-1997	09-09-1997	03-19-2002	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002
SAMPLE DEPTH (ft)	0'-2'	0'-2'	0'-2'	0'-2'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'
Volatile Organic Compounds (ug/kg) (Cont										
Chlorobenzene	1.1 U	1.1 U	1.1 U	1.2 U	6 U	NA	NA	NA	NA	NA
Chloroethane	56 U	11 U	54 U	1500 U	44 J	NA	NA	NA	NA	NA
Chloroform	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Chloromethane	56 U	11 U	54 U	1500 U	6 U	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
Dibromochloromethane	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	6 UJ	NA	NA	NA	NA	NA
Ethylbenzene	1.1 U	1.1 U	1.1 U	1.2 U	6 U	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
Methyl Acetate	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
Methyl Cyclohexane	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
Methylene Chloride	8	5.3 U	7.1	730 U	2 J	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene (Ethenylbenzene)	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Toluene	1.1 U	1.1 U	1.1 U	1.2 U	6 U	NA	NA	NA	NA	NA
Trichloroethene (TCE)	28 U	5.3 U	27 U	730 U	6 U	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	6 U	NA	NA	NA	NA	NA
Vinyl Chloride	56 U	11 U	54 U	1500 U	6 U	NA	NA	NA	NA	NA
Xylene, m-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene, o-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	1.1 U	1.1 U	1.1 U	1.2 U	17 UJ	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (ug/kg)										
1,1'-Biphenyl	NA	NA	NA	NA	NA	380 U	360 U	370 U	390 U	400 U
2,2'-Oxybis[1-chloropropane]	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2,4,5-Trichlorophenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2,4,6-Trichlorophenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2,4-Dichlorophenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2,4-Dimethylphenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2,4-Dinitrophenol	1800 U	1700 U	1700 U	1900 U	NA	2000 U	1900 U	1900 U	2000 UJ	2000 U
2,4-Dinitrotoluene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2,6-Dinitrotoluene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2-Chloronaphthalene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2-Chlorophenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2-Methylnaphthalene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2-Methylphenol (o-Cresol)	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
2-Nitroaniline	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U
2-Nitrophenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
3,3'-Dichlorobenzidine	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 303									
SAMPLE ID	SWMU303-IS01-00	SWMU303-IS02-00	SWMU303-IS03-00	SWMU303-IS04-00	SWMU303-IS04-00	SWMU303-SB01-00	SWMU303-SB02-00	SWMU303-TW01-00	SWMU303-TW02-00	SWMU303-TW03-00
SAMPLE DATE	09-09-1997	09-09-1997	09-09-1997	09-09-1997	03-19-2002	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002
SAMPLE DEPTH (ft)	0'-2'	0'-2'	0'-2'	0'-2'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'
Semivolatile Organic Compounds (ug/kg) (Cont										
3-Nitroaniline	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U
4,6-Dinitro-2-methylpheno	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U
4-Bromophenyl-phenylethe	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 UJ	390 U	400 UJ
4-Chloro-3-methylphenol	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
4-Chloroaniline	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
4-Chlorophenyl-phenylethe	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
4-Methylphenol (p-Cresol)	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
4-Nitroaniline	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U
4-Nitrophenol	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U
Acenaphthene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Acenaphthylene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Acetophenone	NA	NA	NA	NA	NA	380 U	360 U	370 U	390 U	400 U
Anthracene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Atrazine	NA	NA	NA	NA	NA	380 U	360 U	370 U	390 U	400 U
Benzaldehyde	NA	NA	NA	NA	NA	380 U	360 U	370 U	390 U	400 U
Benzo(a)anthracene	370 U	52 J	360 U	1000	NA	380 U	360 U	370 U	390 U	400 U
Benzo(a)pyrene	370 U	59 J	59 J	650	NA	380 U	360 U	370 U	390 U	400 U
Benzo(b)fluoranthene	370 U	98 J	71 J	1100	NA	380 U	360 U	34 J	390 U	400 U
Benzo(g,h,i)perylene	370 U	350 U	360 U	200 J	NA	380 U	360 U	370 U	390 U	400 U
Benzo(k)fluoranthene	370 U	48 J	37 J	350 J	NA	380 U	360 U	370 U	390 U	400 U
Bis(2-chloroethoxy)methane	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Bis(2-chloroethyl)ethe	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Bis(2-ethylhexyl) Phthalate (BEHP	130 J	75 J	55 J	290 J	NA	110 J	46 J	96 J	390 U	400 U
Butyl Benzyl Phthalate	370 U	350 U	360 U	86 J	NA	380 U	360 U	370 U	390 U	400 U
Caprolactam	NA	NA	NA	NA	NA	380 UJ	360 U	370 U	390 U	400 U
Carbazole	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Chrysene	370 U	82 J	360 U	830	NA	380 U	360 U	370 U	390 U	400 U
Dibenz(a,h)anthracene	370 U	350 U	360 U	42 J	NA	380 U	360 U	370 U	390 U	400 U
Dibenzofuran	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Diethyl Phthalate (DEP)	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Dimethyl Phthalate	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Di-n-butyl Phthalate (DBP)	370 U	350 U	360 U	1800	NA	380 U	360 U	31 J	390 U	400 U
Di-n-octyl Phthalate	370 U	350 U	360 U	390 U	NA	380 U	30 J	370 U	390 U	400 U
Fluoranthene	370 U	350 U	360 U	1400	NA	380 U	360 U	21 J	390 U	400 U
Fluorene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Hexachlorobenzene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 UJ	390 U	400 UJ
Hexachlorobutadiene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Hexachlorocyclopentadiene	1800 U	1700 U	1700 U	1900 U	NA	380 UJ	360 U	370 U	390 UJ	400 U
Hexachloroethane	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Indeno(1,2,3-cd)pyrene	370 U	350 U	360 U	250 J	NA	380 U	360 U	36 J	390 U	400 U
Isophorone	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Naphthalene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	120 J

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 303									
SAMPLE ID	SWMU303-IS01-00	SWMU303-IS02-00	SWMU303-IS03-00	SWMU303-IS04-00	SWMU303-IS04-00	SWMU303-SB01-00	SWMU303-SB02-00	SWMU303-TW01-00	SWMU303-TW02-00	SWMU303-TW03-00
SAMPLE DATE	09-09-1997	09-09-1997	09-09-1997	09-09-1997	03-19-2002	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002
SAMPLE DEPTH (ft)	0'-2'	0'-2'	0'-2'	0'-2'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'
Semivolatile Organic Compounds (ug/kg) (Cont										
Nitrobenzene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
n-Nitrosodi-n-propylamine	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
n-Nitrosodiphenylamine	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Pentachlorophenol	1800 U	1700 U	1700 U	1900 U	NA	760 U	730 U	740 U	780 U	800 U
Phenanthrene	370 U	350 U	360 U	390 U	NA	380 U	360 U	370 U	390 U	400 U
Phenol	370 U	350 U	360 U	160 J	NA	380 U	360 U	370 U	390 U	400 U
Pyrene	370 U	88 J	360 U	1300	NA	380 U	360 U	370 U	390 U	400 U
Metals (mg/kg)										
Arsenic	1.1 U	1.9	1.3	1.2 U	NA	0.48 J	1.1	6.1	1.1 J	0.28 U
Barium	22.6 U	40.3	107	50.9	NA	13.4	47.5	22	15	9.9
Cadmium	0.69	0.53 U	1.1	0.59 U	NA	0.087 J	0.081 J	0.23 U	0.072 U	0.035 U
Chromium	10.3	10.1	16.9	7.9	NA	7.2	6.9	14.4 J	8 J	4.5 J
Lead	12.3	10.1	13.6	16.3	NA	6.3	3.4	7.4	7.1	3.2
Mercury	0.037 U	0.035 U	0.036 U	0.039 U	NA	0.044	0.018 J	0.025 U	0.044 U	0.02 U
Selenium	0.56 U	0.53 U	0.54 U	0.59 U	NA	0.58	0.5 U	0.82	0.76	0.54 U
Silver	1.1 U	1.1 U	1.1 U	1.2 U	NA	0.1 U	0.098 U	0.1 U	0.11 U	0.11 U

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318								
SAMPLE ID	SWMU318-IS01-00	SWMU318-IS02-00	SWMU318-IS03-00	SWMU318-SS01-00	SWMU318-SS02-00	SWMU318-SS03-00	SWMU318-TW01-00	SWMU318-TW02-00	SWMU318-TW03-00
SAMPLE DATE	09-14-1997	09-14-1997	09-14-1997	09-17-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-19-2002
SAMPLE DEPTH (ft)	0' - 2'	0' - 2'	0' - 2'	0' - 2'	0' - 1'	0' - 1'	0' - 1'	0' - 1'	0' - 1'
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane (TCA)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,1,2-Trichloroethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,1-Dichloroethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,1-Dichloroethene	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	11 UJ	7 UJ	5 UJ	7 U	5 U
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	NA	NA	NA	NA	11 UJ	7 UJ	5 UJ	7 U	5 U
1,2-Dibromoethane (EDB)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,2-Dichlorobenzene (o-)	1.2 U	1.4 U	1.2 U	9200	11 UJ	7 UJ	5 UJ	7 U	5 U
1,2-Dichloroethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,2-Dichloroethene (cis)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,2-Dichloropropane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene (m-)	1.2 U	1.4 U	1.2 U	670 U	11 UJ	7 UJ	5 UJ	7 U	5 U
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropene (cis)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,3-Dichloropropene (trans)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
1,4-Dichlorobenzene (p-)	1.8	1.4 U	1.2 U	4300	11 UJ	7 UJ	5 UJ	7 U	5 U
2,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	NA	NA	NA	NA	11 J	16 J	20	9 J	8 J
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone (MBK)	NA	NA	NA	NA	28 U	16 U	3 J	17 U	13 U
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	28 U	16 U	1 J	17 U	13 U
Acetone	NA	NA	NA	NA	32	40 J	78	37	38 J
Benzene	1.2 U	1.4 U	1.2 U	670 U	2 J	7 U	2 J	7 U	5 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Bromoform	NA	NA	NA	NA	11 U	7 U	5 U	13	5 U
Bromomethane	NA	NA	NA	NA	11 U	7 U	5 UJ	7 UJ	5 U
Butylbenzene, sec-	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzene, tert-	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	NA	NA	NA	NA	11 U	3 J	5 U	7 U	5 U
Carbon Tetrachloride	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318								
SAMPLE ID	SWMU318-IS01-00	SWMU318-IS02-00	SWMU318-IS03-00	SWMU318-SS01-00	SWMU318-SS02-00	SWMU318-SS03-00	SWMU318-TW01-00	SWMU318-TW02-00	SWMU318-TW03-00
SAMPLE DATE	09-14-1997	09-14-1997	09-14-1997	09-17-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-19-2002
SAMPLE DEPTH (ft)	0' - 2'	0' - 2'	0' - 2'	0' - 2'	0' - 1'	0' - 1'	0' - 1'	0' - 1'	0' - 1'
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	1.2 U	1.4 U	1.2 U	670 U	11 U	7 U	5 U	7 U	5 U
Chloroethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 UJ
Chloroform	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Chloromethane	NA	NA	NA	NA	11 UJ	7 UJ	5 U	7 U	5 U
Cyclohexane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Dibromochloromethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	11 UJ	7 UJ	5 U	7 U	5 UJ
Ethylbenzene	1.2 U	1.4 U	1.2 U	670 U	11 U	7 U	5 U	7 U	5 U
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Methyl Acetate	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Methyl Cyclohexane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Methylene Chloride	NA	NA	NA	NA	4 J	2 J	11	18	1 J
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene (Ethenylbenzene)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Tetrachloroethene (PCE)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Toluene	1.2 U	1.4 U	1.2 U	670 U	11 U	7 U	5 U	7 U	5 U
Trichloroethene (TCE)	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Trichlorofluoromethane	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Vinyl Chloride	NA	NA	NA	NA	11 U	7 U	5 U	7 U	5 U
Xylene, m-	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene, o-	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	1.2 U	1.4 U	1.2 U	670 U	34 UJ	20 UJ	16 UJ	20 UJ	15 UJ
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	NA	NA	NA	NA	650 U	460 U	390 U	390 U	370 U
2,2'-Oxybis[1-chloropropane]	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2,4,5-Trichlorophenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2,4,6-Trichlorophenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2,4-Dichlorophenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2,4-Dimethylphenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2,4-Dinitrophenol	2000 U	2300 U	2000 U	86000 U	3300 U	2400 U	2000 U	2000 U	1900 U
2,4-Dinitrotoluene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2,6-Dinitrotoluene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2-Chloronaphthalene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2-Chlorophenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2-Methylnaphthalene	410 U	470 U	410 U	2600 J	650 UJ	120 J	390 UJ	390 UJ	370 UJ
2-Methylphenol (o-Cresol)	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
2-Nitroaniline	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U
2-Nitrophenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
3,3'-Dichlorobenzidine	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318								
SAMPLE ID	SWMU318-IS01-00	SWMU318-IS02-00	SWMU318-IS03-00	SWMU318-SS01-00	SWMU318-SS02-00	SWMU318-SS03-00	SWMU318-TW01-00	SWMU318-TW02-00	SWMU318-TW03-00
SAMPLE DATE	09-14-1997	09-14-1997	09-14-1997	09-17-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-19-2002
SAMPLE DEPTH (ft)	0' - 2'	0' - 2'	0' - 2'	0' - 2'	0' - 1'	0' - 1'	0' - 1'	0' - 1'	0' - 1'
Semivolatile Organic Compounds (ug/									
3-Nitroaniline	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U
4,6-Dinitro-2-methylpheno	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U
4-Bromophenyl-phenylether	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
4-Chloro-3-methylphenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
4-Chloroaniline	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
4-Chlorophenyl-phenylether	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
4-Methylphenol (p-Cresol)	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
4-Nitroaniline	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U
4-Nitrophenol	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U
Acenaphthene	410 U	470 U	410 U	18000 U	650 U	34 J	390 U	390 U	370 U
Acenaphthylene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Acetophenone	NA	NA	NA	NA	650 U	120 J	390 U	390 U	370 U
Anthracene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Atrazine	NA	NA	NA	NA	650 U	460 U	390 U	390 U	370 U
Benzaldehyde	NA	NA	NA	NA	650 U	460 U	390 U	33 J	370 U
Benzo(a)anthracene	56 J	470 U	410 U	4100 J	52 J	220 J	390 U	390 U	370 U
Benzo(a)pyrene	110 J	470 U	410 U	5000 J	82 J	190 J	390 U	390 U	370 U
Benzo(b)fluoranthene	110 J	470 U	410 U	5900 J	140 J	260 J	390 U	29 J	370 U
Benzo(g,h,i)perylene	99 J	470 U	410 U	5000 J	86 J	120 J	390 U	390 U	370 U
Benzo(k)fluoranthene	410 U	470 U	410 U	6900 J	130 J	300 J	390 U	390 U	370 U
Bis(2-chloroethoxy)methane	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Bis(2-chloroethyl)ether	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Bis(2-ethylhexyl) Phthalate (BEHP	230 J	1400 J	180 J	22000 J	300 J	1100 J	380 J	380 J	1100
Butyl Benzyl Phthalate	410 U	470 U	410 U	2000 J	86 J	65 J	390 U	390 U	370 U
Caprolactam	NA	NA	NA	NA	650 U	100 J	390 U	390 U	370 U
Carbazole	410 U	470 U	410 U	18000 U	650 U	44 J	390 U	390 U	370 U
Chrysene	69 J	470 U	410 U	6700 J	99 J	290 J	390 U	390 U	370 U
Dibenz(a,h)anthracene	45 J	470 U	410 U	2300 J	650 U	68 J	390 U	390 U	370 U
Dibenzofuran	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Diethyl Phthalate (DEP)	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Dimethyl Phthalate	410 U	470 U	410 U	18000 U	650 U	48 J	390 U	390 U	370 U
Di-n-butyl Phthalate (DBP)	410 U	470 U	410 U	2400 J	650 U	460 U	390 U	390 U	370 U
Di-n-octyl Phthalate	410 U	470 U	410 U	18000 U	170 J	55 J	390 U	390 U	37 J
Fluoranthene	69 J	470 U	410 U	7700 J	120 J	440 J	390 U	22 J	370 U
Fluorene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Hexachlorobenzene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Hexachlorobutadiene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Hexachlorocyclopentadiene	2000 U	2300 U	2000 U	86000 U	650 UJ	460 UJ	390 UJ	390 UJ	370 UJ
Hexachloroethane	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Indeno(1,2,3-cd)pyrene	91 J	470 U	410 U	4700 J	160 J	240 J	390 U	47 J	370 U
Isophorone	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Naphthalene	410 U	470 U	410 U	17000 J	650 U	430 J	390 U	390 U	370 U

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318								
SAMPLE ID	SWMU318-IS01-00	SWMU318-IS02-00	SWMU318-IS03-00	SWMU318-SS01-00	SWMU318-SS02-00	SWMU318-SS03-00	SWMU318-TW01-00	SWMU318-TW02-00	SWMU318-TW03-00
SAMPLE DATE	09-14-1997	09-14-1997	09-14-1997	09-17-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-19-2002
SAMPLE DEPTH (ft)	0' - 2'	0' - 2'	0' - 2'	0' - 2'	0' - 1'	0' - 1'	0' - 1'	0' - 1'	0' - 1'
Semivolatile Organic Compounds (ug									
Nitrobenzene	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
n-Nitrosodi-n-propylamine	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
n-Nitrosodiphenylamine	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Pentachlorophenol	2000 U	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U	740 U
Phenanthrene	410 U	470 U	410 U	18000 U	650 U	110 J	390 U	390 U	370 U
Phenol	410 U	470 U	410 U	18000 U	650 U	460 U	390 U	390 U	370 U
Pyrene	71 J	470 U	410 U	7800 J	90 J	370 J	390 U	390 U	370 U
Metals (mg/kg)									
Arsenic	3.1	14.3	3.7	1.3 U	1.4 J	3.3	2	0.26 U	0.67 J
Barium	50.3	44	25 U	396	33.2	47.8 J	36.3	13.4	24.6
Cadmium	1.6	3	0.62 U	57.2	3.5	0.41 J	0.46 J	0.14 J	0.57
Chromium	24.6	48.2	18.2	91.1	20.5	24.9	20.2	6.7	9.2
Lead	30.7	45.8	21.9	110	45.4 J	20.8 J	66.1 J	11.2 J	16.7 J
Mercury	0.067	0.14	0.052	0.045	0.066	0.099	0.059	0.023 J	0.027 J
Selenium	0.81	0.85	0.62 U	0.67 U	1	1.3	0.56 J	0.5 U	0.58
Silver	1.2 U	1.4 U	1.2 U	7.2	0.16 U	0.12 U	0.1 U	0.098 U	0.1 U

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
SAMPLE ID	SWMU318-SB01-00	SWMU318-SB02-00	SWMU318-SB03-00	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB07-00	SWMU318-SB08-00	SWMU318-SB09-00	SWMU318-SB10-00
SAMPLE DATE	3/16/2004	3/16/2004	3/19/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004	3/22/2004	3/23/2004
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
1,1,1-Trichloroethane (TCA)	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,1,2,2-Tetrachloroethane	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	500 U	NA	NA	10 UJ	NA	NA	12 U	NA
1,1,2-Trichloroethane	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,1-Dichloroethane	116 U	500 U	13 U	12 U	10 UJ	114 U	110 U	12 U	5.6 U
1,1-Dichloroethene	116 U	500 U	13 U	12 U	10 UJ	114 U	110 U	12 U	5.6 U
1,1-Dichloropropene	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
1,2,3-Trichlorobenzene	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,2,4-Trimethylbenzene	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
1,2-Dibromo-3-chloropropane (DBCP)	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,2-Dibromoethane (EDB)	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,2-Dichlorobenzene (o-)	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,2-Dichloroethane	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,2-Dichloroethene (cis)	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,2-Dichloroethene (total)	NA	500 U	NA	NA	10 U	NA	NA	12 U	NA
1,2-Dichloroethene (trans)	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,2-Dichloropropane	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,3,5-Trimethylbenzene	116 U	117.5 U	13 U	12 U	12 U	455	593	6.3 U	5.6 U
1,3-Dichlorobenzene (m-)	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,3-Dichloropropane	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
1,3-Dichloropropene (cis)	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,3-Dichloropropene (trans)	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
1,4-Dichlorobenzene (p-)	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
2,2-Dichloropropane	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
2-Butanone (MEK)	NA	500 UJ	NA	NA	10 UJ	NA	NA	12 U	NA
2-Chlorotoluene	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
2-Hexanone (MBK)	NA	500 U	NA	NA	10 UJ	NA	NA	12 U	NA
4-Chlorotoluene	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
4-Isopropyltoluene	116 U	142	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
4-Methyl-2-pentanone (MIBK)	NA	500 U	NA	NA	10 U	NA	NA	12 U	NA
Acetone	NA	500 UJ	NA	NA	10 UJ	NA	NA	12 UJ	NA
Benzene	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
Bromobenzene	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
Bromochloromethane	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
Bromodichloromethane	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
Bromoform	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
Bromomethane	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	11 U
Butylbenzene, sec-	116 U	69.5 J	13 U	12 U	12 U	125	109 J	6.3 U	5.6 U
Butylbenzene, tert-	116 U	124	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
Carbon Disulfide	NA	500 U	NA	NA	10 UJ	NA	NA	12 U	NA
Carbon Tetrachloride	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
SAMPLE ID	SWMU318-SB01-00	SWMU318-SB02-00	SWMU318-SB03-00	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB07-00	SWMU318-SB08-00	SWMU318-SB09-00	SWMU318-SB10-00
SAMPLE DATE	3/16/2004	3/16/2004	3/19/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004	3/22/2004	3/23/2004
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
Chloroethane	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	11 U
Chloroform	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
Chloromethane	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	11 U
Cyclohexane	NA	500 U	NA	NA	10 U	NA	NA	12 U	NA
Dibromochloromethane	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
Dibromomethane	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
Dichlorodifluoromethane	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
Ethylbenzene	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
Hexachlorobutadiene	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
Isopropylbenzene (Cumene)	698	500 U	13 U	12 U	10 U	568 U	2220 U	12 U	5.6 U
Methyl Acetate	NA	500 U	NA	NA	10 UJ	NA	NA	12 U	NA
Methyl Cyclohexane	NA	500 U	NA	NA	10 U	NA	NA	12 U	NA
Methyl Tert-Butyl Ether (MTBE)	NA	500 U	NA	NA	10 U	NA	NA	12 U	NA
Methylene Chloride	116 U	500 U	13 U	12 U	10 U	114 U	110 U	23 UJ	11 U
Naphthalene	2490	3760	13 U	12 U	12 U	10600	57800	6.3 U	5.6 U
n-Butylbenzene	1430	2323	13 U	12 U	12 U	31700	18100	6.3 U	5.6 U
n-Propylbenzene	116 U	117.5 U	13 U	12 U	12 U	114 U	110 U	6.3 U	5.6 U
Styrene (Ethenylbenzene)	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
Tetrachloroethene (PCE)	116 U	500 U	13 U	12 U	10 U	42 J	110 U	12 U	5.6 U
Toluene	116 U	500 U	13 U	4 J	10 U	114 U	34 J	12 U	5.6 U
Trichloroethene (TCE)	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	5.6 U
Trichlorofluoromethane	NA	500 U	NA	NA	10 UJ	NA	NA	2 J	NA
Vinyl Chloride	116 U	500 U	13 U	12 U	10 U	114 U	110 U	12 U	11 U
Xylene, m-	233 U	500 U	26 U	2 J	10 U	25 J	19 J	12 U	4.7 J
Xylene, o-	116 U	500 U	4 J	12 U	10 U	44 J	35 J	12 U	5.6 U
Xylenes, total	NA	500 U	NA	NA	10 U	NA	NA	12 U	NA
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	11 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
2,2'-Oxybis[1-chloropropane]	390 U	NA	400 UJ	NA	NA	400 UJ	9000 U	390 U	400 U
2,4,5-Trichlorophenol	980 U	NA	1000 U	NA	NA	1000 U	22000 U	980 U	1000 U
2,4,6-Trichlorophenol	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
2,4-Dichlorophenol	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
2,4-Dimethylphenol	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
2,4-Dinitrophenol	980 U	NA	1000 U	NA	NA	1000 U	22000 U	980 U	1000 U
2,4-Dinitrotoluene	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
2,6-Dinitrotoluene	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
2-Chloronaphthalene	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
2-Chlorophenol	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
2-Methylnaphthalene	180 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
2-Methylphenol (o-Cresol)	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
2-Nitroaniline	980 U	NA	1000 UJ	NA	NA	1000 UJ	22000 U	980 U	1000 U
2-Nitrophenol	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
3,3'-Dichlorobenzidine	390 U	NA	400 U	NA	NA	400 U	9000 UJ	390 UJ	400 UJ

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
SAMPLE ID	SWMU318-SB01-00	SWMU318-SB02-00	SWMU318-SB03-00	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB07-00	SWMU318-SB08-00	SWMU318-SB09-00	SWMU318-SB10-00
SAMPLE DATE	3/16/2004	3/16/2004	3/19/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004	3/22/2004	3/23/2004
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug									
3-Nitroaniline	980 UJ	NA	1000 U	NA	NA	1000 U	22000 U	980 U	1000 U
4,6-Dinitro-2-methylpheno	980 U	NA	1000 U	NA	NA	1000 U	22000 U	980 U	1000 U
4-Bromophenyl-phenylethe	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
4-Chloro-3-methylphenol	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
4-Chloroaniline	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
4-Chlorophenyl-phenylethe	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
4-Methylphenol (p-Cresol)	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
4-Nitroaniline	980 UJ	NA	1000 U	NA	NA	1000 U	22000 UJ	980 UJ	1000 UJ
4-Nitrophenol	980 U	NA	1000 U	NA	NA	1000 U	22000 U	980 U	1000 U
Acenaphthene	220 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Acenaphthylene	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Acetophenone	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Anthracene	32 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Atrazine	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Benzaldehyde	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Benzo(a)anthracene	350 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Benzo(a)pyrene	380 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Benzo(b)fluoranthene	430	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Benzo(g,h,i)perylene	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Benzo(k)fluoranthene	300 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Bis(2-chloroethoxy)methane	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Bis(2-chloroethyl)ether	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Bis(2-ethylhexyl) Phthalate (BEHP	390 U	NA	400 UJ	NA	NA	400 UJ	9000 U	390 U	400 U
Butyl Benzyl Phthalate	390 U	NA	400 UJ	NA	NA	400 UJ	9000 U	390 U	400 U
Caprolactam	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Carbazole	19 J	NA	400 UJ	NA	NA	400 UJ	9000 U	390 U	400 U
Chrysene	390	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Dibenz(a,h)anthracene	68 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Dibenzofuran	150 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Diethyl Phthalate (DEP)	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Dimethyl Phthalate	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Di-n-butyl Phthalate (DBP)	31 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Di-n-octyl Phthalate	390 U	NA	400 UJ	NA	NA	400 UJ	9000 U	390 U	400 U
Fluoranthene	650	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Fluorene	160 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Hexachlorobenzene	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Hexachlorobutadiene	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Hexachlorocyclopentadiene	390 U	NA	400 UJ	NA	NA	400 UJ	9000 UJ	390 U	400 U
Hexachloroethane	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Indeno(1,2,3-cd)pyrene	210 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Isophorone	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Naphthalene	2900	NA	400 U	NA	NA	400 U	32000	390 U	400 U

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
SAMPLE ID	SWMU318-SB01-00	SWMU318-SB02-00	SWMU318-SB03-00	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB07-00	SWMU318-SB08-00	SWMU318-SB09-00	SWMU318-SB10-00
SAMPLE DATE	3/16/2004	3/16/2004	3/19/2004	3/16/2004	3/16/2004	3/20/2004	3/20/2004	3/22/2004	3/23/2004
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug									
Nitrobenzene	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
n-Nitrosodi-n-propylamine	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
n-Nitrosodiphenylamine	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Pentachlorophenol	980 U	NA	1000 U	NA	NA	1000 U	22000 U	980 U	1000 U
Phenanthrene	120 J	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Phenol	390 U	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Pyrene	830	NA	400 U	NA	NA	400 U	9000 U	390 U	400 U
Metals (mg/kg)									
Arsenic	0.71 J	NA	1.4 U	NA	NA	0.48 J	1.1 J	2.6	0.82 J
Barium	10.3 J	NA	4.6 J	NA	NA	5.9	22.1	20.3 J	11.7 J
Cadmium	0.43 J	NA	10 U	NA	NA	0.04 U	1.3 J	0.55 J	0.87 U
Chromium	6.1 J	NA	2.8 J	NA	NA	3.8	10.7	10.3	3.7
Lead	19.8	NA	2 J	NA	NA	2.8	2.2	21.7 J	8.4 J
Mercury	0.01 U	NA	0.01 U	NA	NA	0.01 J	0.01 J	0.03 J	0.02 J
Selenium	0.42 J	NA	0.39 U	NA	NA	0.38 J	0.34 U	0.69 J	0.4 U
Silver	4.6 J	NA	0.2 U	NA	NA	0.17 U	0.17 U	0.22 U	0.2 U

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
SAMPLE ID	SWMU318-SB11-00	SWMU318-SB12-00	SWMU318-SB13-00	SWMU318-SB16-00	SWMU318-SB18-00	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB21-00	SWMU318-SB22-00
SAMPLE DATE	3/22/2004	3/22/2004	3/23/2004	2/4/2005	2/7/2005	2/4/2005	2/3/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	2.4183797 U	2.1459227 U	2 U
1,1,1-Trichloroethane (TCA)	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
1,1,2,2-Tetrachloroethane	5.7 U	6.2 U	5.4 U	11 U	2 U	2.4038462 U	11 UJ	2.1459227 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	11 U	NA	NA	11 UJ	NA	NA
1,1,2-Trichloroethane	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
1,1-Dichloroethane	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
1,1-Dichloroethene	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
1,1-Dichloropropene	5.7 U	6.2 U	5.4 U	1.210347 U	1 U	1.2019231 U	1.2091898 U	1.0729614 U	1 U
1,2,3-Trichlorobenzene	5.7 U	6.2 U	5.4 U	1.931307 J	0.67 J	6.0096154 U	0.82 J	5.3648069 U	0.7 J
1,2,3-Trichloropropane	NA	NA	NA	2.4206941 U	2 U	2.4038462 U	2.4183797 U	2.1459227 U	2 U
1,2,4-Trichlorobenzene	5.7 U	6.2 U	5.4 U	11 U	0.47 J	6.0096154 U	11 UJ	5.3648069 U	0.53 J
1,2,4-Trimethylbenzene	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	0.59 J	2.1459227 U	2 U
1,2-Dibromo-3-chloropropane (DBCP)	5.7 U	6.2 U	5.4 U	11 U	6 U	6.0096154 U	11 UJ	5.3648069 U	5 U
1,2-Dibromoethane (EDB)	5.7 U	6.2 U	5.4 U	11 U	2 U	2.4038462 U	11 UJ	2.1459227 U	2 U
1,2-Dichlorobenzene (o-)	5.7 U	6.2 U	5.4 U	11 U	2 U	2.4038462 U	11 UJ	2.1459227 U	2 U
1,2-Dichloroethane	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
1,2-Dichloroethene (cis)	5.7 U	6.2 U	5.4 U	11 U	0.86 J	1.2019231 U	11 UJ	1.0729614 U	1 U
1,2-Dichloroethene (total)	NA	NA	NA	11 U	NA	NA	11 UJ	NA	NA
1,2-Dichloroethene (trans)	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
1,2-Dichloropropane	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
1,3,5-Trimethylbenzene	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	0.47 J	2.1459227 U	2 U
1,3-Dichlorobenzene (m-)	5.7 U	6.2 U	5.4 U	11 U	2 U	2.4038462 U	11 UJ	2.1459227 U	2 U
1,3-Dichloropropane	5.7 U	6.2 U	5.4 U	1.210347 U	1 U	1.2019231 U	1.2091898 U	1.0729614 U	1 U
1,3-Dichloropropene (cis)	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
1,3-Dichloropropene (trans)	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
1,4-Dichlorobenzene (p-)	5.7 U	6.2 U	5.4 U	11 U	2 U	2.4038462 U	11 UJ	2.1459227 U	2 U
2,2-Dichloropropane	5.7 U	6.2 U	5.4 U	1.210347 U	1 U	1.2019231 U	1.2091898 U	1.0729614 U	1 U
2-Butanone (MEK)	NA	NA	NA	11 U	NA	NA	11 UJ	NA	NA
2-Chlorotoluene	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	2.4183797 U	2.1459227 U	2 U
2-Hexanone (MBK)	NA	NA	NA	11 U	NA	NA	11 UJ	NA	NA
4-Chlorotoluene	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	2.4183797 U	2.1459227 U	2 U
4-Isopropyltoluene	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	2.4183797 U	2.1459227 U	2 U
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	11 U	NA	NA	11 UJ	NA	NA
Acetone	NA	NA	NA	11 U	NA	NA	11 UJ	NA	NA
Benzene	5.7 U	6.2 U	5.4 U	11 U	0.9 J	1.2019231 U	11 UJ	1.0729614 U	1 U
Bromobenzene	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	2.4183797 U	2.1459227 U	2 U
Bromochloromethane	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	2.4183797 U	2.1459227 U	2 U
Bromodichloromethane	5.7 U	6.2 U	5.4 U	11 U	2 U	2.4038462 U	11 UJ	2.1459227 U	2 U
Bromoform	5.7 U	6.2 U	5.4 U	11 U	2 U	2.4038462 U	11 UJ	2.1459227 U	2 U
Bromomethane	11 U	12 U	11 U	11 U	6 U	6.0096154 U	11 UJ	5.3648069 U	5 U
Butylbenzene, sec-	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	2.4183797 U	2.1459227 U	2 U
Butylbenzene, tert-	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	2.4183797 U	2.1459227 U	2 U
Carbon Disulfide	NA	NA	NA	11 U	NA	NA	11 UJ	NA	NA
Carbon Tetrachloride	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
SAMPLE ID	SWMU318-SB11-00	SWMU318-SB12-00	SWMU318-SB13-00	SWMU318-SB16-00	SWMU318-SB18-00	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB21-00	SWMU318-SB22-00
SAMPLE DATE	3/22/2004	3/22/2004	3/23/2004	2/4/2005	2/7/2005	2/4/2005	2/3/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
Chloroethane	11 U	12 U	11 U	11 U	6 U	6.0096154 U	11 UJ	5.3648069 U	5 U
Chloroform	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
Chloromethane	11 U	12 U	11 U	11 U	6 U	6.0096154 U	11 UJ	5.3648069 U	5 U
Cyclohexane	NA	NA	NA	11 U	NA	NA	11 UJ	NA	NA
Dibromochloromethane	5.7 U	6.2 U	5.4 U	11 U	2 U	2.4038462 U	11 UJ	2.1459227 U	2 U
Dibromomethane	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	2.4183797 U	2.1459227 U	2 U
Dichlorodifluoromethane	5.7 U	6.2 U	5.4 U	11 U	6 U	6.0096154 U	11 UJ	5.3648069 U	5 U
Ethylbenzene	5.7 U	6.2 U	7.3	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
Hexachlorobutadiene	5.7 U	6.2 U	5.4 U	6.0517352 U	6 U	6.0096154 U	6.0459492 U	5.3648069 U	5 U
Isopropylbenzene (Cumene)	5.7 U	6.2 U	5.4 U	11 U	2 U	2.4038462 U	11 UJ	2.1459227 U	2 U
Methyl Acetate	NA	NA	NA	11 U	NA	NA	11 UJ	NA	NA
Methyl Cyclohexane	NA	NA	NA	11 U	NA	NA	11 UJ	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	11 U	NA	NA	11 UJ	NA	NA
Methylene Chloride	11 U	13	11 U	17 U	6 U	6.0096154 U	15 U	5.3648069 U	5 U
Naphthalene	5.7 U	6.2 U	5.4 U	6.0517352 U	6 U	6.0096154 U	1.1 J	5.3648069 U	5 U
n-Butylbenzene	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	2.4183797 U	2.1459227 U	2 U
n-Propylbenzene	5.7 U	6.2 U	5.4 U	2.4206941 U	2 U	2.4038462 U	2.4183797 U	2.1459227 U	2 U
Styrene (Ethenylbenzene)	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
Tetrachloroethene (PCE)	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
Toluene	5.7 U	6.2 U	3.6 J	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
Trichloroethene (TCE)	5.7 U	6.2 U	5.4 U	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
Trichlorofluoromethane	NA	NA	NA	11 U	6 U	6.0096154 U	11 UJ	5.3648069 U	5 U
Vinyl Chloride	11 U	12 U	11 U	11 U	2 U	2.4038462 U	11 UJ	2.1459227 U	2 U
Xylene, m-	5.7 U	6.2 U	26	11 U	2 U	2.4038462 U	11 UJ	2.1459227 U	2 U
Xylene, o-	5.7 U	6.2 U	8.3	11 U	1 U	1.2019231 U	11 UJ	1.0729614 U	1 U
Xylenes, total	NA	NA	NA	11 U	NA	NA	11 UJ	NA	NA
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
2,2'-Oxybis[1-chloropropane]	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
2,4,5-Trichlorophenol	NA	NA	NA	990 U	NA	980 U	NA	890 U	NA
2,4,6-Trichlorophenol	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
2,4-Dichlorophenol	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
2,4-Dimethylphenol	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
2,4-Dinitrophenol	NA	NA	NA	990 U	NA	980 U	NA	890 U	NA
2,4-Dinitrotoluene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
2,6-Dinitrotoluene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
2-Chloronaphthalene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
2-Chlorophenol	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
2-Methylnaphthalene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
2-Methylphenol (o-Cresol)	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
2-Nitroaniline	NA	NA	NA	990 U	NA	980 U	NA	890 U	NA
2-Nitrophenol	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
3,3'-Dichlorobenzidine	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
SAMPLE ID	SWMU318-SB11-00	SWMU318-SB12-00	SWMU318-SB13-00	SWMU318-SB16-00	SWMU318-SB18-00	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB21-00	SWMU318-SB22-00
SAMPLE DATE	3/22/2004	3/22/2004	3/23/2004	2/4/2005	2/7/2005	2/4/2005	2/3/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug									
3-Nitroaniline	NA	NA	NA	990 U	NA	980 U	NA	890 U	NA
4,6-Dinitro-2-methylpheno	NA	NA	NA	990 U	NA	980 U	NA	890 U	NA
4-Bromophenyl-phenylethe	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
4-Chloro-3-methylphenol	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
4-Chloroaniline	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
4-Chlorophenyl-phenylethe	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
4-Methylphenol (p-Cresol)	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
4-Nitroaniline	NA	NA	NA	990 U	NA	980 U	NA	890 U	NA
4-Nitrophenol	NA	NA	NA	990 U	NA	980 U	NA	890 U	NA
Acenaphthene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Acenaphthylene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Acetophenone	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Anthracene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Atrazine	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Benzaldehyde	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Benzo(a)anthracene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Benzo(a)pyrene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Benzo(b)fluoranthene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Benzo(g,h,i)perylene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Benzo(k)fluoranthene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Bis(2-chloroethoxy)methane	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Bis(2-chloroethyl)ethe	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Bis(2-ethylhexyl) Phthalate (BEHP	NA	NA	NA	220 J	NA	390 U	NA	360 U	NA
Butyl Benzyl Phthalate	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Caprolactam	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Carbazole	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Chrysene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Dibenz(a,h)anthracene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Dibenzofuran	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Diethyl Phthalate (DEP)	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Dimethyl Phthalate	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Di-n-butyl Phthalate (DBP)	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Di-n-octyl Phthalate	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Fluoranthene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Fluorene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Hexachlorobenzene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Hexachlorobutadiene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Hexachlorocyclopentadiene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Hexachloroethane	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Isophorone	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Naphthalene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
SAMPLE ID	SWMU318-SB11-00	SWMU318-SB12-00	SWMU318-SB13-00	SWMU318-SB16-00	SWMU318-SB18-00	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB21-00	SWMU318-SB22-00
SAMPLE DATE	3/22/2004	3/22/2004	3/23/2004	2/4/2005	2/7/2005	2/4/2005	2/3/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug									
Nitrobenzene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
n-Nitrosodi-n-propylamine	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
n-Nitrosodiphenylamine	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Pentachlorophenol	NA	NA	NA	990 U	NA	980 U	NA	890 U	NA
Phenanthrene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Phenol	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Pyrene	NA	NA	NA	390 U	NA	390 U	NA	360 U	NA
Metals (mg/kg)									
Arsenic	NA	NA	NA	2 U	NA	3.4 U	NA	0.8 U	NA
Barium	NA	NA	NA	23 J	NA	17.3 J	NA	9.4 J	NA
Cadmium	NA	NA	NA	3.1	NA	0.54 U	NA	0.23 U	NA
Chromium	NA	NA	NA	15.5	NA	12.5	NA	5.6	NA
Lead	NA	NA	NA	32.5	NA	29.2	NA	12.8	NA
Mercury	NA	NA	NA	0.07 U	NA	0.05 U	NA	0.03 U	NA
Selenium	NA	NA	NA	0.66 U	NA	1 U	NA	0.67 U	NA
Silver	NA	NA	NA	0.13 U	NA	0.15 U	NA	0.13 U	NA

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)					
SAMPLE ID	SWMU318-SB23-00	SWMU318-SB24-00	SWMU318-SB25-00	SWMU318-SB26-00	SWMU318-SB25-00	SWMU318-SB28-00
SAMPLE DATE	2/3/2005	2/7/2005	2/8/2005	2/4/2005	2/8/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)						
1,1,1,2-Tetrachloroethane	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane (TCA)	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	6.097561 U	5.8754407 U	6 U	1.3 J	6 U	6 U
1,2,3-Trichloropropane	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	6.097561 U	5.8754407 U	6 U	0.94 J	6 U	6 U
1,2,4-Trimethylbenzene	2.4390244 U	2.3501763 U	2 U	0.65 J	2 U	2 U
1,2-Dibromo-3-chloropropane (DBCP)	6.097561 U	5.8754407 U	6 U	6 U	6 U	6 U
1,2-Dibromoethane (EDB)	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (cis)	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
1,3-Dichloropropene (cis)	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
1,3-Dichloropropene (trans)	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene (p-)	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
2-Butanone (MEK)	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
2-Hexanone (MBK)	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA
Benzene	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
Bromobenzene	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
Bromochloromethane	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
Bromoform	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
Bromomethane	6.097561 U	5.8754407 U	6 U	6 U	6 U	6 U
Butylbenzene, sec-	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
Butylbenzene, tert-	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
Carbon Disulfide	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)					
SAMPLE ID	SWMU318-SB23-00	SWMU318-SB24-00	SWMU318-SB25-00	SWMU318-SB26-00	SWMU318-SB25-00	SWMU318-SB28-00
SAMPLE DATE	2/3/2005	2/7/2005	2/8/2005	2/4/2005	2/8/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)						
Chlorobenzene	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
Chloroethane	6.097561 U	5.8754407 U	6 U	6 U	6 U	6 U
Chloroform	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
Chloromethane	6.097561 U	5.8754407 U	6 U	6 U	6 U	6 U
Cyclohexane	NA	NA	NA	NA	NA	NA
Dibromochloromethane	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
Dibromomethane	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane	6.097561 U	5.8754407 U	6 U	6 U	6 U	6 U
Ethylbenzene	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	6.097561 U	5.8754407 U	6 U	6 U	6 U	6 U
Isopropylbenzene (Cumene)	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
Methyl Acetate	NA	NA	NA	NA	NA	NA
Methyl Cyclohexane	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	NA	NA
Methylene Chloride	6.097561 U	5.8754407 U	6 U	6 U	6 U	6 U
Naphthalene	6.097561 U	5.8754407 U	6 U	1.5 J	6 U	6 U
n-Butylbenzene	2.4390244 U	2.3501763 U	2 U	0.66 J	2 U	2 U
n-Propylbenzene	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
Toluene	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
Trichloroethene (TCE)	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	6.097561 U	5.8754407 U	6 U	6 U	6 U	6 U
Vinyl Chloride	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
Xylene, m-	2.4390244 U	2.3501763 U	2 U	2 U	2 U	2 U
Xylene, o-	1.2195122 U	1.1750881 U	1 U	1 U	1 U	1 U
Xylenes, total	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (ug						
1,1'-Biphenyl	400 U	390 U	NA	NA	NA	NA
2,2'-Oxybis[1-chloropropane]	400 U	390 U	NA	NA	NA	NA
2,4,5-Trichlorophenol	1000 U	980 U	NA	NA	NA	NA
2,4,6-Trichlorophenol	400 U	390 U	NA	NA	NA	NA
2,4-Dichlorophenol	400 U	390 U	NA	NA	NA	NA
2,4-Dimethylphenol	400 U	390 U	NA	NA	NA	NA
2,4-Dinitrophenol	1000 U	980 U	NA	NA	NA	NA
2,4-Dinitrotoluene	400 U	390 U	NA	NA	NA	NA
2,6-Dinitrotoluene	400 U	390 U	NA	NA	NA	NA
2-Chloronaphthalene	400 U	390 U	NA	NA	NA	NA
2-Chlorophenol	400 U	390 U	NA	NA	NA	NA
2-Methylnaphthalene	400 U	390 U	NA	NA	NA	NA
2-Methylphenol (o-Cresol)	400 U	390 U	NA	NA	NA	NA
2-Nitroaniline	1000 U	980 U	NA	NA	NA	NA
2-Nitrophenol	400 U	390 U	NA	NA	NA	NA
3,3'-Dichlorobenzidine	400 U	390 U	NA	NA	NA	NA

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)					
SAMPLE ID	SWMU318-SB23-00	SWMU318-SB24-00	SWMU318-SB25-00	SWMU318-SB26-00	SWMU318-SB25-00	SWMU318-SB28-00
SAMPLE DATE	2/3/2005	2/7/2005	2/8/2005	2/4/2005	2/8/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug						
3-Nitroaniline	1000 U	980 U	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	1000 U	980 U	NA	NA	NA	NA
4-Bromophenyl-phenylether	400 U	390 U	NA	NA	NA	NA
4-Chloro-3-methylphenol	400 U	390 U	NA	NA	NA	NA
4-Chloroaniline	400 U	390 U	NA	NA	NA	NA
4-Chlorophenyl-phenylether	400 U	390 U	NA	NA	NA	NA
4-Methylphenol (p-Cresol)	400 U	390 U	NA	NA	NA	NA
4-Nitroaniline	1000 U	980 U	NA	NA	NA	NA
4-Nitrophenol	1000 U	980 U	NA	NA	NA	NA
Acenaphthene	400 U	390 U	NA	NA	NA	NA
Acenaphthylene	400 U	390 U	NA	NA	NA	NA
Acetophenone	400 U	390 U	NA	NA	NA	NA
Anthracene	400 U	390 U	NA	NA	NA	NA
Atrazine	400 U	390 U	NA	NA	NA	NA
Benzaldehyde	400 U	390 U	NA	NA	NA	NA
Benzo(a)anthracene	400 U	390 U	NA	NA	NA	NA
Benzo(a)pyrene	400 U	390 U	NA	NA	NA	NA
Benzo(b)fluoranthene	400 U	390 U	NA	NA	NA	NA
Benzo(g,h,i)perylene	400 U	390 U	NA	NA	NA	NA
Benzo(k)fluoranthene	400 U	390 U	NA	NA	NA	NA
Bis(2-chloroethoxy)methane	400 U	390 U	NA	NA	NA	NA
Bis(2-chloroethyl)ether	400 U	390 U	NA	NA	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP	400 U	2,100	NA	NA	NA	NA
Butyl Benzyl Phthalate	400 U	390 U	NA	NA	NA	NA
Caprolactam	400 U	390 U	NA	NA	NA	NA
Carbazole	400 U	390 U	NA	NA	NA	NA
Chrysene	400 U	390 U	NA	NA	NA	NA
Dibenz(a,h)anthracene	400 U	390 U	NA	NA	NA	NA
Dibenzofuran	400 U	390 U	NA	NA	NA	NA
Diethyl Phthalate (DEP)	400 U	390 U	NA	NA	NA	NA
Dimethyl Phthalate	400 U	390 U	NA	NA	NA	NA
Di-n-butyl Phthalate (DBP)	400 U	390 U	NA	NA	NA	NA
Di-n-octyl Phthalate	400 U	390 U	NA	NA	NA	NA
Fluoranthene	400 U	390 U	NA	NA	NA	NA
Fluorene	400 U	390 U	NA	NA	NA	NA
Hexachlorobenzene	400 U	390 U	NA	NA	NA	NA
Hexachlorobutadiene	400 U	390 U	NA	NA	NA	NA
Hexachlorocyclopentadiene	400 U	390 U	NA	NA	NA	NA
Hexachloroethane	400 U	390 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	400 U	390 U	NA	NA	NA	NA
Isophorone	400 U	390 U	NA	NA	NA	NA
Naphthalene	400 U	390 U	NA	NA	NA	NA

APPENDIX G (Continued)

FUTURE SURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)					
SAMPLE ID	SWMU318-SB23-00	SWMU318-SB24-00	SWMU318-SB25-00	SWMU318-SB26-00	SWMU318-SB25-00	SWMU318-SB28-00
SAMPLE DATE	2/3/2005	2/7/2005	2/8/2005	2/4/2005	2/8/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug						
Nitrobenzene	400 U	390 U	NA	NA	NA	NA
n-Nitrosodi-n-propylamine	400 U	390 U	NA	NA	NA	NA
n-Nitrosodiphenylamine	400 U	390 U	NA	NA	NA	NA
Pentachlorophenol	1000 U	980 U	NA	NA	NA	NA
Phenanthrene	400 U	390 U	NA	NA	NA	NA
Phenol	400 U	390 U	NA	NA	NA	NA
Pyrene	400 U	390 U	NA	NA	NA	NA
Metals (mg/kg)						
Arsenic	NA	2.3 U	NA	NA	NA	NA
Barium	NA	26.7 J	NA	NA	NA	NA
Cadmium	NA	1.4	NA	NA	NA	NA
Chromium	NA	17	NA	NA	NA	NA
Lead	NA	60.8	NA	NA	NA	NA
Mercury	NA	0.04 U	NA	NA	NA	NA
Selenium	NA	0.78 U	NA	NA	NA	NA
Silver	NA	0.13 U	NA	NA	NA	NA

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 303								
Sample ID	SWMU303-IS01-03	SWMU303-IS02-03	SWMU303-IS03-03	SWMU303-IS04-03	SWMU303-SB01-04	SWMU303-SB02-04	SWMU303-TW01-04	SWMU303-TW02-04	SWMU303-TW03-03
Date	09-09-1997	09-09-1997	09-09-1997	09-09-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002
Depth Range	6' - 8'	6' - 8'	6' - 8'	6' - 8'	7' - 9'	7' - 9'	7' - 9'	7' - 9'	5' - 7'
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane (TCA)	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
1,1-Dichloroethane	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
1,1-Dichloroethene	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane (EDB)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene (o-)	1.1 U	1.2 U	1.3 U	1.2 U	NA	NA	NA	NA	NA
1,2-Dichloroethane	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
1,2-Dichloroethene (cis)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene (m-)	1.1 U	1.2 U	1.3 U	1.2 U	NA	NA	NA	NA	NA
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropene (cis)	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
1,3-Dichloropropene (trans)	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
1,4-Dichlorobenzene (p-)	1.5	1.8	3.5	1.3	NA	NA	NA	NA	NA
2,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	21 U	14 J	130 U	250 U	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone (MBK)	21 U	24 U	130 U	250 U	NA	NA	NA	NA	NA
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	21 U	24 U	130 U	250 U	NA	NA	NA	NA	NA
Acetone	21 U	59	800	890	NA	NA	NA	NA	NA
Benzene	1.1 U	1.2 U	1.3 U	1.2 U	NA	NA	NA	NA	NA
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
Bromoform	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
Bromomethane	11 U	12 U	64 U	120 U	NA	NA	NA	NA	NA
Butylbenzene, sec-	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzene, tert-	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
Carbon Tetrachloride	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 303								
Sample ID	SWMU303-IS01-03	SWMU303-IS02-03	SWMU303-IS03-03	SWMU303-IS04-03	SWMU303-SB01-04	SWMU303-SB02-04	SWMU303-TW01-04	SWMU303-TW02-04	SWMU303-TW03-03
Date	09-09-1997	09-09-1997	09-09-1997	09-09-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002
Depth Range	6' - 8'	6' - 8'	6' - 8'	6' - 8'	7' - 9'	7' - 9'	7' - 9'	7' - 9'	5' - 7'
Volatile Organic Compounds (ug/kg) (Cont)									
Chlorobenzene	1.1 U	1.2 U	1.3 U	1.2 U	NA	NA	NA	NA	NA
Chloroethane	11 U	12 U	64 U	120 U	NA	NA	NA	NA	NA
Chloroform	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
Chloromethane	11 U	12 U	64 U	120 U	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1.1 U	1.2 U	1.3 U	1.2 U	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	5.3 U	1.9 J	32 U	62 U	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene (Ethenylbenzene)	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
Toluene	1.1 U	1.2 U	1.3 U	1.2 U	NA	NA	NA	NA	NA
Trichloroethene (TCE)	5.3 U	5.9 U	32 U	62 U	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	11 U	12 U	64 U	120 U	NA	NA	NA	NA	NA
Xylene, m/p-	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene, o-	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	1.1 U	1.2 U	1.3 U	1.2 U	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (ug/kg)									
1,1'-Biphenyl	NA	NA	NA	NA	430 U	400 U	380 U	410 U	430 U
2,2'-Oxybis[1-chloropropane]	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
2,4,5-Trichlorophenol	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
2,4,6-Trichlorophenol	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
2,4-Dichlorophenol	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
2,4-Dimethylphenol	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
2,4-Dinitrophenol	1700 U	1900 U	2000 U	2000 U	2200 U	2000 U	2000 U	2100 U	2200 U
2,4-Dinitrotoluene	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
2,6-Dinitrotoluene	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
2-Chloronaphthalene	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
2-Chlorophenol	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
2-Methylnaphthalene	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
2-Methylphenol (o-Cresol)	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
2-Nitroaniline	1700 U	1900 U	2000 U	2000 U	860 U	800 U	760 U	830 U	860 U
2-Nitrophenol	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
3,3'-Dichlorobenzidine	1700 U	1900 U	2000 U	2000 U	860 U	800 U	760 U	830 U	860 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 303								
Sample ID	SWMU303-IS01-03	SWMU303-IS02-03	SWMU303-IS03-03	SWMU303-IS04-03	SWMU303-SB01-04	SWMU303-SB02-04	SWMU303-TW01-04	SWMU303-TW02-04	SWMU303-TW03-03
Date	09-09-1997	09-09-1997	09-09-1997	09-09-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002
Depth Range	6' - 8'	6' - 8'	6' - 8'	6' - 8'	7' - 9'	7' - 9'	7' - 9'	7' - 9'	5' - 7'
Semivolatile Organic Compounds (ug/kg) (Cont									
3-Nitroaniline	1700 U	1900 U	2000 U	2000 U	860 U	800 U	760 U	830 U	860 U
4,6-Dinitro-2-methylphenol	1700 U	1900 U	2000 U	2000 U	860 U	800 U	760 U	830 U	860 U
4-Bromophenyl-phenylether	350 U	390 U	420 U	410 U	430 U	400 U	380 UJ	410 UJ	430 UJ
4-Chloro-3-methylphenol	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
4-Chloroaniline	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
4-Chlorophenyl-phenylether	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
4-Methylphenol (p-Cresol)	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
4-Nitroaniline	1700 U	1900 U	2000 U	2000 U	860 U	800 U	760 U	830 U	860 U
4-Nitrophenol	1700 U	1900 U	2000 U	2000 U	860 U	800 U	760 U	830 U	860 U
Acenaphthene	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Acenaphthylene	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Acetophenone	NA	NA	NA	NA	430 U	400 U	380 U	410 U	430 U
Anthracene	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Atrazine	NA	NA	NA	NA	430 U	400 U	380 U	410 U	430 U
Benzaldehyde	NA	NA	NA	NA	430 U	400 U	380 U	410 U	430 U
Benzo(a)anthracene	350 U	390 U	420 U	410 U	430 U	400 U	150 J	410 U	39 J
Benzo(a)pyrene	350 U	390 U	420 U	410 U	430 U	400 U	250 J	410 U	85 J
Benzo(b)fluoranthene	350 U	390 U	420 U	410 U	430 U	400 U	330 J	410 U	92 J
Benzo(g,h,i)perylene	350 U	390 U	420 U	410 U	430 U	400 U	180 J	410 U	68 J
Benzo(k)fluoranthene	350 U	390 U	420 U	410 U	430 U	400 U	270 J	410 U	110 J
Bis(2-chloroethoxy)methane	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Bis(2-chloroethyl)ether	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Bis(2-ethylhexyl) Phthalate (BEHP	340 J	110 J	100 J	82 J	90 J	180 J	72 J	410 U	240 J
Butyl Benzyl Phthalate	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Caprolactam	NA	NA	NA	NA	430 UJ	400 U	380 U	410 U	430 U
Carbazole	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Chrysene	350 U	390 U	420 U	410 U	430 U	400 U	200 J	410 U	72 J
Dibenz(a,h)anthracene	350 U	390 U	420 U	410 U	430 U	400 U	84 J	410 U	430 U
Dibenzofuran	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Diethyl Phthalate (DEP)	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Dimethyl Phthalate	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Di-n-butyl Phthalate (DBP)	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Di-n-octyl Phthalate	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	280 J
Fluoranthene	350 U	390 U	420 U	410 U	430 U	400 U	240 J	410 U	39 J
Fluorene	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Hexachlorobenzene	350 U	390 U	420 U	410 U	430 U	400 U	380 UJ	410 UJ	430 UJ
Hexachlorobutadiene	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Hexachlorocyclopentadiene	1700 U	1900 U	2000 U	2000 U	430 UJ	400 U	380 U	410 U	430 U
Hexachloroethane	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Indeno(1,2,3-cd)pyrene	350 U	390 U	420 U	410 U	430 U	400 U	360 J	410 U	130 J
Isophorone	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Naphthalene	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Nitrobenzene	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 303								
Sample ID	SWMU303-IS01-03	SWMU303-IS02-03	SWMU303-IS03-03	SWMU303-IS04-03	SWMU303-SB01-04	SWMU303-SB02-04	SWMU303-TW01-04	SWMU303-TW02-04	SWMU303-TW03-03
Date	09-09-1997	09-09-1997	09-09-1997	09-09-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002
Depth Range	6' - 8'	6' - 8'	6' - 8'	6' - 8'	7' - 9'	7' - 9'	7' - 9'	7' - 9'	5' - 7'
Semivolatile Organic Compounds (ug/kg) (Cont									
n-Nitrosodi-n-propylamine	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
n-Nitrosodiphenylamine	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Pentachlorophenol	1700 U	1900 U	2000 U	2000 U	860 U	800 U	760 U	830 U	860 U
Phenanthrene	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Phenol	350 U	390 U	420 U	410 U	430 U	400 U	380 U	410 U	430 U
Pyrene	350 U	390 U	420 U	410 U	430 U	400 U	220 J	410 U	55 J
Metals (mg/kg)									
Arsenic	5.9	1.5	3.7	3.3	3 J	2.1	1.3	3.6	0.3 U
Barium	21.3 U	47.4	25.5 U	24.8 U	12.9	49.1	41.2	17	11.3
Cadmium	0.53 U	0.59 U	1.5	0.62 U	0.12 J	0.11 J	1	0.037 U	0.037 U
Chromium	13.4	6.7	33.9	15.8	14.2	10.1	10.3 J	7.2 J	7.5 J
Lead	6.9	3.3	21.2	7.8	9.5	4	13.4	3.7	4.2
Mercury	0.035 U	0.039 U	0.042 U	0.041 U	0.034 J	0.027 J	0.023 U	0.02 U	0.023 U
Selenium	0.66	0.59 U	0.64 U	0.79	0.58 U	0.55 U	0.52 U	0.57 U	0.57 U
Silver	1.1 U	1.2 U	1.3 U	1.2 U	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318								
Sample ID	SWMU318-TW01-04	SWMU318-TW02-04	SWMU318-TW03-04	SWMU318-SB01-03	SWMU318-SB01-04	SWMU318-SB02-01	SWMU318-SB02-04	SWMU318-SB03-01	SWMU318-SB03-04
Date	03-20-2002	03-20-2002	03-19-2002	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/19/2004
Depth Range	7' - 9'	7' - 9'	7' - 9'	5-7	7-9	1-3	7-9	1-3	7-9
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	NA	NA	NA	13 U	15 U	NA	133 U	11 U	3 J
1,1,1-Trichloroethane (TCA)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,1,2,2-Tetrachloroethane	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,1,2-Trichloro-1,2,2-trifluoroethane	7 U	8 U	6 U	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	7 U	93	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,1-Dichloroethane	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,1-Dichloroethene	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,1-Dichloropropene	NA	NA	NA	13 U	15 U	NA	133 U	11 U	11 U
1,2,3-Trichlorobenzene	NA	NA	NA	13 U	15 U	NA	133 U	11 U	4 J
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	6 J
1,2,4-Trimethylbenzene	NA	NA	NA	13 U	15 U	NA	133 U	11 U	3 J
1,2-Dibromo-3-chloropropane (DBCP)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,2-Dibromoethane (EDB)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,2-Dichlorobenzene (o-)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,2-Dichloroethane	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,2-Dichloroethene (cis)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,2-Dichloropropane	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,3,5-Trimethylbenzene	NA	NA	NA	13 U	15 U	NA	133 U	11 U	46
1,3-Dichlorobenzene (m-)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,3-Dichloropropane	NA	NA	NA	13 U	15 U	NA	133 U	11 U	11 U
1,3-Dichloropropene (cis)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,3-Dichloropropene (trans)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
1,4-Dichlorobenzene (p-)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
2,2-Dichloropropane	NA	NA	NA	13 U	15 U	NA	133 U	11 U	11 U
2-Butanone (MEK)	8 J	9 J	5 J	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	NA	NA	13 U	15 U	NA	133 U	11 U	11 U
2-Hexanone (MBK)	17 U	300	14 U	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	NA	NA	NA	13 U	15 U	NA	133 U	11 U	11 U
4-Isopropyltoluene	NA	NA	NA	13 U	15 U	NA	133 U	11 U	46
4-Methyl-2-pentanone (MIBK)	17 U	20 U	14 U	NA	NA	NA	NA	NA	NA
Acetone	28	57	24 J	NA	NA	NA	NA	NA	NA
Benzene	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
Bromobenzene	NA	NA	NA	13 U	15 U	NA	133 U	11 U	11 U
Bromochloromethane	NA	NA	NA	13 U	15 U	NA	133 U	11 U	11 U
Bromodichloromethane	7 U	2 J	6 U	13 U	15 U	NA	133 U	11 U	11 U
Bromoform	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	5 J
Bromomethane	7 UJ	8 UJ	6 U	13 U	15 U	NA	133 U	11 U	11 U
Butylbenzene, sec-	NA	NA	NA	13 U	15 U	NA	133 U	11 U	17
Butylbenzene, tert-	NA	NA	NA	13 U	15 U	NA	133 U	11 U	11 U
Carbon Disulfide	7 U	8 U	3 J	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318								
Sample ID	SWMU318-TW01-04	SWMU318-TW02-04	SWMU318-TW03-04	SWMU318-SB01-03	SWMU318-SB01-04	SWMU318-SB02-01	SWMU318-SB02-04	SWMU318-SB03-01	SWMU318-SB03-04
Date	03-20-2002	03-20-2002	03-19-2002	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/19/2004
Depth Range	7' - 9'	7' - 9'	7' - 9'	5-7	7-9	1-3	7-9	1-3	7-9
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
Chloroethane	7 U	8 U	6 UJ	13 U	15 U	NA	133 U	11 U	11 U
Chloroform	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
Chloromethane	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
Cyclohexane	7 U	12	6 U	NA	NA	NA	NA	NA	NA
Dibromochloromethane	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
Dibromomethane	NA	NA	NA	13 U	15 U	NA	133 U	11 U	11 U
Dichlorodifluoromethane (Freon-12)	7 U	8 U	6 UJ	13 U	15 U	NA	133 U	11 U	11 U
Ethylbenzene	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
Hexachlorobutadiene	NA	NA	NA	13 U	15 U	NA	133 U	11 U	7 J
Isopropylbenzene (Cumene)	7 U	15	6 U	13 U	15 U	NA	133 U	11 U	549 U
Methyl Acetate	7 U	8 U	6 U	NA	NA	NA	NA	NA	NA
Methyl Cyclohexane	7 U	10	6 U	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	7 U	8 U	6 U	NA	NA	NA	NA	NA	NA
Methylene Chloride	33	32	1 J	13 U	15 U	NA	133 U	11 U	11 U
Naphthalene	NA	NA	NA	13 U	15 U	NA	320	11 U	3630
n-Butylbenzene	NA	NA	NA	13 U	15 U	NA	133 U	11 U	1230
n-Propylbenzene	NA	NA	NA	13 U	15 U	NA	133 U	11 U	11 U
Styrene (Ethenylbenzene)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	2 J
Tetrachloroethene (PCE)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
Toluene	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	3 J
Trichloroethene (TCE)	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
Trichlorofluoromethane	7 U	8 U	6 U	NA	NA	NA	NA	NA	NA
Vinyl Chloride	7 U	8 U	6 U	13 U	15 U	NA	133 U	11 U	11 U
Xylene, m/p-	NA	NA	NA	27 U	30 U	NA	267 U	23 U	3 J
Xylene, o-	NA	NA	NA	13 U	15 U	NA	133 U	11 U	4 J
Xylenes, total	21 UJ	24 UJ	17 UJ	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
2,2'-Oxybis[1-chloropropane]	420 U	500 U	410 U	NA	440 U	380 U	440 UJ	380 U	NA
2,4,5-Trichlorophenol	420 U	500 U	410 U	NA	1100 U	950 U	1100 U	970 U	NA
2,4,6-Trichlorophenol	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
2,4-Dichlorophenol	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
2,4-Dimethylphenol	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
2,4-Dinitrophenol	2200 U	2600 U	2100 U	NA	1100 U	950 U	1100 U	970 U	NA
2,4-Dinitrotoluene	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
2,6-Dinitrotoluene	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
2-Chloronaphthalene	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
2-Chlorophenol	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
2-Methylnaphthalene	420 UJ	500 UJ	410 UJ	NA	440 U	380 U	440 U	380 U	NA
2-Methylphenol (o-Cresol)	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
2-Nitroaniline	840 U	1000 U	830 U	NA	1100 U	950 U	1100 UJ	970 U	NA
2-Nitrophenol	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
3,3'-Dichlorobenzidine	840 U	1000 U	830 U	NA	440 U	380 U	440 U	380 U	NA

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318								
Sample ID	SWMU318-TW01-04	SWMU318-TW02-04	SWMU318-TW03-04	SWMU318-SB01-03	SWMU318-SB01-04	SWMU318-SB02-01	SWMU318-SB02-04	SWMU318-SB03-01	SWMU318-SB03-04
Date	03-20-2002	03-20-2002	03-19-2002	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/19/2004
Depth Range	7' - 9'	7' - 9'	7' - 9'	5-7	7-9	1-3	7-9	1-3	7-9
Semivolatile Organic Compounds (ug									
3-Nitroaniline	840 U	1000 U	830 U	NA	1100 UJ	950 U	1100 U	970 U	NA
4,6-Dinitro-2-methylphenol	840 U	1000 U	830 U	NA	1100 U	950 U	1100 U	970 U	NA
4-Bromophenyl-phenylether	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
4-Chloro-3-methylphenol	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
4-Chloroaniline	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
4-Chlorophenyl-phenylether	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
4-Methylphenol (p-Cresol)	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
4-Nitroaniline	840 U	1000 U	830 U	NA	1100 UJ	950 U	1100 U	970 U	NA
4-Nitrophenol	840 U	1000 U	830 U	NA	1100 U	950 U	1100 U	970 U	NA
Acenaphthene	420 U	500 U	410 U	NA	20 J	380 U	440 U	380 U	NA
Acenaphthylene	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Acetophenone	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Anthracene	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Atrazine	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Benzaldehyde	420 U	500 U	410 U	NA	440 U	380 U	440 U	23 J	NA
Benzo(a)anthracene	420 U	500 U	410 U	NA	68 J	380 U	440 U	380 U	NA
Benzo(a)pyrene	420 U	500 U	410 U	NA	54 J	380 U	440 U	380 U	NA
Benzo(b)fluoranthene	420 U	500 U	410 U	NA	68 J	380 U	440 U	380 U	NA
Benzo(g,h,i)perylene	420 U	500 U	410 U	NA	440 U	380 UJ	440 U	380 UJ	NA
Benzo(k)fluoranthene	420 U	500 U	410 U	NA	50 J	380 U	440 U	380 U	NA
Bis(2-chloroethoxy)methane	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Bis(2-chloroethyl)ether	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Bis(2-ethylhexyl) Phthalate (BEHP	380 J	370 J	660 J	NA	440 U	380 U	440 UJ	380 U	NA
Butyl Benzyl Phthalate	420 U	500 U	410 U	NA	440 U	380 U	440 UJ	380 U	NA
Caprolactam	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Carbazole	420 U	500 U	410 U	NA	440 UJ	380 U	440 UJ	380 U	NA
Chrysene	420 U	500 U	410 U	NA	68 J	380 U	440 U	380 U	NA
Dibenz(a,h)anthracene	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Dibenzofuran	420 U	130 J	410 U	NA	14 J	380 U	440 U	380 U	NA
Diethyl Phthalate (DEP)	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Dimethyl Phthalate	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Di-n-butyl Phthalate (DBP)	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Di-n-octyl Phthalate	420 U	500 U	25 J	NA	440 U	380 U	440 UJ	380 U	NA
Fluoranthene	420 U	500 U	410 U	NA	120 J	380 U	440 U	380 U	NA
Fluorene	420 U	59 J	410 U	NA	17 J	380 U	440 U	380 U	NA
Hexachlorobenzene	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Hexachlorobutadiene	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Hexachlorocyclopentadiene	420 UJ	500 UJ	410 UJ	NA	440 U	380 UJ	440 UJ	380 UJ	NA
Hexachloroethane	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Indeno(1,2,3-cd)pyrene	420 U	500 U	410 U	NA	28 J	380 U	440 U	380 U	NA
Isophorone	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Naphthalene	420 U	500 U	410 U	NA	45 J	180 J	23 J	18 J	NA
Nitrobenzene	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318								
Sample ID	SWMU318-TW01-04	SWMU318-TW02-04	SWMU318-TW03-04	SWMU318-SB01-03	SWMU318-SB01-04	SWMU318-SB02-01	SWMU318-SB02-04	SWMU318-SB03-01	SWMU318-SB03-04
Date	03-20-2002	03-20-2002	03-19-2002	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/19/2004
Depth Range	7' - 9'	7' - 9'	7' - 9'	5-7	7-9	1-3	7-9	1-3	7-9
Semivolatile Organic Compounds (ug									
n-Nitrosodi-n-propylamine	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
n-Nitrosodiphenylamine	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Pentachlorophenol	840 U	1000 U	830 U	NA	1100 U	950 U	1100 U	970 U	NA
Phenanthrene	420 U	500 U	410 U	NA	18 J	380 U	440 U	380 U	NA
Phenol	420 U	500 U	410 U	NA	440 U	380 U	440 U	380 U	NA
Pyrene	420 U	500 U	410 U	NA	120 J	380 U	440 U	380 U	NA
Metals (mg/kg)									
Arsenic	2	2.4	4.8 J	NA	1.4 J	1.4	10.2	3.1	NA
Barium	22	19.7	30	NA	15.9 J	16.05 J	9.4 J	15.3 J	NA
Cadmium	0.066 J	0.045 U	0.037 U	NA	0.14 J	0.1 J	0.05 U	0.05 U	NA
Chromium	23.3	24.1	4.1	NA	14.6 J	6.7 J	11.1 J	10.2 J	NA
Lead	11.7 J	11.6 J	1 J	NA	11	9.2	7.5	8.6	NA
Mercury	0.027 J	0.024 J	0.02 U	NA	0.07 J	0.045 J	0.03 J	0.06 J	NA
Selenium	0.56 U	0.69 U	0.57 U	NA	0.5 UJ	0.735 J	0.47 UJ	0.86 J	NA
Silver	0.11 U	0.14 U	0.11 U	NA	0.25 UJ	0.2 UJ	0.24 UJ	0.22 UJ	NA

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB04-01	SWMU318-SB04-02	SWMU318-SB04-04	SWMU318-SB05-02	SWMU318-SB05-03	SWMU318-SB06-01	SWMU318-SB06-02	SWMU318-SB06-04	SWMU318-SB07-02
Date	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/20/2004
Depth Range	1-3	3-5	7-9	3-5	5-7	1-3	3-5	7-9	3-5
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,1,1-Trichloroethane (TCA)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,1,2,2-Tetrachloroethane	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10 UJ	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,1-Dichloroethane	10 UJ	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,1-Dichloroethene	10 UJ	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,1-Dichloropropene	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,2,3-Trichlorobenzene	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,2,4-Trimethylbenzene	15	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	3.2 J
1,2-Dibromo-3-chloropropane (DBCP)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,2-Dibromoethane (EDB)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,2-Dichlorobenzene (o-)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.6
1,2-Dichloroethane	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,2-Dichloroethene (cis)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	2.2 J
1,2-Dichloroethene (total)	10 U	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,2-Dichloropropane	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,3,5-Trimethylbenzene	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,3-Dichlorobenzene (m-)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,3-Dichloropropane	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,3-Dichloropropene (cis)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,3-Dichloropropene (trans)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
1,4-Dichlorobenzene (p-)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
2,2-Dichloropropane	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
2-Butanone (MEK)	10 UJ	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
2-Hexanone (MBK)	10 UJ	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
4-Isopropyltoluene	14	13 U	13 U	12.5 U	12 U	NA	124 U	16	6.2 U
4-Methyl-2-pentanone (MIBK)	10 U	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	12 UJ	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Bromobenzene	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Bromochloromethane	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Bromodichloromethane	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Bromoform	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Bromomethane	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	12 U
Butylbenzene, sec-	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Butylbenzene, tert-	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Carbon Disulfide	10 UJ	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB04-01	SWMU318-SB04-02	SWMU318-SB04-04	SWMU318-SB05-02	SWMU318-SB05-03	SWMU318-SB06-01	SWMU318-SB06-02	SWMU318-SB06-04	SWMU318-SB07-02
Date	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/20/2004
Depth Range	1-3	3-5	7-9	3-5	5-7	1-3	3-5	7-9	3-5
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Chloroethane	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	12 U
Chloroform	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Chloromethane	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	12 U
Cyclohexane	10 U	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Dibromomethane	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Dichlorodifluoromethane (Freon-12	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Ethylbenzene	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Hexachlorobutadiene	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Isopropylbenzene (Cumene)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Methyl Acetate	19 J	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Cyclohexane	10 U	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE	10 U	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	12 U
Naphthalene	84	13 U	13 U	12.5 U	12 U	NA	115.5	59	14
n-Butylbenzene	6	13 U	13 U	12.5 U	12 U	NA	124 U	9 J	3.2 J
n-Propylbenzene	5.9 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Styrene (Ethenylbenzene)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Tetrachloroethene (PCE)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Toluene	0.9 J	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Trichloroethene (TCE)	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	6.2 U
Trichlorofluoromethane	10 UJ	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	10 U	13 U	13 U	12.5 U	12 U	NA	124 U	14 U	12 U
Xylene, m/p-	10 U	27 U	25 U	2.5 J	3 J	NA	248.5 U	29 U	6.2 U
Xylene, o-	10 U	13 U	13 U	5.25 J	3 J	NA	124 U	14 U	6.2 U
Xylenes, total	10 U	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
2,2'-Oxybis[1-chloropropane]	NA	490 U	410 U	415 UJ	400 UJ	415 U	430 UJ	NA	420 UJ
2,4,5-Trichlorophenol	NA	1200 U	1000 U	1050 U	1000 U	1000 U	1100 U	NA	1100 U
2,4,6-Trichlorophenol	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
2,4-Dichlorophenol	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
2,4-Dimethylphenol	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
2,4-Dinitrophenol	NA	1200 U	1000 U	1050 U	1000 U	1000 U	1100 U	NA	1100 U
2,4-Dinitrotoluene	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
2,6-Dinitrotoluene	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
2-Chloronaphthalene	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
2-Chlorophenol	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
2-Methylnaphthalene	NA	490 U	410 U	415 UJ	400 U	415 U	430 U	NA	420 U
2-Methylphenol (o-Cresol)	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
2-Nitroaniline	NA	1200 U	1000 U	1050 UJ	1000 UJ	1000 UJ	1100 UJ	NA	1100 UJ
2-Nitrophenol	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
3,3'-Dichlorobenzidine	NA	490 U	410 U	415 U	87 J	415 U	430 U	NA	420 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

					SWMU 318 (Cont)				
Sample ID	SWMU318-SB04-01	SWMU318-SB04-02	SWMU318-SB04-04	SWMU318-SB05-02	SWMU318-SB05-03	SWMU318-SB06-01	SWMU318-SB06-02	SWMU318-SB06-04	SWMU318-SB07-02
Date	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/20/2004
Depth Range	1-3	3-5	7-9	3-5	5-7	1-3	3-5	7-9	3-5
Semivolatile Organic Compounds (ug/									
3-Nitroaniline	NA	1200 U	1000 U	1050 U	1000 U	1000 U	1100 U	NA	1100 U
4,6-Dinitro-2-methylpheno	NA	1200 U	1000 U	1050 U	1000 U	1000 U	1100 U	NA	1100 U
4-Bromophenyl-phenylethe	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
4-Chloro-3-methylphenol	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
4-Chloroaniline	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
4-Chlorophenyl-phenylethe	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
4-Methylphenol (p-Cresol)	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
4-Nitroaniline	NA	1200 U	1000 U	1050 U	1000 U	1000 U	1100 U	NA	1100 U
4-Nitrophenol	NA	1200 U	1000 U	1050 U	1000 U	1000 U	1100 U	NA	1100 U
Acenaphthene	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Acenaphthylene	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Acetophenone	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Anthracene	NA	490 U	410 U	415 U	31 J	415 U	430 U	NA	420 U
Atrazine	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Benzaldehyde	NA	490 U	410 U	415 U	18 J	31 J	430 U	NA	420 U
Benzo(a)anthracene	NA	42 J	410 U	415 U	1200	415 U	430 U	NA	420 U
Benzo(a)pyrene	NA	43 J	410 U	415 U	820	415 U	430 U	NA	420 U
Benzo(b)fluoranthene	NA	72 J	410 U	415 U	1500	415 U	430 U	NA	420 U
Benzo(g,h,i)perylene	NA	490 UJ	410 UJ	415 U	130 J	415 U	430 U	NA	420 U
Benzo(k)fluoranthene	NA	39 J	410 U	415 U	1200	415 U	430 U	NA	420 U
Bis(2-chloroethoxy)methane	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Bis(2-chloroethyl)ethe	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Bis(2-ethylhexyl) Phthalate (BEHP	NA	490 U	410 U	415 UJ	400 UJ	415 UJ	430 UJ	NA	420 UJ
Butyl Benzyl Phthalate	NA	490 U	410 U	415 UJ	400 U	415 UJ	430 UJ	NA	420 UJ
Caprolactam	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Carbazole	NA	490 U	410 U	415 UJ	65 J	415 UJ	430 UJ	NA	420 UJ
Chrysene	NA	50 J	410 U	415 U	1900	415 U	430 U	NA	420 U
Dibenz(a,h)anthracene	NA	490 U	410 U	415 U	180 J	415 U	430 U	NA	420 U
Dibenzofuran	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Diethyl Phthalate (DEP)	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Dimethyl Phthalate	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Di-n-butyl Phthalate (DBP)	NA	490 U	410 U	415 UJ	4600 D	415 U	430 U	NA	420 U
Di-n-octyl Phthalate	NA	490 U	410 U	415 UJ	400 UJ	415 UJ	430 UJ	NA	420 UJ
Fluoranthene	NA	67 J	410 U	415 U	3000	415 U	430 U	NA	420 U
Fluorene	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Hexachlorobenzene	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Hexachlorobutadiene	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Hexachlorocyclopentadiene	NA	490 UJ	410 UJ	415 U	400 UJ	415 UJ	430 UJ	NA	420 UJ
Hexachloroethane	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Indeno(1,2,3-cd)pyrene	NA	32 J	410 U	415 U	440	415 U	430 U	NA	420 U
Isophorone	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Naphthalene	NA	490 U	410 U	415 U	400 U	295 J	89 J	NA	420 U
Nitrobenzene	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB04-01	SWMU318-SB04-02	SWMU318-SB04-04	SWMU318-SB05-02	SWMU318-SB05-03	SWMU318-SB06-01	SWMU318-SB06-02	SWMU318-SB06-04	SWMU318-SB07-02
Date	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/16/2004	3/20/2004
Depth Range	1-3	3-5	7-9	3-5	5-7	1-3	3-5	7-9	3-5
Semivolatile Organic Compounds (ug									
n-Nitrosodi-n-propylamine	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
n-Nitrosodiphenylamine	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Pentachlorophenol	NA	1200 U	1000 U	1050 U	1000 U	1000 U	1100 U	NA	1100 U
Phenanthrene	NA	490 U	410 U	415 U	170 J	415 U	430 U	NA	420 U
Phenol	NA	490 U	410 U	415 U	400 U	415 U	430 U	NA	420 U
Pyrene	NA	68 J	410 U	415 U	2200	415 U	430 U	NA	420 U
Metals (mg/kg)									
Arsenic	NA	51	1.6 J	4.9	1.9	1.3 J	1.1 J	NA	1.6
Barium	NA	21.4 J	4.8 J	20.8 J	16.2 J	14.25 J	23.5 J	NA	19.1
Cadmium	NA	0.07 U	0.05 U	0.195 J	0.37 J	0.075 J	0.05 U	NA	1.8 U
Chromium	NA	34 J	6.7 J	15.9	8.1	6.15 J	14 J	NA	8
Lead	NA	14.8	6.7	36 J	12.2 J	9.8	15.8	NA	10.1
Mercury	NA	0.07 J	0.03 J	0.06 J	0.04 J	0.05 J	0.11	NA	0.05 J
Selenium	NA	0.89 J	0.77 J	0.355 J	0.62 J	0.825 J	0.6 J	NA	0.64 J
Silver	NA	0.3 UJ	0.25 UJ	0.195 U	0.2 U	0.23 UJ	0.23 UJ	NA	0.21 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB07-04	SWMU318-SB08-02	SWMU318-SB08-04	SWMU318-SB09-02	SWMU318-SB09-03	SWMU318-SB10-02	SWMU318-SB10-03	SWMU318-SB11-01	SWMU318-SB11-03
Date	3/20/2004	3/20/2004	3/20/2004	3/22/2004	3/22/2004	3/23/2004	3/23/2004	3/22/2004	3/22/2004
Depth Range	7-9	3-5	7-9	3-5	5-7	3-5	5-7	1-3	5-7
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,1,1-Trichloroethane (TCA)	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,1,2,2-Tetrachloroethane	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,1-Dichloroethane	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,1-Dichloroethene	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,1-Dichloropropene	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,2,3-Trichlorobenzene	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,2,4-Trimethylbenzene	2 J	23	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	61
1,2-Dibromo-3-chloropropane (DBCP)	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,2-Dibromoethane (EDB)	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,2-Dichlorobenzene (o-)	14 U	6.3 U	6.3 U	6 U	4 J	6.3 U	7.6 U	5.9 U	6.15 U
1,2-Dichloroethane	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,2-Dichloroethene (cis)	4 J	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,2-Dichloropropane	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,3,5-Trimethylbenzene	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	2.875 J
1,3-Dichlorobenzene (m-)	41	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,3-Dichloropropane	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,3-Dichloropropene (cis)	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,3-Dichloropropene (trans)	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
1,4-Dichlorobenzene (p-)	7 J	6.3 U	6.3 U	6 U	6.3	6.3 U	7.6 U	5.9 U	6.15 U
2,2-Dichloropropane	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
2-Butanone (MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
2-Hexanone (MBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
4-Isopropyltoluene	7 J	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	12.95
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Bromobenzene	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Bromochloromethane	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Bromodichloromethane	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Bromoform	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Bromomethane	14 U	13 U	13 U	12 U	6 U	13 U	15 U	12 U	12 U
Butylbenzene, sec-	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	23.85
Butylbenzene, tert-	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB07-04	SWMU318-SB08-02	SWMU318-SB08-04	SWMU318-SB09-02	SWMU318-SB09-03	SWMU318-SB10-02	SWMU318-SB10-03	SWMU318-SB11-01	SWMU318-SB11-03
Date	3/20/2004	3/20/2004	3/20/2004	3/22/2004	3/22/2004	3/23/2004	3/23/2004	3/22/2004	3/22/2004
Depth Range	7-9	3-5	7-9	3-5	5-7	3-5	5-7	1-3	5-7
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	14 U	6.3 U	6.3 U	6 U	17	6.3 U	7.6 U	5.9 U	6.15 U
Chloroethane	14 U	13 U	13 U	12 U	12 U	13 U	15 U	12 U	12 U
Chloroform	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Chloromethane	14 U	13 U	13 U	12 U	12 U	13 U	15 U	12 U	12 U
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Dibromomethane	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Dichlorodifluoromethane (Freon-12)	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Ethylbenzene	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Hexachlorobutadiene	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Isopropylbenzene (Cumene)	39	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	14 U	13 U	13 U	12 U	12 U	13 U	15 U	12 U	12 U
Naphthalene	243 E	120	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	250
n-Butylbenzene	80	27	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	414.5
n-Propylbenzene	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	2.85 J
Styrene (Ethenylbenzene)	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Tetrachloroethene (PCE)	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Toluene	4 J	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Trichloroethene (TCE)	14 U	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	6.15 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	14 U	13 U	13 U	12 U	12 U	13 U	15 U	12 U	12 U
Xylene, m/p-	28 U	6.3 U	6.3 U	6 U	6 U	2.7 J	3.5 J	5.9 U	3 J
Xylene, o-	5 J	6.3 U	6.3 U	6 U	6 U	6.3 U	7.6 U	5.9 U	2.9 J
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
2,2'-Oxybis[1-chloropropane]	NA	NA	450 UJ	390 U	NA	NA	470 U	380 U	430 U
2,4,5-Trichlorophenol	NA	NA	1100 U	980 U	NA	NA	1200 U	960 U	1100 U
2,4,6-Trichlorophenol	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
2,4-Dichlorophenol	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
2,4-Dimethylphenol	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
2,4-Dinitrophenol	NA	NA	1100 U	980 U	NA	NA	1200 U	960 U	1100 U
2,4-Dinitrotoluene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
2,6-Dinitrotoluene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
2-Chloronaphthalene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
2-Chlorophenol	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
2-Methylnaphthalene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
2-Methylphenol (o-Cresol)	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
2-Nitroaniline	NA	NA	1100 UJ	980 U	NA	NA	1200 U	960 U	1100 U
2-Nitrophenol	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
3,3'-Dichlorobenzidine	NA	NA	450 U	390 UJ	NA	NA	470 UJ	380 UJ	430 UJ

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

					SWMU 318 (Cont)				
Sample ID	SWMU318-SB07-04	SWMU318-SB08-02	SWMU318-SB08-04	SWMU318-SB09-02	SWMU318-SB09-03	SWMU318-SB10-02	SWMU318-SB10-03	SWMU318-SB11-01	SWMU318-SB11-03
Date	3/20/2004	3/20/2004	3/20/2004	3/22/2004	3/22/2004	3/23/2004	3/23/2004	3/22/2004	3/22/2004
Depth Range	7-9	3-5	7-9	3-5	5-7	3-5	5-7	1-3	5-7
Semivolatile Organic Compounds (ug									
3-Nitroaniline	NA	NA	1100 U	980 U	NA	NA	1200 U	960 U	1100 U
4,6-Dinitro-2-methylphenol	NA	NA	1100 U	980 U	NA	NA	1200 U	960 U	1100 U
4-Bromophenyl-phenylether	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
4-Chloro-3-methylphenol	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
4-Chloroaniline	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
4-Chlorophenyl-phenylether	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
4-Methylphenol (p-Cresol)	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
4-Nitroaniline	NA	NA	1100 U	980 UJ	NA	NA	1200 UJ	960 UJ	1100 UJ
4-Nitrophenol	NA	NA	1100 U	980 U	NA	NA	1200 U	960 U	1100 U
Acenaphthene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Acenaphthylene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Acetophenone	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Anthracene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Atrazine	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Benzaldehyde	NA	NA	450 U	390 U	NA	NA	470 UJ	380 U	430 U
Benzo(a)anthracene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Benzo(a)pyrene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Benzo(b)fluoranthene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Benzo(g,h,i)perylene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Benzo(k)fluoranthene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Bis(2-chloroethoxy)methane	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Bis(2-chloroethyl)ether	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Bis(2-ethylhexyl) Phthalate (BEHP	NA	NA	450 UJ	390 U	NA	NA	470 U	380 U	430 U
Butyl Benzyl Phthalate	NA	NA	450 UJ	390 U	NA	NA	470 U	380 U	430 U
Caprolactam	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Carbazole	NA	NA	450 UJ	390 U	NA	NA	470 U	380 U	430 U
Chrysene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Dibenz(a,h)anthracene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Dibenzofuran	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Diethyl Phthalate (DEP)	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Dimethyl Phthalate	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Di-n-butyl Phthalate (DBP)	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Di-n-octyl Phthalate	NA	NA	450 UJ	390 U	NA	NA	470 U	380 U	430 U
Fluoranthene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Fluorene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Hexachlorobenzene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Hexachlorobutadiene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Hexachlorocyclopentadiene	NA	NA	450 UJ	390 U	NA	NA	470 U	380 U	430 U
Hexachloroethane	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Indeno(1,2,3-cd)pyrene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Isophorone	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Naphthalene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	580
Nitrobenzene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB07-04	SWMU318-SB08-02	SWMU318-SB08-04	SWMU318-SB09-02	SWMU318-SB09-03	SWMU318-SB10-02	SWMU318-SB10-03	SWMU318-SB11-01	SWMU318-SB11-03
Date	3/20/2004	3/20/2004	3/20/2004	3/22/2004	3/22/2004	3/23/2004	3/23/2004	3/22/2004	3/22/2004
Depth Range	7-9	3-5	7-9	3-5	5-7	3-5	5-7	1-3	5-7
Semivolatile Organic Compounds (ug									
n-Nitrosodi-n-propylamine	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
n-Nitrosodiphenylamine	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Pentachlorophenol	NA	NA	1100 U	980 U	NA	NA	1200 U	960 U	1100 U
Phenanthrene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Phenol	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Pyrene	NA	NA	450 U	390 U	NA	NA	470 U	380 U	430 U
Metals (mg/kg)									
Arsenic	NA	NA	4.5	0.44 U	NA	NA	5	2 J	1.4 J
Barium	NA	NA	11.5	6.2 J	NA	NA	21.7 J	59.8	9.1 J
Cadmium	NA	NA	1.8 U	0.05 U	NA	NA	0.06 U	0.99 U	0.05 U
Chromium	NA	NA	15.5	7	NA	NA	29.8	6.2	3
Lead	NA	NA	7.8	3.8 J	NA	NA	14.4 J	13.7 J	5.3 J
Mercury	NA	NA	0.03 J	0.01 U	NA	NA	0.06 J	0.05 J	0.04 J
Selenium	NA	NA	0.48 J	0.48 U	NA	NA	0.53 U	1.1	0.68 J
Silver	NA	NA	0.21 U	0.24 U	NA	NA	0.27 U	0.23 U	0.25 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB12-01	SWMU318-SB12-04	SWMU318-SB13-01	SWMU318-SB13-03	SWMU318-SB14-01	SWMU318-SB14-02	SWMU318-SB14-03	SWMU318-SB15-01	SWMU318-SB15-02
Date	3/22/2004	3/22/2004	3/23/2004	3/23/2004	2/5/2005	2/5/2005	2/5/2005	2/5/2005	2/5/2005
Depth Range	1-3	7-9	1-3	5-7	1-3	3-5	5-7	1-3	3-5
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
1,1,1-Trichloroethane (TCA)	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
1,1,2,2-Tetrachloroethane	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
1,1-Dichloroethane	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
1,1-Dichloroethene	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
1,1-Dichloropropene	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
1,2,3-Trichlorobenzene	5.8 U	6.4 U	6.1 U	7.7 U	0.79 J	0.66 J	0.73 J	0.53 J	0.68 J
1,2,3-Trichloropropane	NA	NA	NA	NA	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
1,2,4-Trichlorobenzene	5.8 U	6.4 U	6.1 U	7.7 U	0.64 J	0.52 J	0.57 J	0.54 J	0.44 J
1,2,4-Trimethylbenzene	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
1,2-Dibromo-3-chloropropane (DBCP)	5.8 U	6.4 U	6.1 U	7.7 U	6 U	6.0532688 U	6.9541029 U	5.5555556 U	6 U
1,2-Dibromoethane (EDB)	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
1,2-Dichlorobenzene (o-)	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
1,2-Dichloroethane	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
1,2-Dichloroethene (cis)	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
1,2-Dichloropropane	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
1,3,5-Trimethylbenzene	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
1,3-Dichlorobenzene (m-)	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
1,3-Dichloropropane	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
1,3-Dichloropropene (cis)	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
1,3-Dichloropropene (trans)	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
1,4-Dichlorobenzene (p-)	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
2,2-Dichloropropane	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
2-Butanone (MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
2-Hexanone (MBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
4-Isopropyltoluene	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
Bromobenzene	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
Bromochloromethane	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
Bromodichloromethane	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
Bromoform	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
Bromomethane	12 U	13 U	12 U	15 U	6 U	6.0532688 U	6.9541029 U	5.5555556 U	6 U
Butylbenzene, sec-	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
Butylbenzene, tert-	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

					SWMU 318 (Cont)				
Sample ID	SWMU318-SB12-01	SWMU318-SB12-04	SWMU318-SB13-01	SWMU318-SB13-03	SWMU318-SB14-01	SWMU318-SB14-02	SWMU318-SB14-03	SWMU318-SB15-01	SWMU318-SB15-02
Date	3/22/2004	3/22/2004	3/23/2004	3/23/2004	2/5/2005	2/5/2005	2/5/2005	2/5/2005	2/5/2005
Depth Range	1-3	7-9	1-3	5-7	1-3	3-5	5-7	1-3	3-5
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
Chloroethane	12 U	13 U	12 U	15 U	6 U	6.0532688 U	6.9541029 U	5.5555556 U	6 U
Chloroform	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
Chloromethane	12 U	13 U	12 U	15 U	6 U	6.0532688 U	6.9541029 U	5.5555556 U	6 U
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
Dibromomethane	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
Dichlorodifluoromethane (Freon-12)	5.8 U	6.4 U	6.1 U	7.7 U	6 U	6.0532688 U	6.9541029 U	5.5555556 U	6 U
Ethylbenzene	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
Hexachlorobutadiene	5.8 U	6.4 U	6.1 U	7.7 U	6 U	6.0532688 U	6.9541029 U	5.5555556 U	6 U
Isopropylbenzene (Cumene)	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	12 U	13 U	12 U	15 U	6 U	6.0532688 U	6.9541029 U	5.5555556 U	6 U
Naphthalene	5.8 U	6.4 U	6.1 U	7.7 U	0.99 J	6.0532688 U	6.9541029 U	5.5555556 U	6 U
n-Butylbenzene	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
n-Propylbenzene	5.8 U	6.4 U	6.1 U	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
Styrene (Ethenylbenzene)	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
Tetrachloroethene (PCE)	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
Toluene	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
Trichloroethene (TCE)	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
Trichlorofluoromethane	NA	NA	NA	NA	6 U	6.0532688 U	6.9541029 U	5.5555556 U	6 U
Vinyl Chloride	12 U	13 U	12 U	15 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
Xylene, m/p-	5.8 U	6.4 U	4.2 J	7.7 U	2 U	2.4213075 U	2.7816412 U	2.2222222 U	2 U
Xylene, o-	5.8 U	6.4 U	6.1 U	7.7 U	1 U	1.2106538 U	1.3908206 U	1.1111111 U	1 U
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
2,2'-Oxybis[1-chloropropane]	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
2,4,5-Trichlorophenol	950 U	1100 U	NA	NA	NA	980 U	1100 U	900 U	NA
2,4,6-Trichlorophenol	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
2,4-Dichlorophenol	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
2,4-Dimethylphenol	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
2,4-Dinitrophenol	950 U	1100 U	NA	NA	NA	980 U	1100 U	900 U	NA
2,4-Dinitrotoluene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
2,6-Dinitrotoluene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
2-Chloronaphthalene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
2-Chlorophenol	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
2-Methylnaphthalene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
2-Methylphenol (o-Cresol)	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
2-Nitroaniline	950 U	1100 U	NA	NA	NA	980 U	1100 U	900 U	NA
2-Nitrophenol	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
3,3'-Dichlorobenzidine	380 UJ	430 UJ	NA	NA	NA	390 U	440 U	360 U	NA

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB12-01	SWMU318-SB12-04	SWMU318-SB13-01	SWMU318-SB13-03	SWMU318-SB14-01	SWMU318-SB14-02	SWMU318-SB14-03	SWMU318-SB15-01	SWMU318-SB15-02
Date	3/22/2004	3/22/2004	3/23/2004	3/23/2004	2/5/2005	2/5/2005	2/5/2005	2/5/2005	2/5/2005
Depth Range	1-3	7-9	1-3	5-7	1-3	3-5	5-7	1-3	3-5
Semivolatile Organic Compounds (ug									
3-Nitroaniline	950 U	1100 U	NA	NA	NA	980 U	1100 U	900 U	NA
4,6-Dinitro-2-methylphenol	950 U	1100 U	NA	NA	NA	980 U	1100 U	900 U	NA
4-Bromophenyl-phenylether	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
4-Chloro-3-methylphenol	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
4-Chloroaniline	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
4-Chlorophenyl-phenylether	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
4-Methylphenol (p-Cresol)	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
4-Nitroaniline	950 UJ	1100 UJ	NA	NA	NA	980 U	1100 U	900 U	NA
4-Nitrophenol	950 U	1100 U	NA	NA	NA	980 U	1100 U	900 U	NA
Acenaphthene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Acenaphthylene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Acetophenone	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Anthracene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Atrazine	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Benzaldehyde	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Benzo(a)anthracene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Benzo(a)pyrene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Benzo(b)fluoranthene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Benzo(g,h,i)perylene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Benzo(k)fluoranthene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Bis(2-chloroethoxy)methane	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Bis(2-chloroethyl)ether	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Bis(2-ethylhexyl) Phthalate (BEHP	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Butyl Benzyl Phthalate	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Caprolactam	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Carbazole	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Chrysene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Dibenz(a,h)anthracene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Dibenzofuran	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Diethyl Phthalate (DEP)	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Dimethyl Phthalate	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Di-n-butyl Phthalate (DBP)	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Di-n-octyl Phthalate	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Fluoranthene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Fluorene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Hexachlorobenzene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Hexachlorobutadiene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Hexachlorocyclopentadiene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Hexachloroethane	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Indeno(1,2,3-cd)pyrene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Isophorone	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Naphthalene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Nitrobenzene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB12-01	SWMU318-SB12-04	SWMU318-SB13-01	SWMU318-SB13-03	SWMU318-SB14-01	SWMU318-SB14-02	SWMU318-SB14-03	SWMU318-SB15-01	SWMU318-SB15-02
Date	3/22/2004	3/22/2004	3/23/2004	3/23/2004	2/5/2005	2/5/2005	2/5/2005	2/5/2005	2/5/2005
Depth Range	1-3	7-9	1-3	5-7	1-3	3-5	5-7	1-3	3-5
Semivolatile Organic Compounds (ug									
n-Nitrosodi-n-propylamine	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
n-Nitrosodiphenylamine	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Pentachlorophenol	950 U	1100 U	NA	NA	NA	980 U	1100 U	900 U	NA
Phenanthrene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Phenol	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Pyrene	380 U	430 U	NA	NA	NA	390 U	440 U	360 U	NA
Metals (mg/kg)									
Arsenic	1.9 J	10.6	NA	NA	NA	3 U	37.4	0.8 U	NA
Barium	9.2 J	19.4 J	NA	NA	NA	10 J	12 J	5.1 J	NA
Cadmium	0.05 U	0.62 J	NA	NA	NA	0.05 U	0.06 U	0.13 U	NA
Chromium	6.4	21.2	NA	NA	NA	12.6	17	5.3	NA
Lead	3.5 J	15.3	NA	NA	NA	6.8	6.7	3.1 U	NA
Mercury	0.03 J	0.06 J	NA	NA	NA	0.02 U	0.01 U	0.01 U	NA
Selenium	0.67 J	1	NA	NA	NA	0.64 U	1.8 U	0.68 U	NA
Silver	0.22 U	0.21 U	NA	NA	NA	0.12 U	0.15 U	0.13 U	NA

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB15-03	SWMU318-SB16-02	SWMU318-SB16-03	SWMU318-SB17-01	SWMU318-SB17-02	SWMU318-SB17-03	SWMU318-SB18-01	SWMU318-SB18-02	SWMU318-SB18-03
Date	2/5/2005	2/4/2005	2/4/2005	2/5/2005	2/5/2005	2/5/2005	2/7/2005	2/7/2005	2/7/2005
Depth Range	5-7	3-5	5-7	1-3	3-5	5-7	1-3	3-5	5-7
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
1,1,1-Trichloroethane (TCA)	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
1,1,2,2-Tetrachloroethane	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
1,1-Dichloroethane	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
1,1-Dichloroethene	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
1,1-Dichloropropene	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
1,2,3-Trichlorobenzene	0.57 J	0.59 J	7 U	0.57 J	1 J	0.95 J	NA	6.3211125 U	0.83 J
1,2,3-Trichloropropane	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
1,2,4-Trichlorobenzene	0.52 J	0.42 J	0.44 J	0.4 J	0.8 J	0.81 J	NA	6.3211125 U	0.53 J
1,2,4-Trimethylbenzene	2.8208745 U	2.4660912 U	3 U	2 U	0.46 J	0.43 J	NA	2.5 U	2.7932961 U
1,2-Dibromo-3-chloropropane (DBCP)	7.0521862 U	6.1652281 U	7 U	6 U	6.4599483 U	7.1428571 U	NA	6.3211125 U	6.9832402 U
1,2-Dibromoethane (EDB)	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
1,2-Dichlorobenzene (o-)	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
1,2-Dichloroethane	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
1,2-Dichloroethene (cis)	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
1,2-Dichloropropane	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
1,3,5-Trimethylbenzene	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
1,3-Dichlorobenzene (m-)	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
1,3-Dichloropropane	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
1,3-Dichloropropene (cis)	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
1,3-Dichloropropene (trans)	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
1,4-Dichlorobenzene (p-)	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
2,2-Dichloropropane	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
2-Butanone (MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
2-Hexanone (MBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
4-Isopropyltoluene	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
Bromobenzene	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
Bromochloromethane	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
Bromodichloromethane	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
Bromoform	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
Bromomethane	7.0521862 U	6.1652281 U	7 U	6 U	6.4599483 U	7.1428571 U	NA	6.3211125 U	6.9832402 U
Butylbenzene, sec-	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
Butylbenzene, tert-	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

					SWMU 318 (Cont)				
Sample ID	SWMU318-SB15-03	SWMU318-SB16-02	SWMU318-SB16-03	SWMU318-SB17-01	SWMU318-SB17-02	SWMU318-SB17-03	SWMU318-SB18-01	SWMU318-SB18-02	SWMU318-SB18-03
Date	2/5/2005	2/4/2005	2/4/2005	2/5/2005	2/5/2005	2/5/2005	2/7/2005	2/7/2005	2/7/2005
Depth Range	5-7	3-5	5-7	1-3	3-5	5-7	1-3	3-5	5-7
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
Chloroethane	7.0521862 U	6.1652281 U	7 U	6 U	6.4599483 U	7.1428571 U	NA	6.3211125 U	6.9832402 U
Chloroform	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
Chloromethane	7.0521862 U	6.1652281 U	7 U	6 U	6.4599483 U	7.1428571 U	NA	6.3211125 U	6.9832402 U
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
Dibromomethane	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
Dichlorodifluoromethane (Freon-12)	7.0521862 U	6.1652281 U	7 U	6 U	6.4599483 U	7.1428571 U	NA	6.3211125 U	6.9832402 U
Ethylbenzene	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
Hexachlorobutadiene	7.0521862 U	6.1652281 U	7 U	6 U	6.4599483 U	7.1428571 U	NA	6.3211125 U	6.9832402 U
Isopropylbenzene (Cumene)	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	7.0521862 U	6.1652281 U	7 U	6 U	6.4599483 U	7.1428571 U	NA	6.3211125 U	6.9832402 U
Naphthalene	7.0521862 U	6.1652281 U	7 U	6 U	1.4 J	1.1 J	NA	6.3211125 U	6.9832402 U
n-Butylbenzene	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
n-Propylbenzene	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
Styrene (Ethenylbenzene)	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
Tetrachloroethene (PCE)	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
Toluene	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
Trichloroethene (TCE)	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
Trichlorofluoromethane	7.0521862 U	6.1652281 U	7 U	6 U	6.4599483 U	7.1428571 U	NA	6.3211125 U	6.9832402 U
Vinyl Chloride	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
Xylene, m/p-	2.8208745 U	2.4660912 U	3 U	2 U	2.5839793 U	2.8571429 U	NA	2.5 U	2.7932961 U
Xylene, o-	1.4104372 U	1.2330456 U	1 U	1 U	1.2919897 U	1.4285714 U	NA	1.2642225 U	1.396648 U
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (ug/									
1,1'-Biphenyl	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
2,2'-Oxybis[1-chloropropane]	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
2,4,5-Trichlorophenol	1200 U	1000 U	NA	NA	1100 U	1100 U	NA	1100 U	1100 U
2,4,6-Trichlorophenol	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
2,4-Dichlorophenol	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
2,4-Dimethylphenol	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
2,4-Dinitrophenol	1200 U	1000 U	NA	NA	1100 U	1100 U	NA	1100 U	1100 U
2,4-Dinitrotoluene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
2,6-Dinitrotoluene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
2-Chloronaphthalene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
2-Chlorophenol	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
2-Methylnaphthalene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
2-Methylphenol (o-Cresol)	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
2-Nitroaniline	1200 U	1000 U	NA	NA	1100 U	1100 U	NA	1100 U	1100 U
2-Nitrophenol	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
3,3'-Dichlorobenzidine	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB15-03	SWMU318-SB16-02	SWMU318-SB16-03	SWMU318-SB17-01	SWMU318-SB17-02	SWMU318-SB17-03	SWMU318-SB18-01	SWMU318-SB18-02	SWMU318-SB18-03
Date	2/5/2005	2/4/2005	2/4/2005	2/5/2005	2/5/2005	2/5/2005	2/7/2005	2/7/2005	2/7/2005
Depth Range	5-7	3-5	5-7	1-3	3-5	5-7	1-3	3-5	5-7
Semivolatile Organic Compounds (ug/									
3-Nitroaniline	1200 U	1000 U	NA	NA	1100 U	1100 U	NA	1100 U	1100 U
4,6-Dinitro-2-methylpheno	1200 U	1000 U	NA	NA	1100 U	1100 U	NA	1100 U	1100 U
4-Bromophenyl-phenylethe	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
4-Chloro-3-methylphenol	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
4-Chloroaniline	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
4-Chlorophenyl-phenylethe	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
4-Methylphenol (p-Cresol)	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
4-Nitroaniline	1200 U	1000 U	NA	NA	1100 U	1100 U	NA	1100 U	1100 U
4-Nitrophenol	1200 U	1000 U	NA	NA	1100 U	1100 U	NA	1100 U	1100 U
Acenaphthene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Acenaphthylene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Acetophenone	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Anthracene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Atrazine	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Benzaldehyde	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Benzo(a)anthracene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Benzo(a)pyrene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Benzo(b)fluoranthene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Benzo(g,h,i)perylene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Benzo(k)fluoranthene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Bis(2-chloroethoxy)methane	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Bis(2-chloroethyl)ethe	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Bis(2-ethylhexyl) Phthalate (BEHP	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Butyl Benzyl Phthalate	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Caprolactam	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Carbazole	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Chrysene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Dibenz(a,h)anthracene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Dibenzofuran	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Diethyl Phthalate (DEP)	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Dimethyl Phthalate	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Di-n-butyl Phthalate (DBP)	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Di-n-octyl Phthalate	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Fluoranthene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Fluorene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Hexachlorobenzene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Hexachlorobutadiene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Hexachlorocyclopentadiene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Hexachloroethane	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Indeno(1,2,3-cd)pyrene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Isophorone	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Naphthalene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Nitrobenzene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB15-03	SWMU318-SB16-02	SWMU318-SB16-03	SWMU318-SB17-01	SWMU318-SB17-02	SWMU318-SB17-03	SWMU318-SB18-01	SWMU318-SB18-02	SWMU318-SB18-03
Date	2/5/2005	2/4/2005	2/4/2005	2/5/2005	2/5/2005	2/5/2005	2/7/2005	2/7/2005	2/7/2005
Depth Range	5-7	3-5	5-7	1-3	3-5	5-7	1-3	3-5	5-7
Semivolatile Organic Compounds (ug/									
n-Nitrosodi-n-propylamine	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
n-Nitrosodiphenylamine	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Pentachlorophenol	1200 U	1000 U	NA	NA	1100 U	1100 U	NA	1100 U	1100 U
Phenanthrene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Phenol	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Pyrene	480 U	400 U	NA	NA	420 U	460 U	NA	420 U	450 U
Metals (mg/kg)									
Arsenic	20.7	1.7 U	NA	NA	5.3 U	20.8	NA	9.9	4.7 U
Barium	22 J	20.5 J	NA	NA	12.1 J	18.7 J	NA	17.6 J	19.5 J
Cadmium	0.06 U	1.9	NA	NA	0.14 U	0.06 U	NA	0.06 U	0.15 U
Chromium	31.4	14.2	NA	NA	19.1	31.1	NA	22.9	24
Lead	12.5	22.6	NA	NA	10	12.2	NA	11.2	10.7
Mercury	0.05 U	0.06 U	NA	NA	0.11 U	0.04 U	NA	0.07 U	0.04 U
Selenium	1.2 U	0.71 U	NA	NA	1.8 U	1 U	NA	0.77 U	1.5 U
Silver	0.15 U	0.13 U	NA	NA	0.33 U	0.14 U	NA	0.14 U	0.15 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

					SWMU 318 (Cont)				
Sample ID	SWMU318-SB19-02	SWMU318-SB19-05	SWMU318-SB20-02	SWMU318-SB20-04	SWMU318-SB21-02	SWMU318-SB21-04	SWMU318-SB22-03	SWMU318-SB22-04	SWMU318-SB23-02
Date	2/4/2005	2/4/2005	2/3/2005	2/3/2005	2/3/2005	2/3/2005	2/7/2005	2/7/2005	2/3/2005
Depth Range	3-5	9-11	3-5	7-9	3-5	7-9	5-7	7-9	3-5
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	2.6809651 U	2.5 U	2.617801 U	2.2805017 U
1,1,1-Trichloroethane (TCA)	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
1,1,2,2-Tetrachloroethane	3 U	2.739726 U	2.5 U	2.3752969 U	12 U	2.6809651 U	2.5 U	2.617801 U	11 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	12 U	NA	NA	NA	11 U
1,1,2-Trichloroethane	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
1,1-Dichloroethane	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
1,1-Dichloroethene	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
1,1-Dichloropropene	1 U	1.369863 U	1.2642225 U	1.1876485 U	1.261034 U	1.3404826 U	1.2722646 U	1.3089005 U	1.1402509 U
1,2,3-Trichlorobenzene	0.91 J	6.8493151 U	6.3211125 U	5.9382423 U	6.3051702 U	1 J	0.84 J	6.5445026 U	1.3 J
1,2,3-Trichloropropane	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	2.6809651 U	2.5 U	2.617801 U	2.2805017 U
1,2,4-Trichlorobenzene	0.75 J	6.8493151 U	6.3211125 U	5.9382423 U	12 U	0.97 J	0.71 J	6.5445026 U	11 U
1,2,4-Trimethylbenzene	0.43 J	2.739726 U	2.5 U	2.3752969 U	2.5 U	0.63 J	2.5 U	2.617801 U	0.64 J
1,2-Dibromo-3-chloropropane (DBCP)	6 U	6.8493151 U	6.3211125 U	5.9382423 U	12 U	6.7024129 U	6.3613232 U	6.5445026 U	11 U
1,2-Dibromoethane (EDB)	3 U	2.739726 U	2.5 U	2.3752969 U	12 U	2.6809651 U	2.5 U	2.617801 U	11 U
1,2-Dichlorobenzene (o-)	3 U	2.739726 U	2.5 U	2.3752969 U	12 U	2.6809651 U	2.5 U	2.617801 U	11 U
1,2-Dichloroethane	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
1,2-Dichloroethene (cis)	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	12 U	NA	NA	NA	11 U
1,2-Dichloroethene (trans)	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
1,2-Dichloropropane	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
1,3,5-Trimethylbenzene	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	0.53 J	2.5 U	2.617801 U	2.2805017 U
1,3-Dichlorobenzene (m-)	3 U	2.739726 U	2.5 U	2.3752969 U	12 U	2.6809651 U	2.5 U	2.617801 U	11 U
1,3-Dichloropropane	1 U	1.369863 U	1.2642225 U	1.1876485 U	1.261034 U	1.3404826 U	1.2722646 U	1.3089005 U	1.1402509 U
1,3-Dichloropropene (cis)	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
1,3-Dichloropropene (trans)	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
1,4-Dichlorobenzene (p-)	3 U	2.739726 U	2.5 U	2.3752969 U	12 U	2.6809651 U	2.5 U	2.617801 U	11 U
2,2-Dichloropropane	1 U	1.369863 U	1.2642225 U	1.1876485 U	1.261034 U	1.3404826 U	1.2722646 U	1.3089005 U	1.1402509 U
2-Butanone (MEK)	NA	NA	NA	NA	12 U	NA	NA	NA	11 U
2-Chlorotoluene	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	2.6809651 U	2.5 U	2.617801 U	2.2805017 U
2-Hexanone (MBK)	NA	NA	NA	NA	12 U	NA	NA	NA	11 U
4-Chlorotoluene	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	2.6809651 U	2.5 U	2.617801 U	2.2805017 U
4-Isopropyltoluene	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	2.6809651 U	2.5 U	2.617801 U	2.2805017 U
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	12 U	NA	NA	NA	11 U
Acetone	NA	NA	NA	NA	11 J	NA	NA	NA	8 J
Benzene	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
Bromobenzene	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	2.6809651 U	2.5 U	2.617801 U	2.2805017 U
Bromochloromethane	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	2.6809651 U	2.5 U	2.617801 U	2.2805017 U
Bromodichloromethane	3 U	2.739726 U	2.5 U	2.3752969 U	12 U	2.6809651 U	2.5 U	2.617801 U	11 U
Bromoform	3 U	2.739726 U	2.5 U	2.3752969 U	12 U	2.6809651 U	2.5 U	2.617801 U	11 U
Bromomethane	6 U	6.8493151 U	6.3211125 U	5.9382423 U	12 U	6.7024129 U	6.3613232 U	6.5445026 U	11 U
Butylbenzene, sec-	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	2.6809651 U	2.5 U	2.617801 U	2.2805017 U
Butylbenzene, tert-	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	2.6809651 U	2.5 U	2.617801 U	2.2805017 U
Carbon Disulfide	NA	NA	NA	NA	12 U	NA	NA	NA	11 U
Carbon Tetrachloride	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB19-02	SWMU318-SB19-05	SWMU318-SB20-02	SWMU318-SB20-04	SWMU318-SB21-02	SWMU318-SB21-04	SWMU318-SB22-03	SWMU318-SB22-04	SWMU318-SB23-02
Date	2/4/2005	2/4/2005	2/3/2005	2/3/2005	2/3/2005	2/3/2005	2/7/2005	2/7/2005	2/3/2005
Depth Range	3-5	9-11	3-5	7-9	3-5	7-9	5-7	7-9	3-5
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
Chloroethane	6 U	6.8493151 U	6.3211125 U	5.9382423 U	12 U	6.7024129 U	6.3613232 U	6.5445026 U	11 U
Chloroform	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
Chloromethane	6 U	6.8493151 U	6.3211125 U	5.9382423 U	12 U	6.7024129 U	6.3613232 U	6.5445026 U	11 U
Cyclohexane	NA	NA	NA	NA	12 U	NA	NA	NA	11 U
Dibromochloromethane	3 U	2.739726 U	2.5 U	2.3752969 U	12 U	2.6809651 U	2.5 U	2.617801 U	11 U
Dibromomethane	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	2.6809651 U	2.5 U	2.617801 U	2.2805017 U
Dichlorodifluoromethane (Freon-12)	6 U	6.8493151 U	6.3211125 U	5.9382423 U	12 U	6.7024129 U	6.3613232 U	6.5445026 U	11 U
Ethylbenzene	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
Hexachlorobutadiene	6 U	6.8493151 U	6.3211125 U	5.9382423 U	6.3051702 U	6.7024129 U	6.3613232 U	6.5445026 U	5.7012543 U
Isopropylbenzene (Cumene)	3 U	2.739726 U	2.5 U	2.3752969 U	12 U	2.6809651 U	2.5 U	2.617801 U	11 U
Methyl Acetate	NA	NA	NA	NA	12 U	NA	NA	NA	11 U
Methyl Cyclohexane	NA	NA	NA	NA	12 U	NA	NA	NA	11 U
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	12 U	NA	NA	NA	11 U
Methylene Chloride	6 U	6.8493151 U	6.3211125 U	5.9382423 U	18 U	6.7024129 U	6.3613232 U	6.5445026 U	15 U
Naphthalene	6 U	6.8493151 U	6.3211125 U	5.9382423 U	6.3051702 U	1.4 J	1.2 J	6.5445026 U	1.3 J
n-Butylbenzene	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	0.66 J	2.5 U	2.617801 U	0.61 J
n-Propylbenzene	3 U	2.739726 U	2.5 U	2.3752969 U	2.5 U	2.6809651 U	2.5 U	2.617801 U	2.2805017 U
Styrene (Ethenylbenzene)	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
Tetrachloroethene (PCE)	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
Toluene	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
Trichloroethene (TCE)	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
Trichlorofluoromethane	6 U	6.8493151 U	6.3211125 U	5.9382423 U	12 U	6.7024129 U	6.3613232 U	6.5445026 U	11 U
Vinyl Chloride	3 U	2.739726 U	2.5 U	2.3752969 U	12 U	2.6809651 U	2.5 U	2.617801 U	11 U
Xylene, m/p-	3 U	2.739726 U	2.5 U	2.3752969 U	12 U	2.6809651 U	2.5 U	2.617801 U	11 U
Xylene, o-	1 U	1.369863 U	1.2642225 U	1.1876485 U	12 U	1.3404826 U	1.2722646 U	1.3089005 U	11 U
Xylenes, total	NA	NA	NA	NA	12 U	NA	NA	NA	11 U
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
2,2'-Oxybis[1-chloropropane]	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
2,4,5-Trichlorophenol	NA	1100 U	1100 U	990 U	NA	1000 U	1000 U	1000 U	990 U
2,4,6-Trichlorophenol	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
2,4-Dichlorophenol	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
2,4-Dimethylphenol	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
2,4-Dinitrophenol	NA	1100 U	1100 U	990 U	NA	1000 U	1000 U	1000 U	990 U
2,4-Dinitrotoluene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
2,6-Dinitrotoluene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
2-Chloronaphthalene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
2-Chlorophenol	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
2-Methylnaphthalene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
2-Methylphenol (o-Cresol)	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
2-Nitroaniline	NA	1100 U	1100 U	990 U	NA	1000 U	1000 U	1000 U	990 U
2-Nitrophenol	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
3,3'-Dichlorobenzidine	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB19-02	SWMU318-SB19-05	SWMU318-SB20-02	SWMU318-SB20-04	SWMU318-SB21-02	SWMU318-SB21-04	SWMU318-SB22-03	SWMU318-SB22-04	SWMU318-SB23-02
Date	2/4/2005	2/4/2005	2/3/2005	2/3/2005	2/3/2005	2/3/2005	2/7/2005	2/7/2005	2/3/2005
Depth Range	3-5	9-11	3-5	7-9	3-5	7-9	5-7	7-9	3-5
Semivolatile Organic Compounds (ug									
3-Nitroaniline	NA	1100 U	1100 U	990 U	NA	1000 U	1000 U	1000 U	990 U
4,6-Dinitro-2-methylphenol	NA	1100 U	1100 U	990 U	NA	1000 U	1000 U	1000 U	990 U
4-Bromophenyl-phenylether	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
4-Chloro-3-methylphenol	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
4-Chloroaniline	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
4-Chlorophenyl-phenylether	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
4-Methylphenol (p-Cresol)	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
4-Nitroaniline	NA	1100 U	1100 U	990 U	NA	1000 U	1000 U	1000 U	990 U
4-Nitrophenol	NA	1100 U	1100 U	990 U	NA	1000 U	1000 U	1000 U	990 U
Acenaphthene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Acenaphthylene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Acetophenone	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Anthracene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Atrazine	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Benzaldehyde	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Benzo(a)anthracene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Benzo(a)pyrene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Benzo(b)fluoranthene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Benzo(g,h,i)perylene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Benzo(k)fluoranthene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Bis(2-chloroethoxy)methane	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Bis(2-chloroethyl)ether	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Bis(2-ethylhexyl) Phthalate (BEHP	NA	420 U	420 U	300 J	NA	420 U	420 U	400 U	400 U
Butyl Benzyl Phthalate	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Caprolactam	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Carbazole	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Chrysene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Dibenz(a,h)anthracene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Dibenzofuran	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Diethyl Phthalate (DEP)	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Dimethyl Phthalate	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Di-n-butyl Phthalate (DBP)	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Di-n-octyl Phthalate	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Fluoranthene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Fluorene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Hexachlorobenzene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Hexachlorobutadiene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Hexachlorocyclopentadiene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Hexachloroethane	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Indeno(1,2,3-cd)pyrene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Isophorone	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Naphthalene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Nitrobenzene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB19-02	SWMU318-SB19-05	SWMU318-SB20-02	SWMU318-SB20-04	SWMU318-SB21-02	SWMU318-SB21-04	SWMU318-SB22-03	SWMU318-SB22-04	SWMU318-SB23-02
Date	2/4/2005	2/4/2005	2/3/2005	2/3/2005	2/3/2005	2/3/2005	2/7/2005	2/7/2005	2/3/2005
Depth Range	3-5	9-11	3-5	7-9	3-5	7-9	5-7	7-9	3-5
Semivolatile Organic Compounds (ug									
n-Nitrosodi-n-propylamine	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
n-Nitrosodiphenylamine	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Pentachlorophenol	NA	1100 U	1100 U	990 U	NA	1000 U	1000 U	1000 U	990 U
Phenanthrene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Phenol	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Pyrene	NA	420 U	420 U	400 U	NA	420 U	420 U	400 U	400 U
Metals (mg/kg)									
Arsenic	NA	8 U	2.6 U	2.6 U	2.5 U	NA	2 U	1.8 U	2.2 U
Barium	NA	14.6 J	26.4 J	26.9 J	26 J	NA	25.5 J	23.2 J	21.4 J
Cadmium	NA	0.06 U	0.07 U	0.09 U	0.2 U	NA	0.06 U	0.05 U	0.27 U
Chromium	NA	9.3	18.1	12.8	12.9	NA	12	12.8	8.6
Lead	NA	5	16.5	14.7	13.2	NA	11.4	8.2	17.4
Mercury	NA	0.03 U	0.16 U	0.08 U	0.08 U	NA	0.06 U	0.01 U	0.07 U
Selenium	NA	0.94 U	0.82 U	1.5 U	0.78 U	NA	1.8 U	0.61 U	0.64 U
Silver	NA	0.1 U	0.15 U	0.15 U	0.15 U	NA	0.14 U	0.12 U	0.12 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

					SWMU 318 (Cont)				
Sample ID	SWMU318-SB23-04	SWMU318-SB24-03	SWMU318-SB24-05	SWMU318-SB25-02	SWMU318-SB25-04	SWMU318-SB26-01	SWMU318-SB26-02	SWMU318-SB27-02	SWMU318-SB27-03
Date	2/3/2005	2/7/2005	2/7/2005	2/8/2005	2/8/2005	2/4/2005	2/4/2005	2/7/2005	2/7/2005
Depth Range	7-9	5-7	9-11	3-5	7-9	1-3	3-5	3-5	5-7
Volatile Organic Compounds (ug/kg)									
1,1,1,2-Tetrachloroethane	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
1,1,1-Trichloroethane (TCA)	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
1,1,2,2-Tetrachloroethane	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	12 U	2.5 U	2.9325513 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	12 U	NA	NA
1,1,2-Trichloroethane	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
1,1-Dichloroethane	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
1,1-Dichloroethene	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
1,1-Dichloropropene	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	1.2987013 U	1.261034 U	1.4662757 U
1,2,3-Trichlorobenzene	0.64 J	6.6401062 U	7 U	5.5991041 U	6.5963061 U	6.1881188 U	6.4935065 U	6.3051702 U	7.3313783 U
1,2,3-Trichloropropane	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
1,2,4-Trichlorobenzene	0.59 J	6.6401062 U	7 U	5.5991041 U	6.5963061 U	0.47 J	12 U	6.3051702 U	2.0928446 J
1,2,4-Trimethylbenzene	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
1,2-Dibromo-3-chloropropane (DBCP)	6.2893082 U	6.6401062 U	7 U	5.5991041 U	6.5963061 U	6.1881188 U	12 U	6.3051702 U	7.3313783 U
1,2-Dibromoethane (EDB)	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	12 U	2.5 U	2.9325513 U
1,2-Dichlorobenzene (o-)	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	12 U	2.5 U	2.9325513 U
1,2-Dichloroethane	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
1,2-Dichloroethene (cis)	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	18	0.84 J	1.925
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	21	NA	NA
1,2-Dichloroethene (trans)	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	3 J	1.261034 U	1.4662757 U
1,2-Dichloropropane	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
1,3,5-Trimethylbenzene	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
1,3-Dichlorobenzene (m-)	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	12 U	2.5 U	2.9325513 U
1,3-Dichloropropane	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	1.2987013 U	1.261034 U	1.4662757 U
1,3-Dichloropropene (cis)	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
1,3-Dichloropropene (trans)	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
1,4-Dichlorobenzene (p-)	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	12 U	2.5 U	2.9325513 U
2,2-Dichloropropane	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	1.2987013 U	1.261034 U	1.4662757 U
2-Butanone (MEK)	NA	NA	NA	NA	NA	NA	12 U	NA	NA
2-Chlorotoluene	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
2-Hexanone (MBK)	NA	NA	NA	NA	NA	NA	12 U	NA	NA
4-Chlorotoluene	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
4-Isopropyltoluene	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	12 U	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	10 J	NA	NA
Benzene	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
Bromobenzene	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
Bromochloromethane	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
Bromodichloromethane	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	12 U	2.5 U	2.9325513 U
Bromoform	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	12 U	2.5 U	2.9325513 U
Bromomethane	6.2893082 U	6.6401062 U	7 U	5.5991041 U	6.5963061 U	6.1881188 U	12 U	6.3051702 U	7.3313783 U
Butylbenzene, sec-	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
Butylbenzene, tert-	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
Carbon Disulfide	NA	NA	NA	NA	NA	NA	12 U	NA	NA
Carbon Tetrachloride	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

				SWMU 318 (Cont)					
Sample ID	SWMU318-SB23-04	SWMU318-SB24-03	SWMU318-SB24-05	SWMU318-SB25-02	SWMU318-SB25-04	SWMU318-SB26-01	SWMU318-SB26-02	SWMU318-SB27-02	SWMU318-SB27-03
Date	2/3/2005	2/7/2005	2/7/2005	2/8/2005	2/8/2005	2/4/2005	2/4/2005	2/7/2005	2/7/2005
Depth Range	7-9	5-7	9-11	3-5	7-9	1-3	3-5	3-5	5-7
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
Chloroethane	6.2893082 U	6.6401062 U	7 U	5.5991041 U	6.5963061 U	6.1881188 U	12 U	6.3051702 U	7.3313783 U
Chloroform	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
Chloromethane	6.2893082 U	6.6401062 U	7 U	5.5991041 U	6.5963061 U	6.1881188 U	12 U	6.3051702 U	7.3313783 U
Cyclohexane	NA	NA	NA	NA	NA	NA	12 U	NA	NA
Dibromochloromethane	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	12 U	2.5 U	2.9325513 U
Dibromomethane	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
Dichlorodifluoromethane (Freon-12)	6.2893082 U	6.6401062 U	7 U	5.5991041 U	6.5963061 U	6.1881188 U	12 U	6.3051702 U	7.3313783 U
Ethylbenzene	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
Hexachlorobutadiene	6.2893082 U	6.6401062 U	7 U	5.5991041 U	6.5963061 U	6.1881188 U	6.4935065 U	6.3051702 U	7.3313783 U
Isopropylbenzene (Cumene)	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	12 U	2.5 U	2.9325513 U
Methyl Acetate	NA	NA	NA	NA	NA	NA	12 U	NA	NA
Methyl Cyclohexane	NA	NA	NA	NA	NA	NA	12 U	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	NA	NA	12 U	NA	NA
Methylene Chloride	6.2893082 U	6.6401062 U	7 U	5.5991041 U	6.5963061 U	6.1881188 U	16 U	6.3051702 U	7.3313783 U
Naphthalene	0.97 J	6.6401062 U	7 U	5.5991041 U	6.5963061 U	6.1881188 U	6.4935065 U	6.3051702 U	7.3313783 U
n-Butylbenzene	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
n-Propylbenzene	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	2.5974026 U	2.5 U	2.9325513 U
Styrene (Ethenylbenzene)	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
Tetrachloroethene (PCE)	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
Toluene	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
Trichloroethene (TCE)	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
Trichlorofluoromethane	6.2893082 U	6.6401062 U	7 U	5.5991041 U	6.5963061 U	6.1881188 U	12 U	6.3051702 U	7.3313783 U
Vinyl Chloride	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	12 U	2.5 U	2.9325513 U
Xylene, m/p-	2.5 U	2.6560425 U	3 U	2.2396417 U	2.6385224 U	2.4752475 U	12 U	2.5 U	2.9325513 U
Xylene, o-	1.2578616 U	1.3280212 U	1 U	1.1198208 U	1.3192612 U	1.2376238 U	12 U	1.261034 U	1.4662757 U
Xylenes, total	NA	NA	NA	NA	NA	NA	12 U	NA	NA
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
2,2'-Oxybis[1-chloropropane]	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
2,4,5-Trichlorophenol	NA	1100 U	NA	940 U	1200 U	1000 U	1100 U	1050 U	1200 U
2,4,6-Trichlorophenol	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
2,4-Dichlorophenol	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
2,4-Dimethylphenol	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
2,4-Dinitrophenol	NA	1100 U	NA	940 U	1200 U	1000 U	1100 U	1050 U	1200 U
2,4-Dinitrotoluene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
2,6-Dinitrotoluene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
2-Chloronaphthalene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
2-Chlorophenol	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
2-Methylnaphthalene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
2-Methylphenol (o-Cresol)	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
2-Nitroaniline	NA	1100 U	NA	940 U	1200 U	1000 U	1100 U	1050 U	1200 U
2-Nitrophenol	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
3,3'-Dichlorobenzidine	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

				SWMU 318 (Cont)					
Sample ID	SWMU318-SB23-04	SWMU318-SB24-03	SWMU318-SB24-05	SWMU318-SB25-02	SWMU318-SB25-04	SWMU318-SB26-01	SWMU318-SB26-02	SWMU318-SB27-02	SWMU318-SB27-03
Date	2/3/2005	2/7/2005	2/7/2005	2/8/2005	2/8/2005	2/4/2005	2/4/2005	2/7/2005	2/7/2005
Depth Range	7-9	5-7	9-11	3-5	7-9	1-3	3-5	3-5	5-7
Semivolatile Organic Compounds (ug									
3-Nitroaniline	NA	1100 U	NA	940 U	1200 U	1000 U	1100 U	1050 U	1200 U
4,6-Dinitro-2-methylphenol	NA	1100 U	NA	940 U	1200 U	1000 U	1100 U	1050 U	1200 U
4-Bromophenyl-phenylether	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
4-Chloro-3-methylphenol	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
4-Chloroaniline	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
4-Chlorophenyl-phenylether	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
4-Methylphenol (p-Cresol)	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
4-Nitroaniline	NA	1100 U	NA	940 U	1200 U	1000 U	1100 U	1050 U	1200 U
4-Nitrophenol	NA	1100 U	NA	940 U	1200 U	1000 U	1100 U	1050 U	1200 U
Acenaphthene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Acenaphthylene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Acetophenone	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Anthracene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Atrazine	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Benzaldehyde	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Benzo(a)anthracene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Benzo(a)pyrene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Benzo(b)fluoranthene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Benzo(g,h,i)perylene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Benzo(k)fluoranthene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Bis(2-chloroethoxy)methane	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Bis(2-chloroethyl)ether	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Bis(2-ethylhexyl) Phthalate (BEHP	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Butyl Benzyl Phthalate	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Caprolactam	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Carbazole	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Chrysene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Dibenz(a,h)anthracene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Dibenzofuran	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Diethyl Phthalate (DEP)	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Dimethyl Phthalate	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Di-n-butyl Phthalate (DBP)	NA	1,200	NA	370 U	495 U	410 U	430 U	420 U	470 U
Di-n-octyl Phthalate	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Fluoranthene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Fluorene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Hexachlorobenzene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Hexachlorobutadiene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Hexachlorocyclopentadiene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Hexachloroethane	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Indeno(1,2,3-cd)pyrene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Isophorone	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Naphthalene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Nitrobenzene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)								
Sample ID	SWMU318-SB23-04	SWMU318-SB24-03	SWMU318-SB24-05	SWMU318-SB25-02	SWMU318-SB25-04	SWMU318-SB26-01	SWMU318-SB26-02	SWMU318-SB27-02	SWMU318-SB27-03
Date	2/3/2005	2/7/2005	2/7/2005	2/8/2005	2/8/2005	2/4/2005	2/4/2005	2/7/2005	2/7/2005
Depth Range	7-9	5-7	9-11	3-5	7-9	1-3	3-5	3-5	5-7
Semivolatile Organic Compounds (ug									
n-Nitrosodi-n-propylamine	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
n-Nitrosodiphenylamine	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Pentachlorophenol	NA	1100 U	NA	940 U	1200 U	1000 U	1100 U	1050 U	1200 U
Phenanthrene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Phenol	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Pyrene	NA	420 U	NA	370 U	495 U	410 U	430 U	420 U	470 U
Metals (mg/kg)									
Arsenic	2.3 U	4 U	NA	0.895 U	4.25 U	2.6 U	5 U	4.6 U	17 U
Barium	21.8 J	28.6 J	NA	8.55 J	30.0 J	15.1 J	25.2 J	21.3 J	27.4 J
Cadmium	0.06 U	0.06 U	NA	0.135 U	0.08 U	0.12 U	0.05 U	0.06 U	0.06 U
Chromium	14.5	20.1	NA	4.525	35.4	7.7	25.8	21.1	36.5
Lead	15.2	14.4	NA	2.65 U	17.0	5.2	14.4	12.9	14.9
Mercury	0.11 U	0.1 U	NA	0.035 U	0.12 U	0.07 U	0.11 U	0.085 U	0.06 U
Selenium	0.72 U	1.2 U	NA	1.28 U	1.145 U	0.8 U	1 U	1.08 U	1.1 U
Silver	0.14 U	1.7 U	NA	0.14 U	0.135 U	0.15 U	0.12 U	0.15 U	0.28 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)				
Sample ID	SWMU318-SB28-02	SWMU318-SB28-04	SWMU318-SB35-01	SWMU318-SB35-02	SWMU318-SB35-03
Date	2/8/2005	2/8/2005	2/5/2005	2/5/2005	2/5/2005
Depth Range	3-5	7-9	1-3	3-5	5-7
Volatile Organic Compounds (ug/kg)					
1,1,1,2-Tetrachloroethane	2.3282887 U	2.6350461 U	2 U	2 U	2 U
1,1,1-Trichloroethane (TCA)	1.1641444 U	1.3175231 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2.3282887 U	2.6350461 U	2 U	2 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1.1641444 U	1.3175231 U	1 U	1 U	1 U
1,1-Dichloroethane	1.1641444 U	1.3175231 U	1 U	1 U	1 U
1,1-Dichloroethene	1.1641444 U	1.3175231 U	1 U	1 U	1 U
1,1-Dichloropropene	1.1641444 U	1.3175231 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	5.8207218 U	6.5876153 U	6 U	1 J	6 U
1,2,3-Trichloropropane	2.3282887 U	2.6350461 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	5.8207218 U	6.5876153 U	6 U	0.76 J	6 U
1,2,4-Trimethylbenzene	2.3282887 U	2.6350461 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane (DBCP)	5.8207218 U	6.5876153 U	6 U	6 U	6 U
1,2-Dibromoethane (EDB)	2.3282887 U	2.6350461 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	2.3282887 U	2.6350461 U	2 U	2 U	2 U
1,2-Dichloroethane	1.1641444 U	1.3175231 U	1 U	1 U	1 U
1,2-Dichloroethene (cis)	1.1641444 U	1.3175231 U	1 U	1 U	1 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	1.1641444 U	1.3175231 U	1 U	1 U	1 U
1,2-Dichloropropane	1.1641444 U	1.3175231 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	2.3282887 U	2.6350461 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	2.3282887 U	2.6350461 U	2 U	2 U	2 U
1,3-Dichloropropane	1.1641444 U	1.3175231 U	1 U	1 U	1 U
1,3-Dichloropropene (cis)	1.1641444 U	1.3175231 U	1 U	1 U	1 U
1,3-Dichloropropene (trans)	1.1641444 U	1.3175231 U	1 U	1 U	1 U
1,4-Dichlorobenzene (p-)	2.3282887 U	2.6350461 U	2 U	2 U	2 U
2,2-Dichloropropane	1.1641444 U	1.3175231 U	1 U	1 U	1 U
2-Butanone (MEK)	NA	NA	NA	NA	NA
2-Chlorotoluene	2.3282887 U	2.6350461 U	2 U	2 U	2 U
2-Hexanone (MBK)	NA	NA	NA	NA	NA
4-Chlorotoluene	2.3282887 U	2.6350461 U	2 U	2 U	2 U
4-Isopropyltoluene	2.3282887 U	2.6350461 U	2 U	2 U	2 U
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA
Benzene	1.1641444 U	1.3175231 U	1 U	1 U	1 U
Bromobenzene	2.3282887 U	2.6350461 U	2 U	2 U	2 U
Bromochloromethane	2.3282887 U	2.6350461 U	2 U	2 U	2 U
Bromodichloromethane	2.3282887 U	2.6350461 U	2 U	2 U	2 U
Bromoform	2.3282887 U	2.6350461 U	2 U	2 U	2 U
Bromomethane	5.8207218 U	6.5876153 U	6 U	6 U	6 U
Butylbenzene, sec-	2.3282887 U	2.6350461 U	2 U	2 U	2 U
Butylbenzene, tert-	2.3282887 U	2.6350461 U	2 U	2 U	2 U
Carbon Disulfide	NA	NA	NA	NA	NA
Carbon Tetrachloride	1.1641444 U	1.3175231 U	1 U	1 U	1 U

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)				
Sample ID	SWMU318-SB28-02	SWMU318-SB28-04	SWMU318-SB35-01	SWMU318-SB35-02	SWMU318-SB35-03
Date	2/8/2005	2/8/2005	2/5/2005	2/5/2005	2/5/2005
Depth Range	3-5	7-9	1-3	3-5	5-7
Volatile Organic Compounds (ug/kg)					
Chlorobenzene	1.1641444 U	1.3175231 U	1 U	1 U	1 U
Chloroethane	5.8207218 U	6.5876153 U	6 U	6 U	6 U
Chloroform	1.1641444 U	1.3175231 U	1 U	1 U	1 U
Chloromethane	5.8207218 U	6.5876153 U	6 U	6 U	6 U
Cyclohexane	NA	NA	NA	NA	NA
Dibromochloromethane	2.3282887 U	2.6350461 U	2 U	2 U	2 U
Dibromomethane	2.3282887 U	2.6350461 U	2 U	2 U	2 U
Dichlorodifluoromethane (Freon-12)	5.8207218 U	6.5876153 U	6 U	6 U	6 U
Ethylbenzene	1.1641444 U	1.3175231 U	1 U	1 U	1 U
Hexachlorobutadiene	5.8207218 U	6.5876153 U	6 U	6 U	6 U
Isopropylbenzene (Cumene)	2.3282887 U	2.6350461 U	2 U	2 U	2 U
Methyl Acetate	NA	NA	NA	NA	NA
Methyl Cyclohexane	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	NA
Methylene Chloride	5.8207218 U	6.5876153 U	6 U	6 U	6 U
Naphthalene	5.8207218 U	6.5876153 U	6 U	1.2 J	6 U
n-Butylbenzene	2.3282887 U	2.6350461 U	2 U	2 U	2 U
n-Propylbenzene	2.3282887 U	2.6350461 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	1.1641444 U	1.3175231 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	1.1641444 U	1.3175231 U	1 U	1 U	1 U
Toluene	1.1641444 U	1.3175231 U	1 U	1 U	1 U
Trichloroethene (TCE)	1.1641444 U	1.3175231 U	1 U	1 U	1 U
Trichlorofluoromethane	5.8207218 U	6.5876153 U	6 U	6 U	6 U
Vinyl Chloride	2.3282887 U	2.6350461 U	2 U	2 U	2 U
Xylene, m/p-	2.3282887 U	2.6350461 U	2 U	2 U	2 U
Xylene, o-	1.1641444 U	1.3175231 U	1 U	1 U	1 U
Xylenes, total	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (ug					
1,1'-Biphenyl	405 U	435 U	NA	NA	NA
2,2'-Oxybis[1-chloropropane]	405 U	435 U	NA	NA	NA
2,4,5-Trichlorophenol	1000 U	1100 U	NA	NA	NA
2,4,6-Trichlorophenol	405 U	435 U	NA	NA	NA
2,4-Dichlorophenol	405 U	435 U	NA	NA	NA
2,4-Dimethylphenol	405 U	435 U	NA	NA	NA
2,4-Dinitrophenol	1000 U	1100 U	NA	NA	NA
2,4-Dinitrotoluene	405 U	435 U	NA	NA	NA
2,6-Dinitrotoluene	405 U	435 U	NA	NA	NA
2-Chloronaphthalene	405 U	435 U	NA	NA	NA
2-Chlorophenol	405 U	435 U	NA	NA	NA
2-Methylnaphthalene	405 U	435 U	NA	NA	NA
2-Methylphenol (o-Cresol)	405 U	435 U	NA	NA	NA
2-Nitroaniline	1000 U	1100 U	NA	NA	NA
2-Nitrophenol	405 U	435 U	NA	NA	NA
3,3'-Dichlorobenzidine	405 U	435 U	NA	NA	NA

APPENDIX G (Continued)

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)				
Sample ID	SWMU318-SB28-02	SWMU318-SB28-04	SWMU318-SB35-01	SWMU318-SB35-02	SWMU318-SB35-03
Date	2/8/2005	2/8/2005	2/5/2005	2/5/2005	2/5/2005
Depth Range	3-5	7-9	1-3	3-5	5-7
Semivolatile Organic Compounds (ug					
3-Nitroaniline	1000 U	1100 U	NA	NA	NA
4,6-Dinitro-2-methylpheno	1000 U	1100 U	NA	NA	NA
4-Bromophenyl-phenylether	405 U	435 U	NA	NA	NA
4-Chloro-3-methylphenol	405 U	435 U	NA	NA	NA
4-Chloroaniline	405 U	435 U	NA	NA	NA
4-Chlorophenyl-phenylether	405 U	435 U	NA	NA	NA
4-Methylphenol (p-Cresol)	405 U	435 U	NA	NA	NA
4-Nitroaniline	1000 U	1100 U	NA	NA	NA
4-Nitrophenol	1000 U	1100 U	NA	NA	NA
Acenaphthene	405 U	435 U	NA	NA	NA
Acenaphthylene	405 U	435 U	NA	NA	NA
Acetophenone	405 U	435 U	NA	NA	NA
Anthracene	405 U	435 U	NA	NA	NA
Atrazine	405 U	435 U	NA	NA	NA
Benzaldehyde	405 U	435 U	NA	NA	NA
Benzo(a)anthracene	405 U	435 U	NA	NA	NA
Benzo(a)pyrene	405 U	435 U	NA	NA	NA
Benzo(b)fluoranthene	405 U	435 U	NA	NA	NA
Benzo(g,h,i)perylene	405 U	435 U	NA	NA	NA
Benzo(k)fluoranthene	405 U	435 U	NA	NA	NA
Bis(2-chloroethoxy)methane	405 U	435 U	NA	NA	NA
Bis(2-chloroethyl)ether	405 U	435 U	NA	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP	405 U	435 U	NA	NA	NA
Butyl Benzyl Phthalate	405 U	435 U	NA	NA	NA
Caprolactam	405 U	435 U	NA	NA	NA
Carbazole	405 U	435 U	NA	NA	NA
Chrysene	405 U	435 U	NA	NA	NA
Dibenz(a,h)anthracene	405 U	435 U	NA	NA	NA
Dibenzofuran	405 U	435 U	NA	NA	NA
Diethyl Phthalate (DEP)	405 U	435 U	NA	NA	NA
Dimethyl Phthalate	405 U	435 U	NA	NA	NA
Di-n-butyl Phthalate (DBP)	405 U	663	NA	NA	NA
Di-n-octyl Phthalate	405 U	435 U	NA	NA	NA
Fluoranthene	405 U	435 U	NA	NA	NA
Fluorene	405 U	435 U	NA	NA	NA
Hexachlorobenzene	405 U	435 U	NA	NA	NA
Hexachlorobutadiene	405 U	435 U	NA	NA	NA
Hexachlorocyclopentadiene	405 U	435 U	NA	NA	NA
Hexachloroethane	405 U	435 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	405 U	435 U	NA	NA	NA
Isophorone	405 U	435 U	NA	NA	NA
Naphthalene	405 U	435 U	NA	NA	NA
Nitrobenzene	405 U	435 U	NA	NA	NA

SUBSURFACE SOIL ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

	SWMU 318 (Cont)				
Sample ID	SWMU318-SB28-02	SWMU318-SB28-04	SWMU318-SB35-01	SWMU318-SB35-02	SWMU318-SB35-03
Date	2/8/2005	2/8/2005	2/5/2005	2/5/2005	2/5/2005
Depth Range	3-5	7-9	1-3	3-5	5-7
Semivolatile Organic Compounds (ug					
n-Nitrosodi-n-propylamine	405 U	435 U	NA	NA	NA
n-Nitrosodiphenylamine	405 U	435 U	NA	NA	NA
Pentachlorophenol	1000 U	1100 U	NA	NA	NA
Phenanthrene	405 U	435 U	NA	NA	NA
Phenol	405 U	435 U	NA	NA	NA
Pyrene	405 U	435 U	NA	NA	NA
Metals (mg/kg)					
Arsenic	1.5 U	7.0	NA	NA	NA
Barium	14.7 J	22.1 J	NA	NA	NA
Cadmium	0.065 U	0.25 U	NA	NA	NA
Chromium	5.6	22.3	NA	NA	NA
Lead	6.7	13.2	NA	NA	NA
Mercury	0.055 U	0.08 U	NA	NA	NA
Selenium	0.745 U	1.415 U	NA	NA	NA
Silver	0.12 U	0.13 U	NA	NA	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW01-01	SWMU318-GW02-01	SWMU318-GW03-01	SWMU318-GW06-01	SWMU318-GW06-02	SWMU318-GW07A-01	SWMU318-GW07-01	SWMU318-GW09-01	SWMU318-GW10-01
SAMPLE DATE	3/19/2004	3/17/2004	3/18/2004	3/17/2004	3/17/2004	6/24/04	3/18/2004	3/19/2004	3/20/2004
SAMPLE DEPTH (ft range)	24-28	24-28	24-28	20-24	26-30	25-29	24-28	24-28	20-24
Volatile Organic Compounds (ug/L)									
1,1,1,2-Tetrachloroethane	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	2 U
1,1,1-Trichloroethane (TCA)	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
1,1,2,2-Tetrachloroethane	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA	180
1,1,2-Trichloroethane	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
1,1-Dichloroethane	20 U	1 J	0.9 J	12 J	2 U	2 U	20 U	2 J	10 U
1,1-Dichloroethene	20 U	2 U	7	20 U	2 U	9.2	10 J	2 U	4 J
1,1-Dichloropropene	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	2 U
1,2,3-Trichlorobenzene	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	2 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
1,2,4-Trimethylbenzene	10 J	1 J	2 U	13 J	2 U	2 U	20 U	2 U	2 U
1,2-Dibromo-3-chloropropane (DBCP)	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
1,2-Dibromoethane (EDB)	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	2 U
1,2-Dichlorobenzene (o-)	20 U	2 U	2 U	4 J	0.7 J	2 U	20 U	2 U	10 U
1,2-Dichloroethane	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
1,2-Dichloroethene (cis)	16 J	23	800 D	99	0.6 J	610	620 D	8	670 D
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	670 D
1,2-Dichloroethene (trans)	20 U	2 U	4	20 U	2 U	18.2	5 J	0.6 J	6 J
1,2-Dichloropropane	20 U	0.3 J	2 U	20 U	2 U	2 U	20 U	2 U	10 U
1,3,5-Trimethylbenzene	12 J	2 U	2 U	30	0.8 J	2 U	20 U	2 U	2 U
1,3-Dichlorobenzene (m-)	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
1,3-Dichloropropane	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	2 U
1,3-Dichloropropene (cis)	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
1,3-Dichloropropene (trans)	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
1,4-Dichlorobenzene (p-)	20 U	0.8 J	0.8 J	20 U	2 U	2 U	20 U	2 U	10 U
2,2-Dichloropropane	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	2 U
2-Butanone (MEK)	NA	NA	NA	NA	NA	NA	NA	NA	10 UJ
2-Chlorotoluene	20 U	2 U	2 U	13 J	2 U	2 U	20 U	2 U	2 U
2-Hexanone (MBK)	NA	NA	NA	NA	NA	NA	NA	NA	10 U
4-Chlorotoluene	20 U	2 U	2 U	20 U	2 U	2 U	8 J	2 U	2 U
4-Isopropyltoluene	16 J	0.8 J	2 U	150	2 U	2 U	20 U	2 U	2 U
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	10 U
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	10 UJ
Benzene	73	24	4	98	0.25 J	2 U	20 U	2 U	2 J
Bromobenzene	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	2 U
Bromochloromethane	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	2 U
Bromodichloromethane	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 J	10 U
Bromoform	20 U	2 U	2 U	6 J	2 U	2 U	20 U	2 U	10 U
Bromomethane	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
Butylbenzene, sec-	20 U	2 U	2 U	9 J	2 U	2 U	20 U	2 U	2 U
Butylbenzene, tert-	16 J	2 U	2 U	20 U	2 U	2 U	13 J	2 U	2 U
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	10 U
Carbon Tetrachloride	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW01-01	SWMU318-GW02-01	SWMU318-GW03-01	SWMU318-GW06-01	SWMU318-GW06-02	SWMU318-GW07A-01	SWMU318-GW07-01	SWMU318-GW09-01	SWMU318-GW10-01
SAMPLE DATE	3/19/2004	3/17/2004	3/18/2004	3/17/2004	3/17/2004	6/24/04	3/18/2004	3/19/2004	3/20/2004
SAMPLE DEPTH (ft range)	24-28	24-28	24-28	20-24	26-30	25-29	24-28	24-28	20-24
Volatile Organic Compounds (ug/kg) (Cont)									
Chlorobenzene	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
Chloroethane	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
Chloroform	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
Chloromethane	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	10 U
Dibromochloromethane	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
Dibromomethane	20 U	2 U	2 U	20 U	2 U	NA	20 U	2 U	2 U
Dichlorodifluoromethane (Freon-12)	20 U	2 U	2 U	20 U	2 U	2 U	20 U	0.6 J	10 U
Ethylbenzene	47	2	2 J	91	1 J	2 U	7 J	2 U	3 J
Hexachlorobutadiene	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	2 U
Isopropylbenzene (Cumene)	36	1 J	2 U	76	1 J	2 U	13 J	2 U	10 U
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	10 U
Methyl Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	10 U
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	10 U
Methylene Chloride	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	10 U
Naphthalene	1970 D	2 J	2 U	1878 D	2 U	2 U	31	5	2 U
n-Butylbenzene	8 J	2 U	2 U	20 U	2 U	2 U	20 U	2 U	2 U
n-Propylbenzene	20 U	2 U	2 U	20 U	2 U	2 U	20 U	2 U	2 U
Styrene (Ethenylbenzene)	20 U	2 U	2 U	11 J	2 U	2 U	20 U	2 U	10 U
Tetrachloroethene (PCE)	7 J	2 U	2 U	20 U	2 U	2 U	20 U	0.9 J	10 U
Toluene	51	2 J	2 J	190	1 J	2 U	10 J	2 J	33
Trichloroethene (TCE)	34	29	1690 D	62	0.9 J	3130	7120 D	29	1200 D
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	10 U
Vinyl Chloride	20 U	2 U	5	30	2 U	24.6	20 U	0.8 J	140
Xylene, m/p-	60	2 J	2 J	160	2 J	NA	17 J	4 U	5 J
Xylene, o-	28	1 J	1 J	84	2 U	2 U	20 U	2 U	4 J
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	8 J
Semivolatile Organic Compounds (ug/L)									
1,1'-Biphenyl	NA	NA	NA	36	NA	NA	19 U	10 U	NA
2,2'-Oxybis[1-chloropropane]	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
2,4,5-Trichlorophenol	NA	NA	NA	25 U	NA	NA	47 U	25 U	NA
2,4,6-Trichlorophenol	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
2,4-Dichlorophenol	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
2,4-Dimethylphenol	NA	NA	NA	990 D	NA	NA	12 J	10 U	NA
2,4-Dinitrophenol	NA	NA	NA	25 U	NA	NA	47 U	25 U	NA
2,4-Dinitrotoluene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
2,6-Dinitrotoluene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
2-Chloronaphthalene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
2-Chlorophenol	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
2-Methylnaphthalene	NA	NA	NA	480 D	NA	NA	19 U	10 U	NA
2-Methylphenol (o-Cresol)	NA	NA	NA	410 D	NA	NA	19 U	10 U	NA
2-Nitroaniline	NA	NA	NA	25 U	NA	NA	47 U	25 U	NA
2-Nitrophenol	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
3,3'-Dichlorobenzidine	NA	NA	NA	10 U	NA	NA	19 UJ	10 UJ	NA
3-Nitroaniline	NA	NA	NA	25 U	NA	NA	47 U	25 U	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	25 U	NA	NA	47 U	25 U	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW01-01	SWMU318-GW02-01	SWMU318-GW03-01	SWMU318-GW06-01	SWMU318-GW06-02	SWMU318-GW07A-01	SWMU318-GW07-01	SWMU318-GW09-01	SWMU318-GW10-01
SAMPLE DATE	3/19/2004	3/17/2004	3/18/2004	3/17/2004	3/17/2004	6/24/04	3/18/2004	3/19/2004	3/20/2004
SAMPLE DEPTH (ft range)	24-28	24-28	24-28	20-24	26-30	25-29	24-28	24-28	20-24
Semivolatile Organic Compounds (ug/kg) (Cont									
4-Bromophenyl-phenylether	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
4-Chloro-3-methylphenol	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
4-Chloroaniline	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
4-Chlorophenyl-phenylether	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
4-Methylphenol (p-Cresol)	NA	NA	NA	250 DJ	NA	NA	19 U	10 U	NA
4-Nitroaniline	NA	NA	NA	25 UJ	NA	NA	47 UJ	25 UJ	NA
4-Nitrophenol	NA	NA	NA	25 U	NA	NA	47 U	25 U	NA
Acenaphthene	NA	NA	NA	280 DJ	NA	NA	19 U	10 U	NA
Acenaphthylene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Acetophenone	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Anthracene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Atrazine	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Benzaldehyde	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Benzo(a)anthracene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Benzo(a)pyrene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Benzo(b)fluoranthene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Benzo(g,h,i)perylene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Benzo(k)fluoranthene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Bis(2-chloroethoxy)methane	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Bis(2-chloroethyl)ether	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Bis(2-ethylhexyl) Phthalate (BEHP	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Butyl Benzyl Phthalate	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Caprolactam	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Carbazole	NA	NA	NA	26	NA	NA	19 U	10 U	NA
Chrysene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Dibenz(a,h)anthracene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Dibenzofuran	NA	NA	NA	73	NA	NA	19 U	10 U	NA
Diethyl Phthalate (DEP)	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Dimethyl Phthalate	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Di-n-butyl Phthalate (DBP)	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Di-n-octyl Phthalate	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Fluoranthene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Fluorene	NA	NA	NA	46	NA	NA	19 U	10 U	NA
Hexachlorobenzene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Hexachlorobutadiene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Hexachlorocyclopentadiene	NA	NA	NA	10 UJ	NA	NA	19 UJ	10 U	NA
Hexachloroethane	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Isophorone	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Naphthalene	NA	NA	NA	2100 D	NA	NA	98	10 U	NA
Nitrobenzene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
n-Nitrosodi-n-propylamine	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
n-Nitrosodiphenylamine	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Pentachlorophenol	NA	NA	NA	25 U	NA	NA	47 U	25 U	NA
Phenanthrene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Phenol	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA
Pyrene	NA	NA	NA	10 U	NA	NA	19 U	10 U	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW01-01	SWMU318-GW02-01	SWMU318-GW03-01	SWMU318-GW06-01	SWMU318-GW06-02	SWMU318-GW07A-01	SWMU318-GW07-01	SWMU318-GW09-01	SWMU318-GW10-01
SAMPLE DATE	3/19/2004	3/17/2004	3/18/2004	3/17/2004	3/17/2004	6/24/04	3/18/2004	3/19/2004	3/20/2004
SAMPLE DEPTH (ft range)	24-28	24-28	24-28	20-24	26-30	25-29	24-28	24-28	20-24
Total Metals (ug/L)									
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW10-02	SWMU318-GW13-01	SWMU318-GW14-01	SWMU318-GW16-01	SWMU318-GW17-01	SWMU318-GW18-01	SMWU318-GW19-01	SWMU318-GW20-01	SWMU318-GW20-02A
SAMPLE DATE	3/20/2004	3/20/2004	3/22/2004	6/21/04	6/23/04	6/21/04	6/21/04	6/21/04	6/24/2004
SAMPLE DEPTH (ft range)	26-30	24-28	26-30	25-29	25-29	25-29	25-29	25-29	20-24
Volatile Organic Compounds (ug/L)									
1,1,1,2-Tetrachloroethane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
1,1,1-Trichloroethane (TCA)	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
1,1,2,2-Tetrachloroethane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
1,1-Dichloroethane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	10
1,1-Dichloroethene	2 U	2 J	25 U	5 U	2 U	2 U	2 U	11.3	0.3 J
1,1-Dichloropropene	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
1,2,3-Trichlorobenzene	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
1,2,4-Trimethylbenzene	2 U	2 U	31	5 U	2 U	2 U	2 U	2 U	NA
1,2-Dibromo-3-chloropropane (DBCP)	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
1,2-Dibromoethane (EDB)	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
1,2-Dichlorobenzene (o-)	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
1,2-Dichloroethane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
1,2-Dichloroethene (cis)	0.8 J	23	90	37.5	30.5	25.9	4.5	417	24
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	26
1,2-Dichloroethene (trans)	2 U	0.9 J	25 U	5 U	2 U	2.3	2 U	14.4	2
1,2-Dichloropropane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
1,3,5-Trimethylbenzene	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
1,3-Dichlorobenzene (m-)	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
1,3-Dichloropropane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
1,3-Dichloropropene (cis)	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
1,3-Dichloropropene (trans)	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
1,4-Dichlorobenzene (p-)	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
2,2-Dichloropropane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
2-Butanone (MEK)	NA	NA	NA	NA	NA	NA	NA	NA	5 U
2-Chlorotoluene	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
2-Hexanone (MBK)	NA	NA	NA	NA	NA	NA	NA	NA	5 U
4-Chlorotoluene	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
4-Isopropyltoluene	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	5 U
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	2 J
Benzene	2 U	8	30	5 U	2 U	2 U	11.4	2 U	1
Bromobenzene	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
Bromochloromethane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
Bromodichloromethane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
Bromoform	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
Bromomethane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	2 U
Butylbenzene, sec-	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
Butylbenzene, tert-	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	0.7 J
Carbon Tetrachloride	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW10-02	SWMU318-GW13-01	SWMU318-GW14-01	SWMU318-GW16-01	SWMU318-GW17-01	SWMU318-GW18-01	SMWU318-GW19-01	SWMU318-GW20-01	SWMU318-GW20-02A
SAMPLE DATE	3/20/2004	3/20/2004	3/22/2004	6/21/04	6/23/04	6/21/04	6/21/04	6/21/04	6/24/2004
SAMPLE DEPTH (ft range)	26-30	24-28	26-30	25-29	25-29	25-29	25-29	25-29	20-24
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1
Chloroethane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	2 U
Chloroform	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
Chloromethane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	2 U
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
Dibromomethane	2 U	2 U	25 U	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
Ethylbenzene	2 U	2 U	23 J	5 U	2 U	2 U	2 U	2 U	2
Hexachlorobutadiene	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
Isopropylbenzene (Cumene)	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	20	2 U	945	5 U	9.8	2 U	2 U	2 U	NA
n-Butylbenzene	2 U	2 U	38	5 U	2 U	2 U	2 U	2 U	NA
n-Propylbenzene	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	NA
Styrene (Ethenylbenzene)	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
Tetrachloroethene (PCE)	2 U	2 U	25 U	5 U	2 U	2 U	2 U	2 U	1 U
Toluene	0.6 J	0.5 J	25 U	5 U	2 U	2 U	2 U	2 U	3
Trichloroethene (TCE)	0.8 J	473	70	7.8	18.4	12.9	2.4	47.6	64
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	2 U	2 U	25 U	5.5	5.7	2 U	2 U	63.1	5
Xylene, m/p-	0.8 J	4 U	26	10 U	4 U	4 U	4 U	4 U	0.9 J
Xylene, o-	0.5 J	2 U	25 U	5 U	2 U	2 U	2 U	2 U	0.3 J
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	1 J
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	NA	NA	12	NA	NA	NA	NA	NA	NA
2,2'-Oxybis[1-chloropropane]	NA	NA	10 U	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	25 U	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	10 U	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	10 U	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	13	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	25 U	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	10 U	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	130 D	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-Cresol)	NA	NA	10 U	NA	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	25 U	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	10 U	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	10 U	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	25 UJ	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	25 U	NA	NA	NA	NA	NA	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW10-02	SWMU318-GW13-01	SWMU318-GW14-01	SWMU318-GW16-01	SWMU318-GW17-01	SWMU318-GW18-01	SMWU318-GW19-01	SWMU318-GW20-01	SWMU318-GW20-02A
SAMPLE DATE	3/20/2004	3/20/2004	3/22/2004	6/21/04	6/23/04	6/21/04	6/21/04	6/21/04	6/24/2004
SAMPLE DEPTH (ft range)	26-30	24-28	26-30	25-29	25-29	25-29	25-29	25-29	20-24
Semivolatile Organic Compounds (ug/									
4-Bromophenyl-phenylether	NA	NA	10 U	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	10 U	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	10 U	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NA	NA	10 U	NA	NA	NA	NA	NA	NA
4-Methylphenol (p-Cresol)	NA	NA	10 U	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	25 UJ	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	25 U	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	95 DJ	NA	NA	NA	NA	NA	NA
Acenaphthylene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Acetophenone	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Atrazine	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Benzaldehyde	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Bis(2-chloroethoxy)methane	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Bis(2-chloroethyl)ether	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP	NA	NA	2 J	NA	NA	NA	NA	NA	NA
Butyl Benzyl Phthalate	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Caprolactam	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	24 J	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Dibenzofuran	NA	NA	26	NA	NA	NA	NA	NA	NA
Diethyl Phthalate (DEP)	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Dimethyl Phthalate	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Di-n-butyl Phthalate (DBP)	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Di-n-octyl Phthalate	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	16	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Hexachloroethane	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Isophorone	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	800 D	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	10 U	NA	NA	NA	NA	NA	NA
n-Nitrosodi-n-propylamine	NA	NA	10 U	NA	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	25 U	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	0.6 J	NA	NA	NA	NA	NA	NA
Phenol	NA	NA	0.5 J	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	10 U	NA	NA	NA	NA	NA	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW10-02	SWMU318-GW13-01	SWMU318-GW14-01	SWMU318-GW16-01	SWMU318-GW17-01	SWMU318-GW18-01	SMWU318-GW19-01	SWMU318-GW20-01	SWMU318-GW20-02A
SAMPLE DATE	3/20/2004	3/20/2004	3/22/2004	6/21/04	6/23/04	6/21/04	6/21/04	6/21/04	6/24/2004
SAMPLE DEPTH (ft range)	26-30	24-28	26-30	25-29	25-29	25-29	25-29	25-29	20-24
Total Metals (ug/L)									
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW23-01	SWMU318-GW25-01	SWMU318-GW26-01	SWMV318-GW28-01	SWMU318-GW31-01	SWMU318-GW32-01	SWMU318-GW34-01	SWMU318-GW37-01	SWMU318-GW51-01
SAMPLE DATE	6/23/2004	6/23/04	6/23/04	6/24/04	2/3/2005	2/3/2005	2/2/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft range)	25-29	25-29	25-29	25-29	24-28	24-28	22-26	24-28	24-28
Volatile Organic Compounds (ug/L)									
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
1,1,1-Trichloroethane (TCA)	1 U	2 U	2 U	2 U	1 U	1 U	1 U	10 U	10 U
1,1,2,2-Tetrachloroethane	1 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA	10 U
1,1,2-Trichloroethane	1 U	2 U	2 U	2 U	1 U	1 U	1 U	10 U	10 U
1,1-Dichloroethane	1 U	2 U	3.2	2 U	14	0.7 J	1 U	10 U	1 J
1,1-Dichloroethene	1 U	2 U	15.4	2 U	2.4	1 U	3.2	10 U	1 J
1,1-Dichloropropene	2 U	2 U	2 U	2 U	1 U	1 U	1 U	10 U	1 U
1,2,3-Trichlorobenzene	2 U	2 U	2 U	2 U	5 U	5 U	5 U	50 U	0.46 J
1,2,3-Trichloropropane	NA	NA	NA	NA	2 U	2 U	2 U	20 U	2 U
1,2,4-Trichlorobenzene	2 U	2 U	2 U	2 U	5 U	5 U	5 U	50 U	10 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	13.9	2 U	2 U	2 U	35	0.32 J
1,2-Dibromo-3-chloropropane (DBCP)	2 U	2 U	2 U	2 U	5 U	5 U	5 U	50 U	10 U
1,2-Dibromoethane (EDB)	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	10 U
1,2-Dichlorobenzene (o-)	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	10 U
1,2-Dichloroethane	1 U	2 U	2 U	2 U	1 U	1 U	1 U	10 U	10 U
1,2-Dichloroethene (cis)	460 D	2 U	2 U	2.5	31	0.75 J	800	7.2 J	7 J
1,2-Dichloroethene (total)	460 D	NA	NA	NA	NA	NA	NA	NA	7 J
1,2-Dichloroethene (trans)	3	2 U	2 U	2 U	1 U	1 U	0.82 J	10 U	10 U
1,2-Dichloropropane	1 U	2 U	2 U	2 U	1 U	1 U	1 U	10 U	10 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	4.5	2 U	2 U	2 U	13 J	2 U
1,3-Dichlorobenzene (m-)	2 U	2 U	2 U	2 U	2 U	0.65 J	2 U	20 U	10 U
1,3-Dichloropropane	2 U	2 U	2 U	2 U	1 U	1 U	1 U	10 U	1 U
1,3-Dichloropropene (cis)	1 U	2 U	2 U	2 U	1 U	1 U	1 U	10 U	10 U
1,3-Dichloropropene (trans)	1 U	2 U	2 U	2 U	1 U	1 U	1 U	10 U	10 U
1,4-Dichlorobenzene (p-)	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	10 U
2,2-Dichloropropane	2 U	2 U	2 U	2 U	1 U	1 U	1 U	10 U	1 U
2-Butanone (MEK)	5 U	NA	NA	NA	NA	NA	NA	NA	10 U
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
2-Hexanone (MBK)	5 U	NA	NA	NA	NA	NA	NA	NA	10 U
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	24	2 U
4-Methyl-2-pentanone (MIBK)	5 U	NA	NA	NA	NA	NA	NA	NA	10 U
Acetone	5 U	NA	NA	NA	NA	NA	NA	NA	10 U
Benzene	1	2.4	2 U	27.7	16	0.78 J	1.95	57	4 J
Bromobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
Bromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
Bromodichloromethane	1 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	10 U
Bromoform	1 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	10 U
Bromomethane	2 U	2 U	2 U	2 U	5 U	5 U	5 U	50 U	10 U
Butylbenzene, sec-	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
Butylbenzene, tert-	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
Carbon Disulfide	1 U	NA	NA	NA	NA	NA	NA	NA	10 U
Carbon Tetrachloride	1 UJ	2 U	2 U	2 U	1 U	1 U	1 U	10 U	10 U

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW23-01	SWMU318-GW25-01	SWMU318-GW26-01	SWMV318-GW28-01	SWMU318-GW31-01	SWMU318-GW32-01	SWMU318-GW34-01	SWMU318-GW37-01	SWMU318-GW51-01
SAMPLE DATE	6/23/2004	6/23/04	6/23/04	6/24/04	2/3/2005	2/3/2005	2/2/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft range)	25-29	25-29	25-29	25-29	24-28	24-28	22-26	24-28	24-28
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	1 U	2 U	2 U	2 U	1 U	1 U	1 U	10 U	10 U
Chloroethane	2 U	2 U	2 U	2 U	5 U	5 U	5 U	50 U	10 U
Chloroform	1 U	2 U	2 U	2 U	1 U	0.44 J	1 U	10 U	10 U
Chloromethane	2 U	2 U	2 U	2 U	5 U	5 U	5 U	50 U	10 U
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	10 U
Dibromochloromethane	1 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	10 U
Dibromomethane	NA	NA	NA	NA	2 U	2 U	2 U	20 U	2 U
Dichlorodifluoromethane (Freon-12)	2 U	2 U	2 U	2 U	5 U	5 U	5 U	50 U	10 U
Ethylbenzene	1 U	2 U	2 U	27.2	1 U	1 U	0.295 J	42	10 U
Hexachlorobutadiene	2 U	2 U	2 U	2 U	5 U	5 U	5 U	50 U	5 U
Isopropylbenzene (Cumene)	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.6 J	10 U
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	10 U
Methyl Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	10 U
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	NA	NA	NA	NA	10 U
Methylene Chloride	2 U	2 U	2 U	2 U	5 U	5 U	5 U	50 U	10 U
Naphthalene	2 U	2 U	2 U	530	9.7	0.8 J	5 U	1500	0.68 J
n-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	0.31 J
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.4 J	2 U
Styrene (Ethenylbenzene)	1 U	2 U	2 U	2 U	1 U	1 U	1 U	10 U	10 U
Tetrachloroethene (PCE)	1 U	2 U	2 U	2 U	1 U	1 U	1 U	10 U	10 U
Toluene	3	2 U	2 U	2 U	0.49 J	1 U	50	100	10 U
Trichloroethene (TCE)	140	5.2	2 U	14.4	74	4.8	470	3.2 J	4 J
Trichlorofluoromethane	NA	NA	NA	NA	5 U	5 U	5 U	50 U	10 U
Vinyl Chloride	140	2 U	2 U	2 U	2 U	2 U	75	6.3 J	10 U
Xylene, m/p-	2 U	4 U	4 U	27.2	2 U	2 U	0.54 J	79	10 U
Xylene, o-	0.3 J	2 U	2 U	2 U	1 U	1 U	0.32 J	47	10 U
Xylenes, total	0.9 J	NA	NA	NA	NA	NA	NA	NA	10 U
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	NA	NA	NA	NA	NA	NA	10 U	NA	NA
2,2'-Oxybis[1-chloropropane]	NA	NA	NA	NA	NA	NA	10 U	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	25 U	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	10 U	NA	NA
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	10 U	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	10 U	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	25 U	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
2-Chlorophenol	NA	NA	NA	NA	NA	NA	10 U	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
2-Methylphenol (o-Cresol)	NA	NA	NA	NA	NA	NA	10 U	NA	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	25 U	NA	NA
2-Nitrophenol	NA	NA	NA	NA	NA	NA	10 U	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	10 U	NA	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	25 U	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	25 U	NA	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW23-01	SWMU318-GW25-01	SWMU318-GW26-01	SWMV318-GW28-01	SWMU318-GW31-01	SWMU318-GW32-01	SWMU318-GW34-01	SWMU318-GW37-01	SWMU318-GW51-01
SAMPLE DATE	6/23/2004	6/23/04	6/23/04	6/24/04	2/3/2005	2/3/2005	2/2/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft range)	25-29	25-29	25-29	25-29	24-28	24-28	22-26	24-28	24-28
Semivolatile Organic Compounds (ug									
4-Bromophenyl-phenylether	NA	NA	NA	NA	NA	NA	10 U	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	10 U	NA	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	10 U	NA	NA
4-Chlorophenyl-phenylether	NA	NA	NA	NA	NA	NA	10 U	NA	NA
4-Methylphenol (p-Cresol)	NA	NA	NA	NA	NA	NA	10 U	NA	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	25 U	NA	NA
4-Nitrophenol	NA	NA	NA	NA	NA	NA	25 U	NA	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Acenaphthylene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Acetophenone	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Anthracene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Atrazine	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Benzaldehyde	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Bis(2-chloroethoxy)methane	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Bis(2-chloroethyl)ether	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP	NA	NA	NA	NA	NA	NA	9 J	NA	NA
Butyl Benzyl Phthalate	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Caprolactam	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Dibenzofuran	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Diethyl Phthalate (DEP)	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Dimethyl Phthalate	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Di-n-butyl Phthalate (DBP)	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Di-n-octyl Phthalate	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Hexachloroethane	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Isophorone	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
n-Nitrosodi-n-propylamine	NA	NA	NA	NA	NA	NA	10 U	NA	NA
n-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	25 U	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Phenol	NA	NA	NA	NA	NA	NA	10 U	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	10 U	NA	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW23-01	SWMU318-GW25-01	SWMU318-GW26-01	SWMV318-GW28-01	SWMU318-GW31-01	SWMU318-GW32-01	SWMU318-GW34-01	SWMU318-GW37-01	SWMU318-GW51-01
SAMPLE DATE	6/23/2004	6/23/04	6/23/04	6/24/04	2/3/2005	2/3/2005	2/2/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft range)	25-29	25-29	25-29	25-29	24-28	24-28	22-26	24-28	24-28
Total Metals (ug/L)									
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-MW02	SWMU318-MW03	318-MW02-05A	318-MW03-05A	86-GW02IW-05A	SWMU318-GW01	SWMU318-GW02	SWMU318-GW03	SWMU318-GW06
SAMPLE DATE	4/4/2004	4/4/2004	2/16/2005	2/16/2005	2/16/2005	3/19/2004	3/17/2004	3/18/2004	3/17/2004
SAMPLE DEPTH (ft range)	20-30	20-30	20-30	20-30	20-30	12-16	10-14	12-16	15-19
Volatile Organic Compounds (ug/L)									
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane (TCA)	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10 U	170	10 U	140	10 U	10 U	NA	NA	NA
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
1,1-Dichloroethane	10 U	10 U	10 U	1 J	10 U	10 U	2 U	2 U	2 U
1,1-Dichloroethene	2 J	10 U	3 J	3 J	10 U	10 U	2 U	2 U	4
1,1-Dichloropropene	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	2 J	2 U	2 U	1 J
1,2-Dibromo-3-chloropropane (DBCP)	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
1,2-Dibromoethane (EDB)	NA	NA	10 U	10 U	10 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	10 U	10 U	1 J	10 U	10 U	10 U	2 U	0.4 J	0.4 J
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	120	570 D	91	640	10 U	2 J	1 J	0.6 J	54 D
1,2-Dichloroethene (total)	120	570 D	93	640	10 U	2 J	NA	NA	NA
1,2-Dichloroethene (trans)	2 J	1.5 J	2 J	1 J	10 U	10 U	2 U	2 U	1 J
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	10 U	10 U	10 U	10 U	10 U	10 U	2 U	0.7 J	2 U
1,3-Dichloropropane	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
1,3-Dichloropropene (cis)	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
1,3-Dichloropropene (trans)	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	10 U	10 U	10 U	10 U	10 U	10 U	2	0.9 J	2 U
2,2-Dichloropropane	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
2-Butanone (MEK)	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ	NA	NA	NA
2-Chlorotoluene	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
2-Hexanone (MBK)	10 UJ	10 UJ	10 U	10 U	10 U	10 U	NA	NA	NA
4-Chlorotoluene	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
4-Isopropyltoluene	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
4-Methyl-2-pentanone (MIBK)	10 U	10 U	10 U	10 U	10 U	10 U	NA	NA	NA
Acetone	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ	NA	NA	NA
Benzene	38	3 J	29.5	2 J	10 U	10 U	2 U	2 U	0.2 J
Bromobenzene	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
Bromochloromethane	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
Butylbenzene, sec-	NA	NA	NA	NA	NA	5	2 U	2 U	2 U
Butylbenzene, tert-	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	NA	NA	NA
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-MW02	SWMU318-MW03	318-MW02-05A	318-MW03-05A	86-GW02IW-05A	SWMU318-GW01	SWMU318-GW02	SWMU318-GW03	SWMU318-GW06
SAMPLE DATE	4/4/2004	4/4/2004	2/16/2005	2/16/2005	2/16/2005	3/19/2004	3/17/2004	3/18/2004	3/17/2004
SAMPLE DEPTH (ft range)	20-30	20-30	20-30	20-30	20-30	12-16	10-14	12-16	15-19
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
Cyclohexane	10 U	10 U	10 U	10 U	10 U	10 U	NA	NA	NA
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
Dibromomethane	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
Dichlorodifluoromethane (Freon-12)	10 U	10 U	10 U	2 J	10 U	10 U	2 U	2 U	2 U
Ethylbenzene	30	3 J	20	5 J	10 U	1 J	0.7 J	0.6 J	0.7 J
Hexachlorobutadiene	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U
Isopropylbenzene (Cumene)	2 J	3 J	1 J	10 U	10 U	2 J	1 J	2 U	2 U
Methyl Acetate	10 U	10 U	10 U	10 U	10 U	10 U	NA	NA	NA
Methyl Cyclohexane	10 U	8.5	10 U	10 U	10 U	1 J	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	10 U	10 U	10 U	10 U	10 U	10 U	NA	NA	NA
Methylene Chloride	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
Naphthalene	NA	NA	NA	NA	NA	5	2 J	2 U	2 U
n-Butylbenzene	NA	NA	NA	NA	NA	32	2 U	0.5 J	2 U
n-Propylbenzene	NA	NA	NA	NA	NA	4	2 U	2 U	2 U
Styrene (Ethenylbenzene)	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
Tetrachloroethene (PCE)	10 U	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U
Toluene	10	28	5 J	26	10 U	10 U	0.8 J	0.7 J	0.8 J
Trichloroethene (TCE)	240 D	980 D	78.5	940	10 U	10 U	2	1 J	27
Trichlorofluoromethane	10 U	10 U	10 U	10 U	10 U	10 U	NA	NA	NA
Vinyl Chloride	13	92	14	110	10 U	10 U	2 U	2 U	16
Xylene, m/p-	19	2 J	9 J	4 J	10 U	10 U	4 U	4 U	4 U
Xylene, o-	8 J	5 J	3 J	5 J	10 U	10 U	2 U	2 U	1 J
Xylenes, total	27	7 J	12	9 J	10 U	10 U	NA	NA	NA
Semivolatile Organic Compounds (ug/									
1,1'-Biphenyl	8 J	10 U	6 J	10 U	10 U	10 U	10 U	10 U	NA
2,2'-Oxybis[1-chloropropane]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
2,4-Dimethylphenol	70.5	10 U	33.5	10 U	10 U	10 U	10 U	10 U	NA
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
2-Methylnaphthalene	79.5 D	10 U	35.5	10 U	10 U	10 U	10 U	10 U	NA
2-Methylphenol (o-Cresol)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	NA
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-MW02	SWMU318-MW03	318-MW02-05A	318-MW03-05A	86-GW02IW-05A	SWMU318-GW01	SWMU318-GW02	SWMU318-GW03	SWMU318-GW06
SAMPLE DATE	4/4/2004	4/4/2004	2/16/2005	2/16/2005	2/16/2005	3/19/2004	3/17/2004	3/18/2004	3/17/2004
SAMPLE DEPTH (ft range)	20-30	20-30	20-30	20-30	20-30	12-16	10-14	12-16	15-19
Semivolatile Organic Compounds (ug									
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
4-Methylphenol (p-Cresol)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
4-Nitroaniline	25 UJ	25 UJ	25 U	25 U	25 U	25 UJ	25 UJ	25 UJ	NA
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA
Acenaphthene	33.5	10 U	29.5	10 U	10 U	10 U	10 U	10 U	NA
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Acetophenone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Atrazine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Benzaldehyde	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Benzo(b)fluoranthene	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	NA
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Bis(2-ethylhexyl) Phthalate (BEHP	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Butyl Benzyl Phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Caprolactam	10 U	10 U	10 U	5 J	10 U	10 U	10 U	10 U	NA
Carbazole	9.5	10 U	8.5 J	10 U	10 U	10 U	10 U	10 U	NA
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Dibenzofuran	9.5	10 U	9.5	10 U	10 U	10 U	10 U	10 U	NA
Diethyl Phthalate (DEP)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Dimethyl Phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Di-n-butyl Phthalate (DBP)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Di-n-octyl Phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Fluorene	8.5	10 U	7.5 J	10 U	10 U	10 U	10 U	10 U	NA
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	2 U	2 U	2 U	2 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ	NA
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Naphthalene	310 D	10 U	280	10 U	10 U	5	2 J	2 U	2 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
n-Nitrosodi-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
n-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Phenol	10 U	38	10 U	10 U	10 U	10 U	10 U	10 U	NA
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-MW02	SWMU318-MW03	318-MW02-05A	318-MW03-05A	86-GW02IW-05A	SWMU318-GW01	SWMU318-GW02	SWMU318-GW03	SWMU318-GW06
SAMPLE DATE	4/4/2004	4/4/2004	2/16/2005	2/16/2005	2/16/2005	3/19/2004	3/17/2004	3/18/2004	3/17/2004
SAMPLE DEPTH (ft range)	20-30	20-30	20-30	20-30	20-30	12-16	10-14	12-16	15-19
Total Metals (ug/L)									
Arsenic	3.03 U	3.03 U	3.03 U	3.1 U	3.03 U	NA	NA	NA	NA
Barium	7.1 J	25.1 J	2.45 U	2.4 U	3.4 U	NA	NA	NA	NA
Cadmium	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA	NA	NA	NA
Chromium	0.8 U	10 U	0.8 U	0.8 U	0.8 U	NA	NA	NA	NA
Lead	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	NA	NA	NA	NA
Mercury	0.01 U	0.01 U	0.03 U	0.07 U	0.07 U	NA	NA	NA	NA
Selenium	3.71 U	3.71 U	3.71 U	3.71 U	3.71 U	NA	NA	NA	NA
Silver	0.7 U	0.7 U	0.785 U	0.7 U	0.7 U	NA	NA	NA	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW07	SWMU318-GW09	SWMU318-GW10	SWMU318-GW13	SWMU318-GW14	SWMU-GW16	SWMU318-GW17	SWMU318-GW18	SWMU318-GW19
SAMPLE DATE	3/18/2004	3/19/2004	3/20/2004	3/20/2004	3/22/2004	6/21/04	6/23/2004	6/21/04	6/21/2004
SAMPLE DEPTH (ft range)	10-14	12-16	15-19	12-16	12-16	10-14	10-14	10-14	10-14
Volatile Organic Compounds (ug/L)									
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane (TCA)	10 U	0.7 J	2 U	10 U	10 U	2 U	1 U	2 U	2 U
1,1,2,2-Tetrachloroethane	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10 U	NA	NA	54	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
1,1-Dichloroethane	10 U	4	2 U	10 U	10 U	2 U	1 U	3.2	2 U
1,1-Dichloroethene	10 U	3	2 U	10 U	10 U	2 U	1 U	14.6	2 U
1,1-Dichloropropene	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	10 U	2 U	2 U	10 U	10 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	2 U	17	2 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane (DBCP)	10 U	2 U	2 U	10 R	10 U	2 U	2 U	2 U	2 U
1,2-Dibromoethane (EDB)	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	10 U	2 U	2 U	10 U	10 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
1,2-Dichloroethene (cis)	10 U	15	3	19	86	4.7	0.9 J	2 U	2.6
1,2-Dichloroethene (total)	10 U	NA	NA	19	NA	NA	0.9 J	NA	NA
1,2-Dichloroethene (trans)	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
1,2-Dichloropropane	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	10 U	2 U	2 U	10 U	10 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
1,3-Dichloropropene (cis)	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
1,3-Dichloropropene (trans)	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
1,4-Dichlorobenzene (p-)	10 U	2 U	2 U	10 U	10 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
2-Butanone (MEK)	10 UJ	NA	NA	10 U	NA	NA	5 U	NA	NA
2-Chlorotoluene	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
2-Hexanone (MBK)	10 U	NA	NA	10 U	NA	NA	5 U	NA	NA
4-Chlorotoluene	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	0.7 J	2 U	2 U	2 U	6.4 J	2 U	2 U	2 U	2 U
4-Methyl-2-pentanone (MIBK)	10 U	NA	NA	10 U	NA	NA	5 U	NA	NA
Acetone	10 UJ	NA	NA	10 U	NA	NA	5 U	NA	NA
Benzene	10 U	2 U	2 U	10 U	14	2 U	1 U	2 U	2 U
Bromobenzene	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
Bromochloromethane	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
Bromodichloromethane	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
Bromoform	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
Bromomethane	10 U	2 U	2 U	10 U	10 U	2 U	2 U	2 U	2 U
Butylbenzene, sec-	2 U	0.9 J	2 U	2 U	10 U	2 U	2 U	2 U	2 U
Butylbenzene, tert-	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
Carbon Disulfide	10 U	NA	NA	10 U	NA	NA	0.4 J	NA	NA
Carbon Tetrachloride	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW07	SWMU318-GW09	SWMU318-GW10	SWMU318-GW13	SWMU318-GW14	SWMU-GW16	SWMU318-GW17	SWMU318-GW18	SWMU318-GW19
SAMPLE DATE	3/18/2004	3/19/2004	3/20/2004	3/20/2004	3/22/2004	6/21/04	6/23/2004	6/21/04	6/21/2004
SAMPLE DEPTH (ft range)	10-14	12-16	15-19	12-16	12-16	10-14	10-14	10-14	10-14
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
Chloroethane	10 U	2 U	2 U	10 U	10 U	2 U	2 U	2 U	2 U
Chloroform	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
Chloromethane	10 U	2 U	2 U	10 U	10 U	2 U	2 U	2 U	2 U
Cyclohexane	10 U	NA	NA	10 U	NA	NA	NA	NA	NA
Dibromochloromethane	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
Dibromomethane	2 U	2 U	2 U	2 U	10 U	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	10 U	2 U	2 U	10 U	10 U	2 U	2 U	2 U	2.3
Ethylbenzene	10 U	2 U	2 U	10 U	8.1 J	2 U	1 U	2 U	2 U
Hexachlorobutadiene	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
Isopropylbenzene (Cumene)	10 U	2 U	2 U	10 U	10 U	2 U	2 U	2 U	2 U
Methyl Acetate	10 U	NA	NA	10 U	NA	NA	NA	NA	NA
Methyl Cyclohexane	10 U	NA	NA	10 U	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	10 U	NA	NA	10 U	NA	NA	NA	NA	NA
Methylene Chloride	10 U	2 U	2 U	10 U	10 U	2 U	2 U	2 U	2 U
Naphthalene	2 U	4	2 U	2 U	328	2 U	2 U	6.4	2 U
n-Butylbenzene	2 U	2 U	2 U	2 U	49	2 U	2 U	2 U	2 U
n-Propylbenzene	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
Tetrachloroethene (PCE)	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
Toluene	10 U	0.7 J	0.3 J	10 U	4 J	2 U	3	2 U	2 U
Trichloroethene (TCE)	10 U	6	3	57	60	2 U	0.3 J	2 U	2 U
Trichlorofluoromethane	10 U	NA	NA	10 U	NA	NA	NA	NA	NA
Vinyl Chloride	10 U	1 J	2 U	10 U	10 U	2 U	2 U	2 U	2 U
Xylene, m/p-	10 U	4 U	0.5 J	10 U	4 J	4 U	2 U	4 U	4 U
Xylene, o-	10 U	2 U	2 U	10 U	10 U	2 U	1 U	2 U	2 U
Xylenes, total	10 U	NA	NA	10 U	NA	NA	3 U	NA	NA
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
2,2'-Oxybis[1-chloropropane]	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	25 U	25 U	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	25 U	25 U	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
2-Methylphenol (o-Cresol)	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	25 U	25 U	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	25 U	25 U	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	25 U	25 U	NA	NA	NA	NA	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW07	SWMU318-GW09	SWMU318-GW10	SWMU318-GW13	SWMU318-GW14	SWMU-GW16	SWMU318-GW17	SWMU318-GW18	SWMU318-GW19
SAMPLE DATE	3/18/2004	3/19/2004	3/20/2004	3/20/2004	3/22/2004	6/21/04	6/23/2004	6/21/04	6/21/2004
SAMPLE DEPTH (ft range)	10-14	12-16	15-19	12-16	12-16	10-14	10-14	10-14	10-14
Semivolatile Organic Compounds (ug									
4-Bromophenyl-phenylether	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
4-Methylphenol (p-Cresol)	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	25 UJ	25 UJ	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	25 U	25 U	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Acenaphthylene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Acetophenone	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Anthracene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Atrazine	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Benzaldehyde	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Bis(2-chloroethoxy)methane	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Bis(2-chloroethyl)ether	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Butyl Benzyl Phthalate	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Caprolactam	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Carbazole	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Chrysene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Dibenzofuran	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Diethyl Phthalate (DEP)	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Dimethyl Phthalate	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Di-n-butyl Phthalate (DBP)	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Di-n-octyl Phthalate	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Fluorene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Hexachlorobutadiene	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U
Hexachlorocyclopentadiene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Hexachloroethane	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Isophorone	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Naphthalene	2 U	4	2 U	2 U	328	2 U	2 U	6.4	2 U
Nitrobenzene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
n-Nitrosodi-n-propylamine	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	25 U	25 U	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Phenol	NA	NA	10 U	10 U	NA	NA	NA	NA	NA
Pyrene	NA	NA	10 U	10 U	NA	NA	NA	NA	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW07	SWMU318-GW09	SWMU318-GW10	SWMU318-GW13	SWMU318-GW14	SWMU-GW16	SWMU318-GW17	SWMU318-GW18	SWMU318-GW19
SAMPLE DATE	3/18/2004	3/19/2004	3/20/2004	3/20/2004	3/22/2004	6/21/04	6/23/2004	6/21/04	6/21/2004
SAMPLE DEPTH (ft range)	10-14	12-16	15-19	12-16	12-16	10-14	10-14	10-14	10-14
Total Metals (ug/L)									
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW20	SWMU318-GW23	SWMU318-GW25	SWMV318-GW28	SWMU318-GW31	SWMU318-GW32	SWMU318-GW34	SWMU318-GW37	SWMU318-GW51
SAMPLE DATE	6/21/04	6/23/04	6/23/04	6/24/04	2/3/2005	2/3/2005	2/2/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft range)	10-14	10-14	10-14	10-14	12-16	12-16	12-16	12-16	12-16
Volatile Organic Compounds (ug/L)									
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U
1,1,1-Trichloroethane (TCA)	2 U	2 U	2 U	2 U	10 U	1 U	1 U	10 U	1 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	10 U	2 U	2 U	10 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	10 U	NA	NA	10 U	NA
1,1,2-Trichloroethane	2 U	2 U	2 U	2 U	10 U	1 U	1 U	10 U	1 U
1,1-Dichloroethane	2 U	2 U	2 U	2 U	10 U	4.5	1 U	10 U	0.33 J
1,1-Dichloroethene	2 U	2 U	2 U	2 U	10 U	2.6	1 U	10 U	1 U
1,1-Dichloropropene	2 U	2 U	2 U	2 U	1 U	1 U	1 U	5 U	1 U
1,2,3-Trichlorobenzene	2 U	2 U	2 U	2 U	5 U	5 U	5 U	2.4 J	0.52 J
1,2,3-Trichloropropane	NA	NA	NA	NA	2 U	2 U	2 U	10 U	2 U
1,2,4-Trichlorobenzene	2 U	2 U	2 U	2 U	10 U	5 U	5 U	10 U	0.45 J
1,2,4-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	8.6 J	0.42 J
1,2-Dibromo-3-chloropropane (DBCP)	2 U	2 U	2 U	2 U	10 U	5 U	5 U	10 U	5 U
1,2-Dibromoethane (EDB)	2 U	2 U	2 U	2 U	10 U	2 U	2 U	10 U	2 U
1,2-Dichlorobenzene (o-)	2 U	2 U	2 U	2 U	10 U	2 U	2 U	10 U	2 U
1,2-Dichloroethane	2 U	2 U	2 U	2 U	10 U	1 U	1 U	10 U	1 U
1,2-Dichloroethene (cis)	2 U	2 U	31.6	3.8	10 U	10	1 U	2 J	1.7
1,2-Dichloroethene (total)	NA	NA	NA	NA	10 U	NA	NA	2 J	NA
1,2-Dichloroethene (trans)	2 U	2 U	2 U	2 U	10 U	1 U	1 U	10 U	1 U
1,2-Dichloropropane	2 U	2 U	2 U	2 U	10 U	1 U	1 U	10 U	1 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	3.4 J	0.35 J
1,3-Dichlorobenzene (m-)	2 U	2 U	2 U	2 U	10 U	2 U	2 U	10 U	2 U
1,3-Dichloropropane	2 U	2 U	2 U	2 U	1 U	1 U	1 U	5 U	1 U
1,3-Dichloropropene (cis)	2 U	2 U	2 U	2 U	10 U	1 U	1 U	10 U	1 U
1,3-Dichloropropene (trans)	2 U	2 U	2 U	2 U	10 U	1 U	1 U	10 U	1 U
1,4-Dichlorobenzene (p-)	2 U	2 U	2 U	2 U	10 U	2 U	2 U	10 U	2 U
2,2-Dichloropropane	2 U	2 U	2 U	2 U	1 U	1 U	1 U	5 U	1 U
2-Butanone (MEK)	NA	NA	NA	NA	10 U	NA	NA	10 U	NA
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U
2-Hexanone (MBK)	NA	NA	NA	NA	10 U	NA	NA	10 U	NA
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1.6 J	2 U
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	10 U	NA	NA	10 U	NA
Acetone	NA	NA	NA	NA	10 U	NA	NA	10 U	NA
Benzene	2 U	2 U	2 U	2 U	10 U	7.2	1 U	17	1 U
Bromobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U
Bromochloromethane	2 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U
Bromodichloromethane	2 U	2 U	2 U	2 U	10 U	2 U	2 U	10 U	2 U
Bromoform	2 U	2 U	2 U	2 U	10 U	2 U	2 U	10 U	2 U
Bromomethane	2 U	2 U	2 U	2 U	10 U	5 U	5 U	10 U	5 U
Butylbenzene, sec-	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.58 J	2 U
Butylbenzene, tert-	2 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U
Carbon Disulfide	NA	NA	NA	NA	10 U	NA	NA	10 U	NA
Carbon Tetrachloride	2 U	2 U	2 U	2 U	10 U	1 U	1 U	10 U	1 U

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW20	SWMU318-GW23	SWMU318-GW25	SWMV318-GW28	SWMU318-GW31	SWMU318-GW32	SWMU318-GW34	SWMU318-GW37	SWMU318-GW51
SAMPLE DATE	6/21/04	6/23/04	6/23/04	6/24/04	2/3/2005	2/3/2005	2/2/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft range)	10-14	10-14	10-14	10-14	12-16	12-16	12-16	12-16	12-16
Volatile Organic Compounds (ug/kg)									
Chlorobenzene	2 U	2 U	2 U	2 U	10 U	1 U	1 U	10 U	1 U
Chloroethane	2 U	2 U	2 U	2 U	10 U	5 U	5 U	10 U	5 U
Chloroform	2 U	2 U	2 U	2 U	10 U	1 U	1 U	10 U	1 U
Chloromethane	2 U	2 U	2 U	2 U	10 U	5 U	5 U	10 U	5 U
Cyclohexane	NA	NA	NA	NA	10 U	NA	NA	10 U	NA
Dibromochloromethane	2 U	2 U	2 U	2 U	10 U	2 U	2 U	10 U	2 U
Dibromomethane	NA	NA	NA	NA	2 U	2 U	2 U	10 U	2 U
Dichlorodifluoromethane (Freon-12)	2 U	2 U	2 U	2 U	10 U	5 U	5 U	10 U	5 U
Ethylbenzene	2 U	2 U	2 U	2 U	10 U	1 U	1 U	15	1 U
Hexachlorobutadiene	2 U	2 U	2 U	2 U	5 U	5 U	5 U	25 U	5 U
Isopropylbenzene (Cumene)	2 U	2 U	2 U	2 U	10 U	2 U	2 U	10 U	2 U
Methyl Acetate	NA	NA	NA	NA	10 U	NA	NA	10 U	NA
Methyl Cyclohexane	NA	NA	NA	NA	10 U	NA	NA	10 U	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	NA	10 U	NA	NA	10 U	NA
Methylene Chloride	2 U	2 U	2 U	2 U	10 U	5 U	5 U	10 U	5 U
Naphthalene	2 U	2 U	2 U	4.4	5 U	4.3 J	5 U	630	0.84 J
n-Butylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U	0.35 J
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.85 J	2 U
Styrene (Ethenylbenzene)	2 U	2 U	2 U	2 U	10 U	1 U	1 U	10 U	1 U
Tetrachloroethene (PCE)	2 U	2 U	2 U	2 U	10 U	1 U	1 U	10 U	1 U
Toluene	2 U	2 U	2 U	2 U	10 U	1 U	1 U	12	1 U
Trichloroethene (TCE)	2 U	2 U	2 U	2 U	10 U	20	1 U	10 U	2.4
Trichlorofluoromethane	NA	NA	NA	NA	10 U	5 U	5 U	10 U	5 U
Vinyl Chloride	2 U	2 U	2 U	2 U	10 U	0.57 J	2 U	10 U	2 U
Xylene, m/p-	4 U	4 U	4 U	4 U	10 U	2 U	2 U	32	2 U
Xylene, o-	2 U	2 U	2 U	2 U	10 U	1 U	1 U	15	1 U
Xylenes, total	NA	NA	NA	NA	10 U	NA	NA	47	NA
Semivolatile Organic Compounds (ug									
1,1'-Biphenyl	NA	NA	NA	NA	10 U	10 U	10 U	32	NA
2,2'-Oxybis[1-chloropropane]	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	25 U	25 U	25 U	25 U	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
2,4-Dichlorophenol	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
2,4-Dimethylphenol	NA	NA	NA	NA	10 U	10 U	10 U	28 J	NA
2,4-Dinitrophenol	NA	NA	NA	NA	25 U	25 U	25 U	25 U	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
2-Chloronaphthalene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
2-Chlorophenol	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
2-Methylnaphthalene	NA	NA	NA	NA	10 U	10 U	10 U	68	NA
2-Methylphenol (o-Cresol)	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
2-Nitroaniline	NA	NA	NA	NA	25 U	25 U	25 U	25 U	NA
2-Nitrophenol	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
3-Nitroaniline	NA	NA	NA	NA	25 U	25 U	25 U	25 U	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	25 U	25 U	25 U	25 U	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW20	SWMU318-GW23	SWMU318-GW25	SWMV318-GW28	SWMU318-GW31	SWMU318-GW32	SWMU318-GW34	SWMU318-GW37	SWMU318-GW51
SAMPLE DATE	6/21/04	6/23/04	6/23/04	6/24/04	2/3/2005	2/3/2005	2/2/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft range)	10-14	10-14	10-14	10-14	12-16	12-16	12-16	12-16	12-16
Semivolatile Organic Compounds (ug									
4-Bromophenyl-phenylether	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
4-Chloroaniline	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
4-Chlorophenyl-phenylether	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
4-Methylphenol (p-Cresol)	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
4-Nitroaniline	NA	NA	NA	NA	25 U	25 U	25 U	25 U	NA
4-Nitrophenol	NA	NA	NA	NA	25 U	25 U	25 U	25 U	NA
Acenaphthene	NA	NA	NA	NA	10 U	10 U	10 U	72	NA
Acenaphthylene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Acetophenone	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Anthracene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Atrazine	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Benzaldehyde	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Benzo(a)anthracene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Benzo(a)pyrene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Bis(2-chloroethoxy)methane	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Bis(2-chloroethyl)ether	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Bis(2-ethylhexyl) Phthalate (BEHP	NA	NA	NA	NA	10 U	10 U	9 J	10 U	NA
Butyl Benzyl Phthalate	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Caprolactam	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Carbazole	NA	NA	NA	NA	10 U	10 U	10 U	49	NA
Chrysene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Dibenzofuran	NA	NA	NA	NA	10 U	10 U	10 U	56	NA
Diethyl Phthalate (DEP)	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Dimethyl Phthalate	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Di-n-butyl Phthalate (DBP)	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Di-n-octyl Phthalate	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Fluoranthene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Fluorene	NA	NA	NA	NA	10 U	10 U	10 U	50	NA
Hexachlorobenzene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Hexachlorobutadiene	2 U	2 U	2 U	2 U	5 U	5 U	5 U	25 U	5 U
Hexachlorocyclopentadiene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Hexachloroethane	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Isophorone	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Naphthalene	2 U	2 U	2 U	4.4	5 U	4.3 J	5 U	630	0.84 J
Nitrobenzene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
n-Nitrosodi-n-propylamine	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
n-Nitrosodiphenylamine	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Pentachlorophenol	NA	NA	NA	NA	25 U	25 U	25 U	25 U	NA
Phenanthrene	NA	NA	NA	NA	10 U	10 U	10 U	18	NA
Phenol	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA
Pyrene	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA

APPENDIX G (Continued)

SHALLOW/INTERMEDIATE GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW20	SWMU318-GW23	SWMU318-GW25	SWMV318-GW28	SWMU318-GW31	SWMU318-GW32	SWMU318-GW34	SWMU318-GW37	SWMU318-GW51
SAMPLE DATE	6/21/04	6/23/04	6/23/04	6/24/04	2/3/2005	2/3/2005	2/2/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft range)	10-14	10-14	10-14	10-14	12-16	12-16	12-16	12-16	12-16
Total Metals (ug/L)									
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX G (Continued)

DEEP GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW07-02	SWMU318-GW17-02	SWMU318-GW19-02	SWMU318-GW21-02	SWMU318-GW30-02
SAMPLE DATE	3/18/2004	6/23/2004	6/21/2004	6/22/04	6/24/04
SAMPLE DEPTH (ft range)	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)					
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane (TCA)	2 U	2 U	2 U	2 U	2 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethane	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	2 U	2.6	2 U	2.8	2 U
1,1-Dichloropropene	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane (DBCP)	2 U	2 U	2 U	2 U	2 U
1,2-Dibromoethane (EDB)	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethene (cis)	15	92.1	171	83.9	2 U
1,2-Dichloroethene (trans)	0.4 J	16.4	3.8	9.1	2 U
1,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropene (cis)	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropene (trans)	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene (p-)	2 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U

APPENDIX G (Continued)

DEEP GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW07-02	SWMU318-GW17-02	SWMU318-GW19-02	SWMU318-GW21-02	SWMU318-GW30-02
SAMPLE DATE	3/18/2004	6/23/2004	6/21/2004	6/22/04	6/24/04
SAMPLE DEPTH (ft range)	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L) (Cont)					
Benzene	0.8 J	2 U	2 U	2 U	2 U
Bromobenzene	2 U	2 U	2 U	2 U	2 U
Bromochloromethane	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	2 U	2 U	2 U
Bromomethane	2 U	2 U	2 U	2 U	2 U
Butylbenzene, sec-	0.9 J	2 U	2 U	2 U	2 U
Butylbenzene, tert-	2 U	2 U	2 U	2 U	2 U
Carbon Tetrachloride	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	2 U	2 U	2 U	2 U	2 U
Chloroethane	2 U	2 U	2 U	2 U	2 U
Chloroform	2 U	2 U	2 U	2 U	2 U
Chloromethane	2 U	2 U	2 U	2 U	2 U
Dibromochloromethane	2 U	2 U	2 U	2 U	2 U
Dibromomethane	2 U	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	0.9 J	2 U	2 U	2 U	2 U
Hexachlorobutadiene	2 U	2 U	2 U	2 U	2 U
Isopropylbenzene (Cumene)	1 J	2 U	2 U	2 U	2 U
Methylene Chloride	2 U	2 U	2 U	2 U	2 U
Naphthalene	2 U	2 U	2 U	2 U	2 U
n-Butylbenzene	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene (PCE)	2 U	2 U	2 U	2 U	2 U
Toluene	0.9 J	2 U	2 U	2 U	2 U
Trichloroethene (TCE)	28	2 U	2.6	2 U	12.2
Trichlorofluoromethane	NA	NA	NA	NA	NA
Vinyl Chloride	1 J	172	93.9	28.6	2 U
Xylene, m/p-	2 J	4 U	4 U	4 U	4 U
Xylene, o-	1 J	2 U	2 U	2 U	2 U

APPENDIX G (Continued)

DEEP GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW31-02	SWMU318-GW34-02	SWMU318-GW43-02	SWMU318-GW44-02	SWMU318-GW46-02
SAMPLE DATE	2/3/2005	2/2/2005	2/2/2005	2/3/2005	2/6/2005
SAMPLE DEPTH (ft range)	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L)					
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U
1,1,1-Trichloroethane (TCA)	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1.4	1 U	1 U	1 U	1 U
1,1-Dichloroethene	0.48 J	0.99 J	4.5	0.56 J	0.5 J
1,1-Dichloropropene	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U
1,2-Dibromo-3-chloropropane (DBCP)	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (cis)	5	32	38	95	51
1,2-Dichloroethene (trans)	1 U	1 U	8.8	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropane	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropene (cis)	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropene (trans)	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene (p-)	2 U	2 U	2 U	2 U	2 U
2,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U

APPENDIX G (Continued)

DEEP GROUNDWATER ANALYTICAL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW31-02	SWMU318-GW34-02	SWMU318-GW43-02	SWMU318-GW44-02	SWMU318-GW46-02
SAMPLE DATE	2/3/2005	2/2/2005	2/2/2005	2/3/2005	2/6/2005
SAMPLE DEPTH (ft range)	40-44	40-44	40-44	40-44	40-44
Volatile Organic Compounds (ug/L) (Cont					
Benzene	2.9	0.89 J	0.98 J	1.6	0.94 J
Bromobenzene	2 U	2 U	2 U	2 U	2 U
Bromochloromethane	2 U	2 U	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	2 U	2 U	2 U	2 U
Bromomethane	5 U	5 U	5 U	5 U	5 U
Butylbenzene, sec-	2 U	2 U	2 U	2 U	2 U
Butylbenzene, tert-	2 U	2 U	2 U	2 U	2 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U
Chloroethane	5 U	5 U	5 U	5 U	5 U
Chloroform	1 U	1 U	1 U	1 U	1 U
Chloromethane	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	2 U	2 U	2 U	2 U	2 U
Dibromomethane	2 U	2 U	2 U	2 U	2 U
Dichlorodifluoromethane (Freon-12)	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene (Cumene)	2 U	2 U	2 U	2 U	2 U
Methylene Chloride	5 U	5 U	5 U	5 U	5 U
Naphthalene	1 J	5 U	5 U	5 U	5 U
n-Butylbenzene	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	2 U	2 U	2 U	2 U	2 U
Styrene (Ethenylbenzene)	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	2.6	0.92 J	0.91 J	1 U
Trichloroethene (TCE)	8.1	400	1	1 U	0.36 J
Trichlorofluoromethane	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	2 U	1.1 J	23	172	36
Xylene, m/p-	2 U	2 U	2 U	2 U	2 U
Xylene, o-	1 U	1 U	1 U	1 U	1 U

Baker

Michael Baker Jr., Inc.

APPENDIX H

RAGS Part D Tables

TABLE 1
SELECTION OF EXPOSURE PATHWAYS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current	Surface Soil	Surface Soil	Surface Soil	Military Base Personnel	Adult	Ingestion Dermal	Quantitative	Current personnel may access site for work/training related activities
				Construction Workers	Adult	Ingestion Dermal	NA	Not a current receptor.
				Trespassers	Adolescent	Ingestion Dermal	NA	Not a current receptor.
				Residents	Adult and Young Child	Ingestion Dermal	NA	Not a current receptor.
		Air	Fugitive Dusts	Military Base Personnel	Adult	Inhalation	Quantitative	Current personnel may access site for work/training related activities
				Construction Workers	Adult	Inhalation	NA	Not a current receptor.
				Trespassers	Adolescent	Inhalation	NA	Not a current receptor.
				Residents	Adult and Young Child	Inhalation	NA	Not a current receptor.
	Subsurface Soil	Subsurface Soil	Subsurface Soil	Military Base Personnel	Adult	Ingestion Dermal	NA	Not currently exposed to this medium.
				Construction Workers	Adult	Ingestion Dermal	NA	Not a current receptor.
				Trespassers	Adolescent	Ingestion Dermal	NA	Not a current receptor.
				Residents	Adult and Young Child	Ingestion Dermal	NA	Not a current receptor.
		Air	Fugitive Dusts	Military Base Personnel	Adult	Inhalation	NA	Not currently exposed to this medium.
				Construction Workers	Adult	Inhalation	NA	Not a current receptor.
				Trespassers	Adolescent	Inhalation	NA	Not a current receptor.
				Residents	Adult and Young Child	Inhalation	NA	Not a current receptor.
	Groundwater	Groundwater	Groundwater	Military Base Personnel	Adult	Ingestion Dermal	NA	Not currently exposed to this medium.
				Construction Workers	Adult	Ingestion Dermal	NA	Not a current receptor.
				Trespassers	Adolescent	Ingestion Dermal	NA	Not a current receptor.
				Residents	Adult and Young Child	Ingestion Dermal	NA	Not a current receptor.
		Air	Volatiles in air	Residents	Adult	Inhalation	NA	Not a current receptor.

TABLE 1 (Continued)
SELECTION OF EXPOSURE PATHWAYS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Surface Soil	Surface Soil	Surface Soil	Military Base Personnel	Adult	Ingestion Dermal	NA	Not anticipated as a future receptor.
				Construction Workers	Adult	Ingestion Dermal	Quantitative	Future potential excavation or construction activities for development.
				Trespassers	Adolescent	Ingestion Dermal	NA	Not expected to be exposed to media.
				Residents	Adult and Young Child	Ingestion Dermal	Quantitative	Future potential residential development.
		Air	Fugitive Dusts	Military Base Personnel	Adult	Inhalation	NA	Not anticipated as a future receptor.
				Construction Workers	Adult	Inhalation	Quantitative	Future potential excavation or construction activities for development.
				Trespassers	Adolescent	Inhalation	Quantitative	Future potential access of the site without permission
				Residents	Adult and Young Child	Inhalation	Quantitative	Future potential residential development.
	Subsurface Soil	Subsurface Soil	Subsurface Soil	Military Base Personnel	Adult	Ingestion Dermal	NA	Not anticipated as a future receptor.
				Construction Workers	Adult	Ingestion Dermal	Quantitative	Future potential excavation or construction activities for development.
				Trespassers	Adolescent	Ingestion Dermal	NA	Not expected to be exposed to media.
				Residents	Adult and Young Child	Ingestion Dermal	Quantitative	Future potential residential development.
		Air	Fugitive Dusts	Military Base Personnel	Adult	Inhalation	NA	Not anticipated as a future receptor.
				Construction Workers	Adult	Inhalation	Quantitative	Future potential excavation or construction activities for development.
				Trespassers	Adolescent	Inhalation	NA	Not expected to be exposed to media.
				Residents	Adult and Young Child	Inhalation	Quantitative	Future potential residential development.

TABLE 1 (Continued)
SELECTION OF EXPOSURE PATHWAYS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future (Cont)	Shallow Groundwater	Groundwater	Groundwater	Military Base Personnel	Adult	Ingestion Dermal	NA	Not anticipated as a future receptor.
				Construction Workers	Adult	Dermal	Quantitative	Future potential excavation or construction activities for development.
				Trespassers	Adolescent	Ingestion Dermal	NA	Not expected to be exposed to media.
				Residents	Adult and Young Child	Ingestion Dermal	Quantitative	Future potential residential development.
		Air	Volatiles in air	Residents	Adult	Inhalation	Quantitative	Future potential residential development.
	Deep Groundwater	Groundwater	Groundwater	Military Base Personnel	Adult	Ingestion Dermal	NA	Not anticipated as a future receptor.
				Construction Workers	Adult	Ingestion Dermal	NA	Not expected to be exposed to media.
				Trespassers	Adolescent	Ingestion Dermal	NA	Not expected to be exposed to media.
				Residents	Adult and Young Child	Ingestion Dermal	Quantitative	Future potential residential development.
		Air	Volatiles in air	Residents	Adult	Inhalation	Quantitative	Future potential residential development.

TABLE 2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Surface Soil		**Volatile Organic Compounds (ug/kg)**													
	630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	µg/kg	NA	0/16	2.15U - 12U	ND	NA	3.19E+03 C	N/A	N/A	NO	ND
	71-55-6	1,1,1-Trichloroethane (TCA)	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	1.98E+05 N	N/A	N/A	NO	ND
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	µg/kg	NA	0/26	2.15U - 730U	ND	NA	4.08E+02 C	N/A	N/A	NO	ND
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ND	µg/kg	NA	0/10	5U - 12U	ND	NA	2.09E+06 N	N/A	N/A	NO	ND
	79-00-5	1,1,2-Trichloroethane	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	7.29E+02 C	N/A	N/A	NO	ND
	75-34-3	1,1-Dichloroethane	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	5.06E+04 N	N/A	N/A	NO	ND
	75-35-4	1,1-Dichloroethene	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	1.24E+04 N	N/A	N/A	NO	ND
	563-58-6	1,1-Dichloropropene	ND	ND	µg/kg	NA	0/16	1.07U - 12U	ND	NA	N/A	N/A	N/A	NO	ND
	87-61-6	1,2,3-Trichlorobenzene	0.7 J	1.93 J	µg/kg	SWMU318-SB16-00	4/16	5.36U - 12U	1.93	NA	6.22E+03 N (7)	N/A	N/A	NO	BSL
	96-18-4	1,2,3-Trichloropropane	ND	ND	µg/kg	NA	0/10	2.15U - 2.44U	ND	NA	3.40E+01 C	N/A	N/A	NO	ND
	120-82-1	1,2,4-Trichlorobenzene	0.53 J	0.94 J	µg/kg	SWMU318-SB26-00	2/22	5U - 12U	0.94	NA	6.22E+03 N	N/A	N/A	NO	BSL
	95-63-6	1,2,4-Trimethylbenzene	0.59 J	0.65 J	µg/kg	SWMU318-SB26-00	2/16	2.15U - 12U	0.65	NA	5.16E+03 N	N/A	N/A	NO	BSL
	96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	ND	ND	µg/kg	NA	0/22	5U - 12U	ND	NA	4.60E+02 C	N/A	N/A	NO	ND
	106-93-4	1,2-Dibromoethane (EDB)	ND	ND	µg/kg	NA	0/22	2.15U - 12U	ND	NA	3.20E+01 C	N/A	N/A	NO	ND
	95-50-1	1,2-Dichlorobenzene (o-)	9,200	9,200	µg/kg	SWMU318-SS01-00	1/30	1.1U - 12U	9,200	NA	1.10E+05 N	N/A	N/A	NO	BSL
	107-06-2	1,2-Dichloroethane	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	2.78E+02 C	N/A	N/A	NO	ND
	156-59-2	1,2-Dichloroethene (cis)	ND	ND	µg/kg	NA	0/22	1.07U - 12U	ND	NA	4.29E+03 N	N/A	N/A	NO	ND
	540-59-0	1,2-Dichloroethene (total)	ND	ND	µg/kg	NA	0/8	5.3U - 730U	ND	NA	4.29E+03 N (8)	N/A	N/A	NO	ND
	156-60-5	1,2-Dichloroethene (trans)	ND	ND	µg/kg	NA	0/22	1.07U - 12U	ND	NA	6.95E+03 N	N/A	N/A	NO	ND
	78-87-5	1,2-Dichloropropane	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	3.42E+02 C	N/A	N/A	NO	ND
	108-67-8	1,3,5-Trimethylbenzene	0.47 J	0.47 J	µg/kg	SWMU318-SB20-00	1/16	2.15U - 12U	0.47	NA	2.13E+03 N	N/A	N/A	NO	BSL
	541-73-1	1,3-Dichlorobenzene (m-)	ND	ND	µg/kg	NA	0/30	1.1U - 670U	ND	NA	5.31E+04 N	N/A	N/A	NO	ND
	142-28-9	1,3-Dichloropropane	ND	ND	µg/kg	NA	0/16	1.07U - 12U	ND	NA	1.05E+04 N	N/A	N/A	NO	ND
	10061-01-5	1,3-Dichloropropene (cis)	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	7.77E+02 C (9)	N/A	N/A	NO	ND
	10061-02-6	1,3-Dichloropropene (trans)	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	7.77E+02 C (9)	N/A	N/A	NO	ND
	106-46-7	1,4-Dichlorobenzene (p-)	1.6	4,300	µg/kg	SWMU318-SS01-00	5/30	1.1U - 12U	4,300	NA	3.45E+03 C	N/A	N/A	YES	ASL
	594-20-7	2,2-Dichloropropane	ND	ND	µg/kg	NA	0/16	1.07U - 12U	ND	NA	N/A	N/A	N/A	NO	ND
	78-93-3	2-Butanone (MEK)	7 J	20	µg/kg	SWMU318-TW01-00	6/14	10UJ - 2900U	20	NA	2.23E+06 N	N/A	N/A	NO	BSL
	95-49-8	2-Chlorotoluene	ND	ND	µg/kg	NA	0/16	2.15U - 12U	ND	NA	1.58E+04 N	N/A	N/A	NO	ND
	591-78-6	2-Hexanone (MBK)	3 J	3 J	µg/kg	SWMU318-TW01-00	1/14	10UJ - 2900U	3	NA	N/A	N/A	N/A	YES	NSC
	106-43-4	4-Chlorotoluene	ND	ND	µg/kg	NA	0/16	2.15U - 12U	ND	NA	1.58E+04 N (10)	N/A	N/A	NO	ND
	99-87-6	4-Isopropyltoluene	ND	ND	µg/kg	NA	0/16	2.15U - 12U	ND	NA	5.72E+04 N (11)	N/A	N/A	NO	ND
	108-10-1	4-Methyl-2-pentanone (MIBK)	1 J	1 J	µg/kg	SWMU318-TW01-00	1/14	10U - 2900U	1	NA	5.28E+05 N	N/A	N/A	NO	BSL
	67-64-1	Acetone	27 J	14,000	µg/kg	SWMU303-IS04-00	10/14	10UJ - 12UJ	14,000	NA	1.41E+06 N	N/A	N/A	NO	BSL
	71-43-2	Benzene	2 J	2 J	µg/kg	SWMU318-SS02-00, SWMU318-TW01-00	2/30	1.07U - 670U	2	NA	6.43E+02 C	N/A	N/A	NO	BSL
	108-86-1	Bromobenzene	ND	ND	µg/kg	NA	0/16	2.15U - 12U	ND	NA	2.78E+03 N	N/A	N/A	NO	ND
	74-97-5	Bromochloromethane	ND	ND	µg/kg	NA	0/16	2.15U - 12U	ND	NA	N/A	N/A	N/A	NO	ND
	75-27-4	Bromodichloromethane	ND	ND	µg/kg	NA	0/26	2.15U - 730U	ND	NA	8.24E+02 C	N/A	N/A	NO	ND
	75-25-2	Bromoform	13	13	µg/kg	SWMU318-TW02-00	1/26	2.15U - 730U	13	NA	6.16E+04 C	N/A	N/A	NO	BSL
	74-83-9	Bromomethane	ND	ND	µg/kg	NA	0/26	5U - 1500U	ND	NA	3.90E+02 N	N/A	N/A	NO	ND
	135-98-8	Butylbenzene, sec-	ND	ND	µg/kg	NA	0/16	2.15U - 12U	ND	NA	4.46E+04 N	N/A	N/A	NO	ND
	98-06-6	Butylbenzene, tert-	ND	ND	µg/kg	NA	0/16	2.15U - 12U	ND	NA	5.26E+04 N	N/A	N/A	NO	ND
	75-15-0	Carbon Disulfide	2 J	3 J	µg/kg	SWMU318-SS03-00	2/14	5U - 730U	3	NA	3.55E+04 N	N/A	N/A	NO	BSL
	56-23-5	Carbon Tetrachloride	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	2.51E+02 C	N/A	N/A	NO	ND
	108-90-7	Chlorobenzene	ND	ND	µg/kg	NA	0/30	1.07U - 670U	ND	NA	1.51E+04 N	N/A	N/A	NO	ND
	75-00-3	Chloroethane	44 J	44 J	µg/kg	SWMU303-IS04-00	1/26	5UJ - 1500U	44	NA	3.03E+03 C	N/A	N/A	NO	BSL

TABLE 2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Surface Soil (cont)		**Volatile Organic Compounds (ug/kg) (Cont)**													
	67-66-3	Chloroform	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	2.21E+02 C	N/A	N/A	NO	ND
	74-87-3	Chloromethane	ND	ND	µg/kg	NA	0/26	5U - 1500U	ND	NA	4.69E+03 N	N/A	N/A	NO	ND
	110-82-7	Cyclohexane	ND	ND	µg/kg	NA	0/10	5U - 12U	ND	NA	2.84E+05 N	N/A	N/A	NO	ND
	124-48-1	Dibromochloromethane	ND	ND	µg/kg	NA	0/26	2.15U - 730U	ND	NA	1.11E+03 C	N/A	N/A	NO	ND
	74-95-3	Dibromomethane	ND	ND	µg/kg	NA	0/16	2.15U - 12U	ND	NA	6.69E+03 N	N/A	N/A	NO	ND
	75-71-8	Dichlorodifluoromethane	ND	ND	µg/kg	NA	0/22	5UJ - 12U	ND	NA	9.39E+03 N	N/A	N/A	NO	ND
	100-41-4	Ethylbenzene	ND	ND	µg/kg	NA	0/30	1.07U - 670U	ND	NA	1.86E+05 N	N/A	N/A	NO	ND
	87-68-3	Hexachlorobutadiene	ND	ND	µg/kg	NA	0/16	5.36U - 12U	ND	NA	6.24E+03 C	N/A	N/A	NO	ND
	98-82-8	Isopropylbenzene (Cumene)	ND	ND	µg/kg	NA	0/22	2.15U - 12U	ND	NA	5.72E+04 N	N/A	N/A	NO	ND
	79-20-9	Methyl Acetate	ND	ND	µg/kg	NA	0/10	5U - 12U	ND	NA	2.21E+06 N	N/A	N/A	NO	ND
	108-87-2	Methyl Cyclohexane	ND	ND	µg/kg	NA	0/10	5U - 12U	ND	NA	2.59E+05 N	N/A	N/A	NO	ND
	1634-04-4	Methyl Tert-Butyl Ether (MTBE)	ND	ND	µg/kg	NA	0/10	5U - 12U	ND	NA	3.20E+04 C	N/A	N/A	NO	ND
	75-09-2	Methylene Chloride	1 J	18	µg/kg	SWMU318-TW02-00	9/26	5.3U - 730U	18	NA	9.11E+03 C	N/A	N/A	NO	BSL
	91-20-3	Naphthalene	1.1 J	1.5 J	µg/kg	SWMU318-SB26-00	2/16	5.36U - 12U	1.5	NA	5.59E+03 N	N/A	N/A	NO	BSL
	104-51-8	n-Butylbenzene	0.66 J	0.66 J	µg/kg	SWMU318-SB26-00	1/16	2.15U - 12U	0.66	NA	5.79E+04 N	N/A	N/A	NO	BSL
	103-65-1	n-Propylbenzene	ND	ND	µg/kg	NA	0/16	2.15U - 12U	ND	NA	5.79E+04 N	N/A	N/A	NO	ND
	100-42-5	Styrene (Ethenylbenzene)	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	4.38E+05 N	N/A	N/A	NO	ND
	127-18-4	Tetrachloroethene (PCE)	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	4.84E+02 C	N/A	N/A	NO	ND
	108-88-3	Toluene	4 J	4 J	µg/kg	SWMU318-SB05-00	1/30	1.07U - 670U	4	NA	6.56E+04 N	N/A	N/A	NO	BSL
	79-01-6	Trichloroethene (TCE)	ND	ND	µg/kg	NA	0/26	1.07U - 730U	ND	NA	5.30E+01 C	N/A	N/A	NO	ND
	75-69-4	Trichlorofluoromethane	2 J	2 J	µg/kg	SWMU318-SB09-00	1/18	5U - 11UJ	2	NA	3.86E+04 N	N/A	N/A	NO	BSL
	75-01-4	Vinyl Chloride	ND	ND	µg/kg	NA	0/26	2.15U - 1500U	ND	NA	7.91E+01 C	N/A	N/A	NO	ND
	108-38-3	Xylene, m-	2 J	4.7 J	µg/kg	SWMU318-SB10-00	2/16	2.15U - 12U	4.7	NA	2.71E+04 N (12)	N/A	N/A	NO	BSL
	95-47-6	Xylene, o-	ND	ND	µg/kg	NA	0/16	1.07U - 12U	ND	NA	2.71E+04 N (12)	N/A	N/A	NO	ND
	1330-20-7	Xylenes, total	ND	ND	µg/kg	NA	0/18	1.1U - 670U	ND	NA	2.71E+04 N	N/A	N/A	NO	ND
		Semivolatile Organic Compounds (ug/kg)													
	92-52-4	1,1'-Biphenyl	ND	ND	µg/kg	NA	0/17	360U - 650U	ND	NA	3.01E+05 N	N/A	N/A	NO	ND
	108-60-1	2,2'-Oxybis[1-chloropropane]	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	2.88E+03 C	N/A	N/A	NO	ND
	95-95-4	2,4,5-Trichlorophenol	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	6.11E+05 N	N/A	N/A	NO	ND
	88-06-2	2,4,6-Trichlorophenol	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	6.11E+02 N	N/A	N/A	NO	ND
	120-83-2	2,4-Dichlorophenol	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	1.83E+04 N	N/A	N/A	NO	ND
	105-67-9	2,4-Dimethylphenol	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	1.22E+05 N	N/A	N/A	NO	ND
	51-28-5	2,4-Dinitrophenol	ND	ND	µg/kg	NA	0/25	890U - 86000U	ND	NA	1.22E+04 N	N/A	N/A	NO	ND
	121-14-2	2,4-Dinitrotoluene	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	1.22E+04 N	N/A	N/A	NO	ND
	606-20-2	2,6-Dinitrotoluene	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	6.11E+03 N	N/A	N/A	NO	ND
	91-58-7	2-Chloronaphthalene	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	4.94E+05 N	N/A	N/A	NO	ND
	95-57-8	2-Chlorophenol	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	6.34E+03 N	N/A	N/A	NO	ND
	91-57-6	2-Methylnaphthalene	120 J	2,600 J	µg/kg	SWMU318-SS01-00	2/25	350U - 650UJ	2,600	NA	5.59E+03 N (13)	N/A	N/A	NO	BSL
	95-48-7	2-Methylphenol (o-Cresol)	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	3.06E+05 N	N/A	N/A	NO	ND
	88-74-4	2-Nitroaniline	ND	ND	µg/kg	NA	0/25	730U - 86000U	ND	NA	1.83E+04 N	N/A	N/A	NO	ND
	88-75-5	2-Nitrophenol	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	N/A	N/A	N/A	NO	ND
	91-94-1	3,3'-Dichlorobenzidine	ND	ND	µg/kg	NA	0/25	360U - 86000U	ND	NA	1.08E+03 C	N/A	N/A	NO	ND
	99-09-2	3-Nitroaniline	ND	ND	µg/kg	NA	0/25	730U - 86000U	ND	NA	1.83E+03 N	N/A	N/A	NO	ND
	534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	µg/kg	NA	0/25	730U - 86000U	ND	NA	6.11E+02 N	N/A	N/A	NO	ND
	101-55-3	4-Bromophenyl-phenylether	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	N/A	N/A	N/A	NO	ND
	59-50-7	4-Chloro-3-methylphenol	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	N/A	N/A	N/A	NO	ND

TABLE 2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Surface Soil (cont)		**Semivolatile Organic Compounds (ug/kg) (Cont)**													
	106-47-8	4-Chloroaniline	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	2.44E+04 N	N/A	N/A	NO	ND
	7005-72-3	4-Chlorophenyl-phenylether	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	N/A	N/A	N/A	NO	ND
	106-44-5	4-Methylphenol (p-Cresol)	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	3.06E+04 N	N/A	N/A	NO	ND
	100-01-6	4-Nitroaniline	ND	ND	µg/kg	NA	0/25	730U - 86000U	ND	NA	2.32E+04 C	N/A	N/A	NO	ND
	100-02-7	4-Nitrophenol	ND	ND	µg/kg	NA	0/25	730U - 86000U	ND	NA	N/A	N/A	N/A	NO	ND
	83-32-9	Acenaphthene	34 J	34 J	µg/kg	SWMU318-SS03-00	1/25	350U - 18000U	34	NA	3.68E+05 N	N/A	N/A	NO	BSL
	208-96-8	Acenaphthylene	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	3.68E+05 N [14]	N/A	N/A	NO	ND
	98-86-2	Acetophenone	120 J	120 J	µg/kg	SWMU318-SS03-00	1/17	360U - 650U	120	NA	N/A	N/A	N/A	YES	NSC
	120-12-7	Anthracene	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	2.19E+06 N	N/A	N/A	NO	ND
	1912-24-9	Atrazine	ND	ND	µg/kg	NA	0/17	360U - 650U	ND	NA	2.19E+03 C	N/A	N/A	NO	ND
	100-52-7	Benzaldehyde	33 J	33 J	µg/kg	SWMU318-TW02-00	1/17	360U - 650U	33	NA	6.11E+05 N	N/A	N/A	NO	BSL
	56-55-3	Benzo(a)anthracene	52 J	4,100 J	µg/kg	SWMU318-SS01-00	6/25	360U - 470U	4,100	NA	6.21E+02 C	N/A	N/A	YES	ASL
	50-32-8	Benzo(a)pyrene	59 J	5,000 J	µg/kg	SWMU318-SS01-00	7/25	360U - 470U	5,000	NA	6.21E+01 C	N/A	N/A	YES	ASL
	205-99-2	Benzo(b)fluoranthene	29 J	5,900 J	µg/kg	SWMU318-SS01-00	9/25	360U - 470U	5,900	NA	6.21E+02 C	N/A	N/A	YES	ASL
	191-24-2	Benzo(g,h,i)perylene	86 J	5,000 J	µg/kg	SWMU318-SS01-00	5/25	350U - 470U	5,000	NA	2.32E+05 N [15]	N/A	N/A	NO	BSL
	207-08-9	Benzo(k)fluoranthene	37 J	6,900 J	µg/kg	SWMU318-SS01-00	6/25	360U - 470U	6,900	NA	6.21E+03 C	N/A	N/A	YES	ASL
	111-91-1	Bis(2-chloroethoxy)methane	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	N/A	N/A	N/A	NO	ND
	111-44-4	Bis(2-chloroethyl)ether	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	2.18E+02 C	N/A	N/A	NO	ND
	117-81-7	Bis(2-ethylhexyl) Phthalate (BEHP)	46 J	22,000 J	µg/kg	SWMU318-SS01-00	18/25	360U - 400U	22,000	NA	3.47E+04 C	N/A	N/A	NO	BSL
	85-68-7	Butyl Benzyl Phthalate	65 J	2,000 J	µg/kg	SWMU318-SS01-00	4/25	350U - 470U	2,000	NA	1.22E+06 N	N/A	N/A	NO	BSL
	105-60-2	Caprolactam	100 J	100 J	µg/kg	SWMU318-SS03-00	1/17	360U - 650U	100	NA	3.06E+06 N	N/A	N/A	NO	BSL
	86-74-8	Carbazole	44 J	44 J	µg/kg	SWMU318-SS03-00	1/25	350U - 18000U	44	NA	2.43E+04 C	N/A	N/A	YES	CHEM
	218-01-9	Chrysene	69 J	6,700 J	µg/kg	SWMU318-SS01-00	6/25	360U - 470U	6,700	NA	6.21E+04 C	N/A	N/A	YES	CHEM
	53-70-3	Dibenz(a,h)anthracene	42 J	2,300 J	µg/kg	SWMU318-SS01-00	4/25	350U - 650U	2,300	NA	6.21E+01 C	N/A	N/A	YES	ASL
	132-64-9	Dibenzofuran	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	1.45E+04 N	N/A	N/A	NO	ND
	84-66-2	Diethyl Phthalate (DEP)	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	4.89E+06 N	N/A	N/A	NO	ND
	131-11-3	Dimethyl Phthalate	48 J	48 J	µg/kg	SWMU318-SS03-00	1/25	350U - 18000U	48	NA	6.11E+07 N	N/A	N/A	NO	BSL
	84-74-2	Di-n-butyl Phthalate (DBP)	31 J	2,400 J	µg/kg	SWMU318-SS01-00	3/25	350U - 650U	2,400	NA	6.11E+05 N	N/A	N/A	NO	BSL
	117-84-0	Di-n-octyl Phthalate	30 J	170 J	µg/kg	SWMU318-SS02-00	4/25	350U - 18000U	170	NA	2.44E+05 N	N/A	N/A	NO	BSL
	206-44-0	Fluoranthene	21 J	7,700 J	µg/kg	SWMU318-SS01-00	7/25	350U - 470U	7,700	NA	2.29E+05 N	N/A	N/A	NO	BSL
	86-73-7	Fluorene	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	2.75E+05 N	N/A	N/A	NO	ND
	118-74-1	Hexachlorobenzene	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	3.04E+02 C	N/A	N/A	NO	ND
	87-68-3	Hexachlorobutadiene	ND	ND	µg/kg	NA	0/16	5.36U - 12U	ND	NA	6.24E+03 C	N/A	N/A	NO	ND
	77-47-4	Hexachlorocyclopentadiene	ND	ND	µg/kg	NA	0/25	360U - 86000U	ND	NA	3.65E+04 N	N/A	N/A	NO	ND
	67-72-1	Hexachloroethane	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	3.47E+04 C	N/A	N/A	NO	ND
	193-39-5	Indeno(1,2,3-cd)pyrene	36 J	4,700 J	µg/kg	SWMU318-SS01-00	7/25	350U - 470U	4,700	NA	6.21E+02 C	N/A	N/A	YES	ASL
	78-59-1	Isophorone	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	5.12E+05 C	N/A	N/A	NO	ND
	91-20-3	Naphthalene	1.1 J	1.5 J	µg/kg	SWMU318-SB26-00	2/16	5.36U - 12U	1.5	NA	5.59E+03 N	N/A	N/A	NO	BSL
	98-95-3	Nitrobenzene	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	1.96E+03 N	N/A	N/A	NO	ND
	621-64-7	n-Nitrosodi-n-propylamine	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	6.95E+01 C	N/A	N/A	NO	ND
	86-30-6	n-Nitrosodiphenylamine	ND	ND	µg/kg	NA	0/25	350U - 18000U	ND	NA	9.93E+04 C	N/A	N/A	NO	ND
	87-86-5	Pentachlorophenol	ND	ND	µg/kg	NA	0/25	730U - 86000U	ND	NA	2.98E+03 C	N/A	N/A	NO	ND
	85-01-8	Phenanthrene	110 J	110 J	µg/kg	SWMU318-SS03-00	1/25	350U - 18000U	110	NA	2.32E+05 N [15]	N/A	N/A	NO	BSL
	108-95-2	Phenol	160 J	160 J	µg/kg	SWMU303-IS04-00	1/25	350U - 18000U	160	NA	1.83E+06 N	N/A	N/A	NO	BSL
	129-00-0	Pyrene	71 J	7,800 J	µg/kg	SWMU318-SS01-00	6/25	360U - 470U	7,800	NA	2.32E+05 N	N/A	N/A	NO	BSL

TABLE 2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Surface Soil (cont)		**Metals (mg/kg)**													
	7440-38-2	Arsenic	0.48 J	14.3	mg/kg	SWMU318-IS02-00	15/24	0.26U - 3.4U	14.3	1.14	3.90E-01 C	N/A	N/A	YES	ASL
	7440-39-3	Barium	9.4 J	396	mg/kg	SWMU318-SS01-00	22/24	22.6U - 25U	396	21.7	5.37E+02 N	N/A	N/A	NO	BSL
	7440-43-9	Cadmium	0.081 J	57.2	mg/kg	SWMU318-SS01-00	15/24	0.035U - 0.87U	57.2	0.0234	3.70E+00 N	N/A	N/A	YES	ASL
	7440-47-3	Chromium	3.7	91.1	mg/kg	SWMU318-SS01-00	24/24	(6)	91.1	12.7	2.11E+02 C	N/A	N/A	NO	BSL
	7439-92-1	Lead	3.2	110	mg/kg	SWMU318-SS01-00	24/24	(6)	110	16.7	4.00E+02 N	N/A	N/A	NO	BSL
	7439-97-6	Mercury	0.018 J	0.14	mg/kg	SWMU318-IS02-00	13/24	0.02U - 0.07U	0.14	0.0636	2.35E+00 N	N/A	N/A	NO	BSL
	7782-49-2	Selenium	0.56 J	1.3	mg/kg	SWMU318-SS03-00	10/24	0.4U - 1U	1.3	0.808	3.91E+01 N	N/A	N/A	NO	BSL
	7440-22-4	Silver	7.2	7.2	mg/kg	SWMU318-SS01-00	1/24	0.098U - 1.4U	7.2	0.117	3.91E+01 N	N/A	N/A	NO	BSL

(1) J - Analyte present - Reported value is estimated
U - Not detected
UJ - Reported quantitation limit is qualified as estimated

(2) Maximum concentration used for screening
(3) MCB Camp Lejeune Base Background Study, Final (Baker, 2001): 2 * Mean (1/2 nondetects) - AOC 2
(4) All non-carcinogenic criteria were divided by 10 to account for potential additive effects of chemicals
USEPA Region IX Residential Soil COC Screening Value (derived from USEPA Region IX PRG Table - October, 2004)
(5) Rationale Codes

Selection Reason:	Same chemical class (CHEM)
	No Screening Criteria (NSC)
	Above Screening Levels (ASL)
Deletion Reason:	Below Screening Level (BSL)

(6) No detection limits given; analyte detected in every sample.
(7) Screening level for 1,2,4-trichlorobenzene used as a surrogate.
(8) Screening value for 1,2-dichloroethene (cis) used as a surrogate.
(9) Screening value for 1,3-dichloropropene (total) used as a surrogate.
(10) Screening level for 2-chlorotoluene used as a surrogate.
(11) Screening level for isopropylbenzene used as a surrogate.
(12) Screening value for xylenes (total) used as a surrogate.
(13) Screening value for naphthalene used as a surrogate
(14) Screening value for acenaphthene used as a surrogate.
(15) Screening value for pyrene used as a surrogate.

Definitions: N/A = Not Applicable
NA = Not Analyzed
ND = Not Detected
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered

C = Carcinogenic
N = Non-Carcinogenic

mg/kg = milligrams per kilogram
ug/kg = microgram per kilogram

TABLE 2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Surface Soil		**Volatile Organic Compounds (ug/kg)**													
	630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	µg/kg	NA	0/24	2.15U - 117.5U	ND	NA	3.19E+03 C	N/A	N/A	NO	ND
	71-55-6	1,1,1-Trichloroethane (TCA)	ND	ND	µg/kg	NA	0/34	1.07U - 730U	ND	NA	1.98E+05 N	N/A	N/A	NO	ND
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	µg/kg	NA	0/34	2.15U - 730U	ND	NA	4.08E+02 C	N/A	N/A	NO	ND
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ND	µg/kg	NA	0/11	5U - 500U	ND	NA	2.09E+06 N	N/A	N/A	NO	ND
	79-00-5	1,1,2-Trichloroethane	ND	ND	µg/kg	NA	0/34	1.07U - 730U	ND	NA	7.29E+02 C	N/A	N/A	NO	ND
	75-34-3	1,1-Dichloroethane	ND	ND	µg/kg	NA	0/34	1.07U - 730U	ND	NA	5.06E+04 N	N/A	N/A	NO	ND
	75-35-4	1,1-Dichloroethene	ND	ND	µg/kg	NA	0/34	1.07U - 730U	ND	NA	1.24E+04 N	N/A	N/A	NO	ND
	563-58-6	1,1-Dichloropropene	ND	ND	µg/kg	NA	0/24	1.07U - 117.5U	ND	NA	N/A	N/A	N/A	NO	ND
	87-61-6	1,2,3-Trichlorobenzene	0.67 J	1.93 J	µg/kg	SWMU318-SB16-00	5/24	5.36U - 117.5U	1.93	NA	6.22E+03 N (7)	N/A	N/A	NO	BSL
	96-18-4	1,2,3-Trichloropropane	ND	ND	µg/kg	NA	0/12	2.15U - 2.44U	ND	NA	3.40E+01 C	N/A	N/A	NO	ND
	120-82-1	1,2,4-Trichlorobenzene	0.47 J	0.94 J	µg/kg	SWMU318-SB26-00	3/30	5U - 500U	0.94	NA	6.22E+03 N	N/A	N/A	NO	BSL
	95-63-6	1,2,4-Trimethylbenzene	0.59 J	0.65 J	µg/kg	SWMU318-SB26-00	2/24	2.15U - 117.5U	0.65	NA	5.16E+03 N	N/A	N/A	NO	BSL
	96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	ND	ND	µg/kg	NA	0/30	5U - 500U	ND	NA	4.60E+02 C	N/A	N/A	NO	ND
	106-93-4	1,2-Dibromoethane (EDB)	ND	ND	µg/kg	NA	0/30	2.15U - 500U	ND	NA	3.20E+01 C	N/A	N/A	NO	ND
	95-50-1	1,2-Dichlorobenzene (o-)	9,200	9,200	µg/kg	SWMU318-SS01-00	1/38	1.1U - 500U	9,200	NA	1.10E+05 N	N/A	N/A	NO	BSL
	107-06-2	1,2-Dichloroethane	ND	ND	µg/kg	NA	0/34	1.07U - 730U	ND	NA	2.78E+02 C	N/A	N/A	NO	ND
	156-59-2	1,2-Dichloroethene (cis)	0.86 J	0.86 J	µg/kg	SWMU318-SB18-00	1/30	1.07U - 500U	0.86	NA	4.29E+03 N	N/A	N/A	NO	BSL
	540-59-0	1,2-Dichloroethene (total)	ND	ND	µg/kg	NA	0/9	5.3U - 730U	ND	NA	4.29E+03 N (8)	N/A	N/A	NO	ND
	156-60-5	1,2-Dichloroethene (trans)	ND	ND	µg/kg	NA	0/30	1.07U - 500U	ND	NA	6.95E+03 N	N/A	N/A	NO	ND
	78-87-5	1,2-Dichloropropane	ND	ND	µg/kg	NA	0/34	1.07U - 730U	ND	NA	3.42E+02 C	N/A	N/A	NO	ND
	108-67-8	1,3,5-Trimethylbenzene	0.47 J	593	µg/kg	SWMU318-SB08-00	3/24	2.15U - 117.5U	593	NA	2.13E+03 N	N/A	N/A	NO	BSL
	541-73-1	1,3-Dichlorobenzene (m-)	ND	ND	µg/kg	NA	0/38	1.1U - 670U	ND	NA	5.31E+04 N	N/A	N/A	NO	ND
	142-28-9	1,3-Dichloropropane	ND	ND	µg/kg	NA	0/24	1.07U - 117.5U	ND	NA	1.05E+04 N	N/A	N/A	NO	ND
	10061-01-5	1,3-Dichloropropene (cis)	ND	ND	µg/kg	NA	0/34	1.07U - 730U	ND	NA	7.77E+02 C (9)	N/A	N/A	NO	ND
	10061-02-6	1,3-Dichloropropene (trans)	ND	ND	µg/kg	NA	0/34	1.07U - 730U	ND	NA	7.77E+02 C (9)	N/A	N/A	NO	ND
	106-46-7	1,4-Dichlorobenzene (p-)	1.6	4,300	µg/kg	SWMU318-SS01-00	5/38	1.1U - 500U	4,300	NA	3.45E+03 C	N/A	N/A	YES	ASL
	594-20-7	2,2-Dichloropropane	ND	ND	µg/kg	NA	0/24	1.07U - 117.5U	ND	NA	N/A	N/A	N/A	NO	ND
	78-93-3	2-Butanone (MEK)	7 J	20	µg/kg	SWMU318-TW01-00	6/15	10UJ - 2900U	20	NA	2.23E+06 N	N/A	N/A	NO	BSL
	95-49-8	2-Chlorotoluene	ND	ND	µg/kg	NA	0/24	2.15U - 117.5U	ND	NA	1.58E+04 N	N/A	N/A	NO	ND
	591-78-6	2-Hexanone (MBK)	3 J	3 J	µg/kg	SWMU318-TW01-00	1/15	10UJ - 2900U	3	NA	N/A	N/A	N/A	YES	NSC
	106-43-4	4-Chlorotoluene	ND	ND	µg/kg	NA	0/24	2.15U - 117.5U	ND	NA	1.58E+04 N (10)	N/A	N/A	NO	ND
	99-87-6	4-Isopropyltoluene	142	142	µg/kg	SWMU318-SB02-00	1/24	2.15U - 116U	142	NA	5.72E+04 N (11)	N/A	N/A	NO	BSL
	108-10-1	4-Methyl-2-pentanone (MIBK)	1 J	1 J	µg/kg	SWMU318-TW01-00	1/15	10U - 2900U	1	NA	5.28E+05 N	N/A	N/A	NO	BSL
	67-64-1	Acetone	27 J	14,000	µg/kg	SWMU303-IS04-00	10/15	10UJ - 500UJ	14,000	NA	1.41E+06 N	N/A	N/A	NO	BSL
	71-43-2	Benzene	0.9 J	2 J	µg/kg	SWMU318-SS02-00, SWMU318-TW01-00	3/38	1.07U - 670U	2	NA	6.43E+02 C	N/A	N/A	NO	BSL
	108-86-1	Bromobenzene	ND	ND	µg/kg	NA	0/24	2.15U - 117.5U	ND	NA	2.78E+03 N	N/A	N/A	NO	ND
	74-97-5	Bromochloromethane	ND	ND	µg/kg	NA	0/24	2.15U - 117.5U	ND	NA	N/A	N/A	N/A	NO	ND
	75-27-4	Bromodichloromethane	ND	ND	µg/kg	NA	0/34	2.15U - 730U	ND	NA	8.24E+02 C	N/A	N/A	NO	ND
	75-25-2	Bromoform	13	13	µg/kg	SWMU318-TW02-00	1/34	2.15U - 730U	13	NA	6.16E+04 C	N/A	N/A	NO	BSL
	74-83-9	Bromomethane	ND	ND	µg/kg	NA	0/34	5U - 1500U	ND	NA	3.90E+02 N	N/A	N/A	NO	ND
	135-98-8	Butylbenzene, sec-	69.5 J	125	µg/kg	SWMU318-SB07-00	3/24	2.15U - 116U	125	NA	4.46E+04 N	N/A	N/A	NO	BSL
	98-06-6	Butylbenzene, tert-	124	124	µg/kg	SWMU318-SB02-00	1/24	2.15U - 116U	124	NA	5.26E+04 N	N/A	N/A	NO	BSL
	75-15-0	Carbon Disulfide	2 J	3 J	µg/kg	SWMU318-SS03-00	2/15	5U - 730U	3	NA	3.55E+04 N	N/A	N/A	NO	BSL
	56-23-5	Carbon Tetrachloride	ND	ND	µg/kg	NA	0/34	1.07U - 730U	ND	NA	2.51E+02 C	N/A	N/A	NO	ND
	108-90-7	Chlorobenzene	ND	ND	µg/kg	NA	0/38	1.07U - 670U	ND	NA	1.51E+04 N	N/A	N/A	NO	ND
	75-00-3	Chloroethane	44 J	44 J	µg/kg	SWMU303-IS04-00	1/34	5UJ - 1500U	44	NA	3.03E+03 C	N/A	N/A	NO	BSL

TABLE 2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Surface Soil (cont)		**Volatile Organic Compounds (ug/kg) (Cont)**													
	67-66-3	Chloroform	ND	ND	µg/kg	NA	0/34	1.07U - 730U	ND	NA	2.21E+02 C	N/A	N/A	NO	ND
	74-87-3	Chloromethane	ND	ND	µg/kg	NA	0/34	5U - 1500U	ND	NA	4.69E+03 N	N/A	N/A	NO	ND
	110-82-7	Cyclohexane	ND	ND	µg/kg	NA	0/11	5U - 500U	ND	NA	2.84E+05 N	N/A	N/A	NO	ND
	124-48-1	Dibromochloromethane	ND	ND	µg/kg	NA	0/34	2.15U - 730U	ND	NA	1.11E+03 C	N/A	N/A	NO	ND
	74-95-3	Dibromomethane	ND	ND	µg/kg	NA	0/24	2.15U - 117.5U	ND	NA	6.69E+03 N	N/A	N/A	NO	ND
	75-71-8	Dichlorodifluoromethane	ND	ND	µg/kg	NA	0/30	5UJ - 500U	ND	NA	9.39E+03 N	N/A	N/A	NO	ND
	100-41-4	Ethylbenzene	7.3	7.3	µg/kg	SWMU318-SB13-00	1/38	1.07U - 670U	7.3	NA	1.86E+05 N	N/A	N/A	NO	BSL
	87-68-3	Hexachlorobutadiene	ND	ND	µg/kg	NA	0/24	5.36U - 117.5U	ND	NA	6.24E+03 C	N/A	N/A	NO	ND
	98-82-8	Isopropylbenzene (Cumene)	698	698	µg/kg	SWMU318-SB01-00	1/30	2.15U - 2220U	698	NA	5.72E+04 N	N/A	N/A	NO	BSL
	79-20-9	Methyl Acetate	ND	ND	µg/kg	NA	0/11	5U - 500U	ND	NA	2.21E+06 N	N/A	N/A	NO	ND
	108-87-2	Methyl Cyclohexane	ND	ND	µg/kg	NA	0/11	5U - 500U	ND	NA	2.59E+05 N	N/A	N/A	NO	ND
	1634-04-4	Methyl Tert-Butyl Ether (MTBE)	ND	ND	µg/kg	NA	0/11	5U - 500U	ND	NA	3.20E+04 C	N/A	N/A	NO	ND
	75-09-2	Methylene Chloride	1 J	18	µg/kg	SWMU318-TW02-00	9/34	5.3U - 730U	18	NA	9.11E+03 C	N/A	N/A	NO	BSL
	91-20-3	Naphthalene	1.1 J	57,800	µg/kg	SWMU318-SB08-00	6/24	5.36U - 13U	57,800	NA	5.59E+03 N	N/A	N/A	YES	ASL
	104-51-8	n-Butylbenzene	0.66 J	31,700	µg/kg	SWMU318-SB07-00	5/24	2.15U - 13U	31,700	NA	5.79E+04 N	N/A	N/A	NO	BSL
	103-65-1	n-Propylbenzene	ND	ND	µg/kg	NA	0/24	2.15U - 117.5U	ND	NA	5.79E+04 N	N/A	N/A	NO	ND
	100-42-5	Styrene (Ethenylbenzene)	ND	ND	µg/kg	NA	0/34	1.07U - 730U	ND	NA	4.38E+05 N	N/A	N/A	NO	ND
	127-18-4	Tetrachloroethene (PCE)	42 J	42 J	µg/kg	SWMU318-SB07-00	1/34	1.07U - 730U	42	NA	4.84E+02 C	N/A	N/A	NO	BSL
	108-88-3	Toluene	3.6 J	34 J	µg/kg	SWMU318-SB08-00	3/38	1.07U - 670U	34	NA	6.56E+04 N	N/A	N/A	NO	BSL
	79-01-6	Trichloroethene (TCE)	ND	ND	µg/kg	NA	0/34	1.07U - 730U	ND	NA	5.30E+01 C	N/A	N/A	NO	ND
	75-69-4	Trichlorofluoromethane	2 J	2 J	µg/kg	SWMU318-SB09-00	1/21	5U - 500U	2	NA	3.86E+04 N	N/A	N/A	NO	BSL
	75-01-4	Vinyl Chloride	ND	ND	µg/kg	NA	0/34	2.15U - 1500U	ND	NA	7.91E+01 C	N/A	N/A	NO	ND
	108-38-3	Xylene, m-	2 J	26	µg/kg	SWMU318-SB13-00	5/24	2.15U - 500U	26	NA	2.71E+04 N [12]	N/A	N/A	NO	BSL
	95-47-6	Xylene, o-	4 J	44 J	µg/kg	SWMU318-SB07-00	4/24	1.07U - 500U	44	NA	2.71E+04 N [12]	N/A	N/A	NO	BSL
	1330-20-7	Xylenes, total	ND	ND	µg/kg	NA	0/19	1.1U - 670U	ND	NA	2.71E+04 N	N/A	N/A	NO	ND
		Semivolatile Organic Compounds (ug/kg)													
	92-52-4	1,1'-Biphenyl	11 J	11 J	µg/kg	SWMU318-SB01-00	1/21	360U - 9000U	11	NA	3.01E+05 N	N/A	N/A	NO	BSL
	108-60-1	2,2'-Oxybis[1-chloropropane]	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	2.88E+03 C	N/A	N/A	NO	ND
	95-95-4	2,4,5-Trichlorophenol	ND	ND	µg/kg	NA	0/29	350U - 22000U	ND	NA	6.11E+05 N	N/A	N/A	NO	ND
	88-06-2	2,4,6-Trichlorophenol	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	6.11E+02 N	N/A	N/A	NO	ND
	120-83-2	2,4-Dichlorophenol	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	1.83E+04 N	N/A	N/A	NO	ND
	105-67-9	2,4-Dimethylphenol	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	1.22E+05 N	N/A	N/A	NO	ND
	51-28-5	2,4-Dinitrophenol	ND	ND	µg/kg	NA	0/29	890U - 86000U	ND	NA	1.22E+04 N	N/A	N/A	NO	ND
	121-14-2	2,4-Dinitrotoluene	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	1.22E+04 N	N/A	N/A	NO	ND
	606-20-2	2,6-Dinitrotoluene	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	6.11E+03 N	N/A	N/A	NO	ND
	91-58-7	2-Chloronaphthalene	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	4.94E+05 N	N/A	N/A	NO	ND
	95-57-8	2-Chlorophenol	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	6.34E+03 N	N/A	N/A	NO	ND
	91-57-6	2-Methylnaphthalene	120 J	2,600 J	µg/kg	SWMU318-SS01-00	3/29	350U - 9000U	2,600	NA	5.59E+03 N [13]	N/A	N/A	NO	BSL
	95-48-7	2-Methylphenol (o-Cresol)	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	3.06E+05 N	N/A	N/A	NO	ND
	88-74-4	2-Nitroaniline	ND	ND	µg/kg	NA	0/29	730U - 86000U	ND	NA	1.83E+04 N	N/A	N/A	NO	ND
	88-75-5	2-Nitrophenol	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	N/A	N/A	N/A	NO	ND
	91-94-1	3,3'-Dichlorobenzidine	ND	ND	µg/kg	NA	0/29	360U - 86000U	ND	NA	1.08E+03 C	N/A	N/A	NO	ND
	99-09-2	3-Nitroaniline	ND	ND	µg/kg	NA	0/29	730U - 86000U	ND	NA	1.83E+03 N	N/A	N/A	NO	ND
	534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	µg/kg	NA	0/29	730U - 86000U	ND	NA	6.11E+02 N	N/A	N/A	NO	ND
	101-55-3	4-Bromophenyl-phenylether	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	N/A	N/A	N/A	NO	ND
	59-50-7	4-Chloro-3-methylphenol	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	N/A	N/A	N/A	NO	ND

TABLE 2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Surface Soil (cont)		**Semivolatile Organic Compounds (ug/kg) (Cont)**													
	106-47-8	4-Chloroaniline	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	2.44E+04 N	N/A	N/A	NO	ND
	7005-72-3	4-Chlorophenyl-phenylether	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	N/A	N/A	N/A	NO	ND
	106-44-5	4-Methylphenol (p-Cresol)	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	3.06E+04 N	N/A	N/A	NO	ND
	100-01-6	4-Nitroaniline	ND	ND	µg/kg	NA	0/29	730U - 86000U	ND	NA	2.32E+04 C	N/A	N/A	NO	ND
	100-02-7	4-Nitrophenol	ND	ND	µg/kg	NA	0/29	730U - 86000U	ND	NA	N/A	N/A	N/A	NO	ND
	83-32-9	Acenaphthene	34 J	220 J	µg/kg	SWMU318-SB01-00	2/29	350U - 18000U	220	NA	3.68E+05 N	N/A	N/A	NO	BSL
	208-96-8	Acenaphthylene	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	3.68E+05 N (14)	N/A	N/A	NO	ND
	98-86-2	Acetophenone	120 J	120 J	µg/kg	SWMU318-SS03-00	1/21	360U - 9000U	120	NA	N/A	N/A	N/A	YES	NSC
	120-12-7	Anthracene	32 J	32 J	µg/kg	SWMU318-SB01-00	1/29	350U - 18000U	32	NA	2.19E+06 N	N/A	N/A	NO	BSL
	1912-24-9	Atrazine	ND	ND	µg/kg	NA	0/21	360U - 9000U	ND	NA	2.19E+03 C	N/A	N/A	NO	ND
	100-52-7	Benzaldehyde	33 J	33 J	µg/kg	SWMU318-TW02-00	1/21	360U - 9000U	33	NA	6.11E+05 N	N/A	N/A	NO	BSL
	56-55-3	Benzo(a)anthracene	52 J	4,100 J	µg/kg	SWMU318-SS01-00	7/29	360U - 9000U	4,100	NA	6.21E+02 C	N/A	N/A	YES	ASL
	50-32-8	Benzo(a)pyrene	59 J	5,000 J	µg/kg	SWMU318-SS01-00	8/29	360U - 9000U	5,000	NA	6.21E+01 C	N/A	N/A	YES	ASL
	205-99-2	Benzo(b)fluoranthene	29 J	5,900 J	µg/kg	SWMU318-SS01-00	10/29	360U - 9000U	5,900	NA	6.21E+02 C	N/A	N/A	YES	ASL
	191-24-2	Benzo(g,h,i)perylene	86 J	5,000 J	µg/kg	SWMU318-SS01-00	5/29	350U - 9000U	5,000	NA	2.32E+05 N (12)	N/A	N/A	NO	BSL
	207-08-9	Benzo(k)fluoranthene	37 J	6,900 J	µg/kg	SWMU318-SS01-00	7/29	360U - 9000U	6,900	NA	6.21E+03 C	N/A	N/A	YES	ASL
	111-91-1	Bis(2-chloroethoxy)methane	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	N/A	N/A	N/A	NO	ND
	111-44-4	Bis(2-chloroethyl)ether	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	2.18E+02 C	N/A	N/A	NO	ND
	117-81-7	Bis(2-ethylhexyl) Phthalate (BEHP)	46 J	22,000 J	µg/kg	SWMU318-SS01-00	18/29	360U - 9000U	22,000	NA	3.47E+04 C	N/A	N/A	NO	BSL
	85-68-7	Butyl Benzyl Phthalate	65 J	2,000 J	µg/kg	SWMU318-SS01-00	4/29	350U - 9000U	2,000	NA	1.22E+06 N	N/A	N/A	NO	BSL
	105-60-2	Caprolactam	100 J	100 J	µg/kg	SWMU318-SS03-00	1/21	360U - 9000U	100	NA	3.06E+06 N	N/A	N/A	NO	BSL
	86-74-8	Carbazole	19 J	44 J	µg/kg	SWMU318-SS03-00	2/29	350U - 18000U	44	NA	2.43E+04 C	N/A	N/A	YES	CHEM
	218-01-9	Chrysene	69 J	6,700 J	µg/kg	SWMU318-SS01-00	7/29	360U - 9000U	6,700	NA	6.21E+04 C	N/A	N/A	YES	CHEM
	53-70-3	Dibenz(a,h)anthracene	42 J	2,300 J	µg/kg	SWMU318-SS01-00	5/29	350U - 9000U	2,300	NA	6.21E+01 C	N/A	N/A	YES	ASL
	132-64-9	Dibenzofuran	150 J	150 J	µg/kg	SWMU318-SB01-00	1/29	350U - 18000U	150	NA	1.45E+04 N	N/A	N/A	NO	BSL
	84-66-2	Diethyl Phthalate (DEP)	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	4.89E+06 N	N/A	N/A	NO	ND
	131-11-3	Dimethyl Phthalate	48 J	48 J	µg/kg	SWMU318-SS03-00	1/29	350U - 18000U	48	NA	6.11E+07 N	N/A	N/A	NO	BSL
	84-74-2	Di-n-butyl Phthalate (DBP)	31 J	2,400 J	µg/kg	SWMU318-SS01-00	4/29	350U - 9000U	2,400	NA	6.11E+05 N	N/A	N/A	NO	BSL
	117-84-0	Di-n-octyl Phthalate	30 J	170 J	µg/kg	SWMU318-SS02-00	4/29	350U - 18000U	170	NA	2.44E+05 N	N/A	N/A	NO	BSL
	206-44-0	Fluoranthene	21 J	7,700 J	µg/kg	SWMU318-SS01-00	8/29	350U - 9000U	7,700	NA	2.29E+05 N	N/A	N/A	NO	BSL
	86-73-7	Fluorene	160 J	160 J	µg/kg	SWMU318-SB01-00	1/29	350U - 18000U	160	NA	2.75E+05 N	N/A	N/A	NO	BSL
	118-74-1	Hexachlorobenzene	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	3.04E+02 C	N/A	N/A	NO	ND
	87-68-3	Hexachlorobutadiene	ND	ND	µg/kg	NA	0/24	5.36U - 117.5U	ND	NA	6.24E+03 C	N/A	N/A	NO	ND
	77-47-4	Hexachlorocyclopentadiene	ND	ND	µg/kg	NA	0/29	360U - 86000U	ND	NA	3.65E+04 N	N/A	N/A	NO	ND
	67-72-1	Hexachloroethane	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	3.47E+04 C	N/A	N/A	NO	ND
	193-39-5	Indeno(1,2,3-cd)pyrene	36 J	4,700 J	µg/kg	SWMU318-SS01-00	8/29	350U - 9000U	4,700	NA	6.21E+02 C	N/A	N/A	YES	ASL
	78-59-1	Isophorone	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	5.12E+05 C	N/A	N/A	NO	ND
	91-20-3	Naphthalene	120 J	32,000	µg/kg	SWMU318-SB08-00	5/29	350U - 650U	32,000	NA	5.59E+03 N	N/A	N/A	YES	ASL
	98-95-3	Nitrobenzene	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	1.96E+03 N	N/A	N/A	NO	ND
	621-64-7	n-Nitrosodi-n-propylamine	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	6.95E+01 C	N/A	N/A	NO	ND
	86-30-6	n-Nitrosodiphenylamine	ND	ND	µg/kg	NA	0/29	350U - 18000U	ND	NA	9.93E+04 C	N/A	N/A	NO	ND
	87-86-5	Pentachlorophenol	ND	ND	µg/kg	NA	0/29	730U - 86000U	ND	NA	2.98E+03 C	N/A	N/A	NO	ND
	85-01-8	Phenanthrene	110 J	120 J	µg/kg	SWMU318-SB01-00	2/29	350U - 18000U	120	NA	2.32E+05 N (12)	N/A	N/A	NO	BSL
	108-95-2	Phenol	160 J	160 J	µg/kg	SWMU303-IS04-00	1/29	350U - 18000U	160	NA	1.83E+06 N	N/A	N/A	NO	BSL
	129-00-0	Pyrene	71 J	7,800 J	µg/kg	SWMU318-SS01-00	7/29	360U - 9000U	7,800	NA	2.32E+05 N	N/A	N/A	NO	BSL

TABLE 2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Surface Soil (cont)		**Metals (mg/kg)**													
	7440-38-2	Arsenic	0.48 J	14.3	mg/kg	SWMU318-IS02-00	18/28	0.26U - 3.4U	14.3	1.14	3.90E-01 C	N/A	N/A	YES	ASL
	7440-39-3	Barium	4.6 J	396	mg/kg	SWMU318-SS01-00	26/28	22.6U - 25U	396	21.7	5.37E+02 N	N/A	N/A	NO	BSL
	7440-43-9	Cadmium	0.081 J	57.2	mg/kg	SWMU318-SS01-00	17/28	0.035U - 10U	57.2	0.0234	3.70E+00 N	N/A	N/A	YES	ASL
	7440-47-3	Chromium	2.8 J	91.1	mg/kg	SWMU318-SS01-00	28/28	(6)	91.1	12.7	2.11E+02 C	N/A	N/A	NO	BSL
	7439-92-1	Lead	2 J	110	mg/kg	SWMU318-SS01-00	28/28	(6)	110	16.7	4.00E+02 N	N/A	N/A	NO	BSL
	7439-97-6	Mercury	0.01 J	0.14	mg/kg	SWMU318-IS02-00	15/28	0.01U - 0.07U	0.14	0.0636	2.35E+00 N	N/A	N/A	NO	BSL
	7782-49-2	Selenium	0.38 J	1.3	mg/kg	SWMU318-SS03-00	12/28	0.34U - 1U	1.3	0.808	3.91E+01 N	N/A	N/A	NO	BSL
	7440-22-4	Silver	4.6 J	7.2	mg/kg	SWMU318-SS01-00	2/28	0.098U - 1.4U	7.2	0.117	3.91E+01 N	N/A	N/A	NO	BSL

(1) J - Analyte present - Reported value is estimated
U - Not detected
UJ - Reported quantitation limit is qualified as estimated

(2) Maximum concentration used for screening
(3) MCB Camp Lejeune Base Background Study, Final (Baker, 2001): 2 * Mean (1/2 nondetects) - AOC 2
(4) All non-carcinogenic criteria were divided by 10 to account for potential additive effects of chemicals
USEPA Region IX Residential Soil COC Screening Value (derived from USEPA Region IX PRG Table - October, 2004)
(5) Rationale Codes

Selection Reason:	Same chemical class (CHEM)
	No Screening Criteria (NSC)
	Above Screening Levels (ASL)
Deletion Reason:	Below Screening Level (BSL)

(6) No detection limits given; analyte detected in every sample.
(7) Screening level for 1,2,4-trichlorobenzene used as a surrogate.
(8) Screening value for 1,2-dichloroethene (cis) used as a surrogate.
(9) Screening value for 1,3-dichloropropene (total) used as a surrogate.
(10) Screening level for 2-chlorotoluene used as a surrogate.
(11) Screening level for isopropylbenzene used as a surrogate.
(12) Screening value for xylenes (total) used as a surrogate.
(13) Screening value for naphthalene used as a surrogate
(14) Screening value for acenaphthene used as a surrogate.
(15) Screening value for pyrene used as a surrogate.

Definitions: N/A = Not Applic
NA = Not Analyz
ND = Not Detected
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered

C = Carcinogenic
N = Non-Carcinogenic

mg/kg = milligrams per kilogram
ug/kg = microgram per kilogram

TABLE 2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Subsurface Soil		**Volatile Organic Compounds (ug/kg)**													
	630-20-6	1,1,1,2-Tetrachloroethane	3 J	3 J	µg/kg	SWMU318-SB03-04	1/62	2.22U - 133U	3	NA	3.19E+03 C	N/A	N/A	NO	BSL
	71-55-6	1,1,1-Trichloroethane (TCA)	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	1.98E+05 N	N/A	N/A	NO	ND
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	µg/kg	NA	0/69	2.22U - 133U	ND	NA	4.08E+02 C	N/A	N/A	NO	ND
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ND	µg/kg	NA	0/7	6U - 12U	ND	NA	2.09E+06 N	N/A	N/A	NO	ND
	79-00-5	1,1,2-Trichloroethane	93	93	µg/kg	SWMU318-TW02-04	1/69	1.11U - 133U	93	NA	7.29E+02 C	N/A	N/A	NO	BSL
	75-34-3	1,1-Dichloroethane	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	5.06E+04 N	N/A	N/A	NO	ND
	75-35-4	1,1-Dichloroethene	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	1.24E+04 N	N/A	N/A	NO	ND
	563-58-6	1,1-Dichloropropene	ND	ND	µg/kg	NA	0/62	1.11U - 133U	ND	NA	N/A	N/A	N/A	NO	ND
	87-61-6	1,2,3-Trichlorobenzene	0.53 J	4 J	µg/kg	SWMU318-SB03-04	18/62	5.6U - 133U	4	NA	6.22E+03 N (7)	N/A	N/A	NO	BSL
	96-18-4	1,2,3-Trichloropropane	ND	ND	µg/kg	NA	0/36	2.22U - 2.93U	ND	NA	3.40E+01 C	N/A	N/A	NO	ND
	120-82-1	1,2,4-Trichlorobenzene	0.4 J	6 J	µg/kg	SWMU318-SB03-04	20/65	5.6U - 133U	6	NA	6.22E+03 N	N/A	N/A	NO	BSL
	95-63-6	1,2,4-Trimethylbenzene	0.43 J	61	µg/kg	SWMU318-SB11-03	11/62	2.22U - 133U	61	NA	5.16E+03 N	N/A	N/A	NO	BSL
	96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	ND	ND	µg/kg	NA	0/65	5.56U - 133U	ND	NA	4.60E+02 C	N/A	N/A	NO	ND
	106-93-4	1,2-Dibromoethane (EDB)	ND	ND	µg/kg	NA	0/65	2.22U - 133U	ND	NA	3.20E+01 C	N/A	N/A	NO	ND
	95-50-1	1,2-Dichlorobenzene (o-)	4 J	6.6	µg/kg	SWMU318-SB07-02	2/69	1.1U - 133U	6.6	NA	1.10E+05 N	N/A	N/A	NO	BSL
	107-06-2	1,2-Dichloroethane	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	2.78E+02 C	N/A	N/A	NO	ND
	156-59-2	1,2-Dichloroethene (cis)	0.84 J	18	µg/kg	SWMU318-SB26-02	5/65	1.11U - 133U	18	NA	4.29E+03 N	N/A	N/A	NO	BSL
	540-59-0	1,2-Dichloroethene (total)	21	21	µg/kg	SWMU318-SB26-02	1/8	5.3U - 62U	21	NA	4.29E+03 N (8)	N/A	N/A	NO	BSL
	156-60-5	1,2-Dichloroethene (trans)	3 J	3 J	µg/kg	SWMU318-SB26-02	1/65	1.11U - 133U	3	NA	6.95E+03 N	N/A	N/A	NO	BSL
	78-87-5	1,2-Dichloropropane	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	3.42E+02 C	N/A	N/A	NO	ND
	108-67-8	1,3,5-Trimethylbenzene	0.53 J	46	µg/kg	SWMU318-SB03-04	3/62	2.22U - 133U	46	NA	2.13E+03 N	N/A	N/A	NO	BSL
	541-73-1	1,3-Dichlorobenzene (m-)	41	41	µg/kg	SWMU318-SB07-04	1/69	1.1U - 133U	41	NA	5.31E+04 N	N/A	N/A	NO	BSL
	142-28-9	1,3-Dichloropropane	ND	ND	µg/kg	NA	0/62	1.11U - 133U	ND	NA	1.05E+04 N	N/A	N/A	NO	ND
	10061-01-5	1,3-Dichloropropene (cis)	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	7.77E+02 C (9)	N/A	N/A	NO	ND
	10061-02-6	1,3-Dichloropropene (trans)	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	7.77E+02 C (9)	N/A	N/A	NO	ND
	106-46-7	1,4-Dichlorobenzene (p-)	1.3	7 J	µg/kg	SWMU318-SB07-04	6/69	2.22U - 133U	7	NA	3.45E+03 C	N/A	N/A	NO	BSL
	594-20-7	2,2-Dichloropropane	ND	ND	µg/kg	NA	0/62	1.11U - 133U	ND	NA	N/A	N/A	N/A	NO	ND
	78-93-3	2-Butanone (MEK)	5 J	14 J	µg/kg	SWMU303-IS02-03	4/11	10UJ - 250U	14	NA	2.23E+06 N	N/A	N/A	NO	BSL
	95-49-8	2-Chlorotoluene	ND	ND	µg/kg	NA	0/62	2.22U - 133U	ND	NA	1.58E+04 N	N/A	N/A	NO	ND
	591-78-6	2-Hexanone (MBK)	300	300	µg/kg	SWMU318-TW02-04	1/11	10UJ - 250U	300	NA	N/A	N/A	N/A	YES	NSC
	106-43-4	4-Chlorotoluene	ND	ND	µg/kg	NA	0/62	2.22U - 133U	ND	NA	1.58E+04 N (10)	N/A	N/A	NO	ND
	99-87-6	4-Isopropyltoluene	7 J	46	µg/kg	SWMU318-SB03-04	5/62	2.22U - 133U	46	NA	5.72E+04 N (11)	N/A	N/A	NO	BSL
	108-10-1	4-Methyl-2-pentanone (MIBK)	ND	ND	µg/kg	NA	0/11	10U - 250U	ND	NA	5.28E+05 N	N/A	N/A	NO	ND
	67-64-1	Acetone	8 J	890	µg/kg	SWMU303-IS04-03	9/11	12UJ - 21U	890	NA	1.41E+06 N	N/A	N/A	NO	BSL
	71-43-2	Benzene	ND	ND	µg/kg	NA	0/69	1.1U - 133U	ND	NA	6.43E+02 C	N/A	N/A	NO	ND
	108-86-1	Bromobenzene	ND	ND	µg/kg	NA	0/62	2.22U - 133U	ND	NA	2.78E+03 N	N/A	N/A	NO	ND
	74-97-5	Bromochloromethane	ND	ND	µg/kg	NA	0/62	2.22U - 133U	ND	NA	N/A	N/A	N/A	NO	ND
	75-27-4	Bromodichloromethane	2 J	2 J	µg/kg	SWMU318-TW02-04	1/69	2.22U - 133U	2	NA	8.24E+02 C	N/A	N/A	NO	BSL
	75-25-2	Bromoform	5 J	5 J	µg/kg	SWMU318-SB03-04	1/69	2.22U - 133U	5	NA	6.16E+04 C	N/A	N/A	NO	BSL
	74-83-9	Bromomethane	ND	ND	µg/kg	NA	0/69	5.56U - 133U	ND	NA	3.90E+02 N	N/A	N/A	NO	ND
	135-98-8	Butylbenzene, sec-	17	23.85	µg/kg	SWMU318-SB11-03	2/62	2.22U - 133U	23.85	NA	4.46E+04 N	N/A	N/A	NO	BSL
	98-06-6	Butylbenzene, tert-	ND	ND	µg/kg	NA	0/62	2.22U - 133U	ND	NA	5.26E+04 N	N/A	N/A	NO	ND
	75-15-0	Carbon Disulfide	3 J	3 J	µg/kg	SWMU318-TW03-04	1/11	5.3U - 62U	3	NA	3.55E+04 N	N/A	N/A	NO	BSL
	56-23-5	Carbon Tetrachloride	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	2.51E+02 C	N/A	N/A	NO	ND
	108-90-7	Chlorobenzene	17	17	µg/kg	SWMU318-SB09-03	1/69	1.1U - 133U	17	NA	1.51E+04 N	N/A	N/A	NO	BSL
	75-00-3	Chloroethane	ND	ND	µg/kg	NA	0/69	5.56U - 133U	ND	NA	3.03E+03 C	N/A	N/A	NO	ND

TABLE 2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Subsurface Soil (cont)		**Volatile Organic Compounds (ug/kg) (Cont)**													
	67-66-3	Chloroform	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	2.21E+02 C	N/A	N/A	NO	ND
	74-87-3	Chloromethane	ND	ND	µg/kg	NA	0/69	5.56U - 133U	ND	NA	4.69E+03 N	N/A	N/A	NO	ND
	110-82-7	Cyclohexane	12	12	µg/kg	SWMU318-TW02-04	1/7	6U - 12U	12	NA	2.84E+05 N	N/A	N/A	NO	BSL
	124-48-1	Dibromochloromethane	ND	ND	µg/kg	NA	0/69	2.22U - 133U	ND	NA	1.11E+03 C	N/A	N/A	NO	ND
	74-95-3	Dibromomethane	ND	ND	µg/kg	NA	0/62	2.22U - 133U	ND	NA	6.69E+03 N	N/A	N/A	NO	ND
	75-71-8	Dichlorodifluoromethane (Freon-12)	ND	ND	µg/kg	NA	0/65	5.56U - 133U	ND	NA	9.39E+03 N	N/A	N/A	NO	ND
	100-41-4	Ethylbenzene	ND	ND	µg/kg	NA	0/69	1.1U - 133U	ND	NA	1.86E+05 N	N/A	N/A	NO	ND
	87-68-3	Hexachlorobutadiene	7 J	7 J	µg/kg	SWMU318-SB03-04	1/62	5.56U - 133U	7	NA	6.24E+03 C	N/A	N/A	NO	BSL
	98-82-8	Isopropylbenzene (Cumene)	15	39	µg/kg	SWMU318-SB07-04	2/65	2.22U - 549U	39	NA	5.72E+04 N	N/A	N/A	NO	BSL
	79-20-9	Methyl Acetate	19 J	19 J	µg/kg	SWMU318-SB04-01	1/7	6U - 12U	19	NA	2.21E+06 N	N/A	N/A	NO	BSL
	108-87-2	Methyl Cyclohexane	10	10	µg/kg	SWMU318-TW02-04	1/7	6U - 12U	10	NA	2.59E+05 N	N/A	N/A	NO	BSL
	1634-04-4	Methyl Tert-Butyl Ether (MTBE)	ND	ND	µg/kg	NA	0/7	6U - 12U	ND	NA	3.20E+04 C	N/A	N/A	NO	ND
	75-09-2	Methylene Chloride	1 J	33	µg/kg	SWMU318-TW01-04	4/69	5.3U - 133U	33	NA	9.11E+03 C	N/A	N/A	NO	BSL
	91-20-3	Naphthalene	0.97 J	3,630	µg/kg	SWMU318-SB03-04	17/62	5.56U - 15U	3,630	NA	5.59E+03 N	N/A	N/A	NO	BSL
	104-51-8	n-Butylbenzene	0.61 J	1,230	µg/kg	SWMU318-SB03-04	9/62	2.22U - 133U	1,230	NA	5.79E+04 N	N/A	N/A	NO	BSL
	103-65-1	n-Propylbenzene	2.85 J	2.85 J	µg/kg	SWMU318-SB11-03	1/62	2.22U - 133U	2.85	NA	5.79E+04 N	N/A	N/A	NO	BSL
	100-42-5	Styrene (Ethenylbenzene)	2 J	2 J	µg/kg	SWMU318-SB03-04	1/69	1.11U - 133U	2	NA	4.38E+05 N	N/A	N/A	NO	BSL
	127-18-4	Tetrachloroethene (PCE)	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	4.84E+02 C	N/A	N/A	NO	ND
	108-88-3	Toluene	0.9 J	4 J	µg/kg	SWMU318-SB07-04	3/69	1.1U - 133U	4	NA	6.56E+04 N	N/A	N/A	NO	BSL
	79-01-6	Trichloroethene (TCE)	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	5.30E+01 C	N/A	N/A	NO	ND
	75-69-4	Trichlorofluoromethane	ND	ND	µg/kg	NA	0/40	5.56U - 12U	ND	NA	3.86E+04 N	N/A	N/A	NO	ND
	75-01-4	Vinyl Chloride	ND	ND	µg/kg	NA	0/69	2.22U - 133U	ND	NA	7.91E+01 C	N/A	N/A	NO	ND
	000000-01-4	Xylene, m/p-	2.5 J	4.2 J	µg/kg	SWMU318-SB13-01	7/62	2.22U - 267U	4.2	NA	2.71E+04 N (12)	N/A	N/A	NO	BSL
	95-47-6	Xylene, o-	2.9 J	5.25 J	µg/kg	SWMU318-SB05-02	5/62	1.11U - 133U	5.25	NA	2.71E+04 N (12)	N/A	N/A	NO	BSL
	1330-20-7	Xylenes, total	ND	ND	µg/kg	NA	0/11	1.1U - 24UJ	ND	NA	2.71E+04 N	N/A	N/A	NO	ND
		Semivolatile Organic Compounds (ug/kg)													
	92-52-4	1,1'-Biphenyl	ND	ND	µg/kg	NA	0/51	360U - 500U	ND	NA	3.01E+05 N	N/A	N/A	NO	ND
	108-60-1	2,2'-Oxybis[1-chloropropane]	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	2.88E+03 C	N/A	N/A	NO	ND
	95-95-4	2,4,5-Trichlorophenol	ND	ND	µg/kg	NA	0/55	350U - 1200U	ND	NA	6.11E+05 N	N/A	N/A	NO	ND
	88-06-2	2,4,6-Trichlorophenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	6.11E+02 N	N/A	N/A	NO	ND
	120-83-2	2,4-Dichlorophenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.83E+04 N	N/A	N/A	NO	ND
	105-67-9	2,4-Dimethylphenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.22E+05 N	N/A	N/A	NO	ND
	51-28-5	2,4-Dinitrophenol	ND	ND	µg/kg	NA	0/55	900U - 2600U	ND	NA	1.22E+04 N	N/A	N/A	NO	ND
	121-14-2	2,4-Dinitrotoluene	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.22E+04 N	N/A	N/A	NO	ND
	606-20-2	2,6-Dinitrotoluene	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	6.11E+03 N	N/A	N/A	NO	ND
	91-58-7	2-Chloronaphthalene	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	4.94E+05 N	N/A	N/A	NO	ND
	95-57-8	2-Chlorophenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	6.34E+03 N	N/A	N/A	NO	ND
	91-57-6	2-Methylnaphthalene	ND	ND	µg/kg	NA	0/55	350U - 500UJ	ND	NA	5.59E+03 N (13)	N/A	N/A	NO	ND
	95-48-7	2-Methylphenol (o-Cresol)	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	3.06E+05 N	N/A	N/A	NO	ND
	88-74-4	2-Nitroaniline	ND	ND	µg/kg	NA	0/55	760U - 2000U	ND	NA	1.83E+04 N	N/A	N/A	NO	ND
	88-75-5	2-Nitrophenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	N/A	N/A	N/A	NO	ND
	91-94-1	3,3'-Dichlorobenzidine	87 J	87 J	µg/kg	SWMU318-SB05-03	1/55	360U - 2000U	87	NA	1.08E+03 C	N/A	N/A	NO	BSL
	99-09-2	3-Nitroaniline	ND	ND	µg/kg	NA	0/55	760U - 2000U	ND	NA	1.83E+03 N	N/A	N/A	NO	ND
	534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	µg/kg	NA	0/55	760U - 2000U	ND	NA	6.11E+02 N	N/A	N/A	NO	ND
	101-55-3	4-Bromophenyl-phenylether	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	N/A	N/A	N/A	NO	ND
	59-50-7	4-Chloro-3-methylphenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	N/A	N/A	N/A	NO	ND
	106-47-8	4-Chloroaniline	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	2.44E+04 N	N/A	N/A	NO	ND

TABLE 2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Subsurface Soil (cont)		**Semivolatile Organic Compounds (ug/kg) (Cont)**													
	7005-72-3	4-Chlorophenyl-phenylether	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	N/A	N/A	N/A	NO	ND
	106-44-5	4-Methylphenol (p-Cresol)	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	3.06E+04 N	N/A	N/A	NO	ND
	100-01-6	4-Nitroaniline	ND	ND	µg/kg	NA	0/55	760U - 2000U	ND	NA	2.32E+04 C	N/A	N/A	NO	ND
	100-02-7	4-Nitrophenol	ND	ND	µg/kg	NA	0/55	760U - 2000U	ND	NA	N/A	N/A	N/A	NO	ND
	83-32-9	Acenaphthene	20 J	20 J	µg/kg	SWMU318-SB01-04	1/55	350U - 500U	20	NA	3.68E+05 N	N/A	N/A	NO	BSL
	208-96-8	Acenaphthylene	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	3.68E+05 N [14]	N/A	N/A	NO	ND
	98-86-2	Acetophenone	ND	ND	µg/kg	NA	0/51	360U - 500U	ND	NA	N/A	N/A	N/A	NO	ND
	120-12-7	Anthracene	31 J	31 J	µg/kg	SWMU318-SB05-03	1/55	350U - 500U	31	NA	2.19E+06 N	N/A	N/A	NO	BSL
	1912-24-9	Atrazine	ND	ND	µg/kg	NA	0/51	360U - 500U	ND	NA	2.19E+03 C	N/A	N/A	NO	ND
	100-52-7	Benzaldehyde	18 J	31 J	µg/kg	SWMU318-SB06-01	3/51	360U - 500U	31	NA	6.11E+05 N	N/A	N/A	NO	BSL
	56-55-3	Benzo(a)anthracene	39 J	1,200	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	1,200	NA	6.21E+02 C	N/A	N/A	YES	ASL
	50-32-8	Benzo(a)pyrene	43 J	820	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	820	NA	6.21E+01 C	N/A	N/A	YES	ASL
	205-99-2	Benzo(b)fluoranthene	68 J	1,500	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	1,500	NA	6.21E+02 C	N/A	N/A	YES	ASL
	191-24-2	Benzo(g,h,i)perylene	68 J	180 J	µg/kg	SWMU303-TW01-04	3/55	350U - 500U	180	NA	2.32E+05 N [15]	N/A	N/A	NO	BSL
	207-08-9	Benzo(k)fluoranthene	39 J	1,200	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	1,200	NA	6.21E+03 C	N/A	N/A	YES	CHEM
	111-91-1	Bis(2-chloroethoxy)methane	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	N/A	N/A	N/A	NO	ND
	111-44-4	Bis(2-chloroethyl)ether	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	2.18E+02 C	N/A	N/A	NO	ND
	117-81-7	Bis(2-ethylhexyl) Phthalate (BEHP)	72 J	660 J	µg/kg	SWMU318-TW03-04	12/55	360U - 495U	660	NA	3.47E+04 C	N/A	N/A	NO	BSL
	85-68-7	Butyl Benzyl Phthalate	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.22E+06 N	N/A	N/A	NO	ND
	105-60-2	Caprolactam	ND	ND	µg/kg	NA	0/51	360U - 500U	ND	NA	3.06E+06 N	N/A	N/A	NO	ND
	86-74-8	Carbazole	65 J	65 J	µg/kg	SWMU318-SB05-03	1/55	350U - 500U	65	NA	2.43E+04 C	N/A	N/A	YES	CHEM
	218-01-9	Chrysene	50 J	1,900	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	1,900	NA	6.21E+04 C	N/A	N/A	YES	CHEM
	53-70-3	Dibenz(a,h)anthracene	84 J	180 J	µg/kg	SWMU318-SB05-03	2/55	350U - 500U	180	NA	6.21E+01 C	N/A	N/A	YES	ASL
	132-64-9	Dibenzofuran	14 J	130 J	µg/kg	SWMU318-TW02-04	2/55	350U - 495U	130	NA	1.45E+04 N	N/A	N/A	NO	BSL
	84-66-2	Diethyl Phthalate (DEP)	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	4.89E+06 N	N/A	N/A	NO	ND
	131-11-3	Dimethyl Phthalate	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	6.11E+07 N	N/A	N/A	NO	ND
	84-74-2	Di-n-butyl Phthalate (DBP)	663	4,600 D	µg/kg	SWMU318-SB05-03	3/55	350U - 500U	4,600	NA	6.11E+05 N	N/A	N/A	NO	BSL
	117-84-0	Di-n-octyl Phthalate	25 J	280 J	µg/kg	SWMU303-TW03-03	2/55	350U - 500U	280	NA	2.44E+05 N	N/A	N/A	NO	BSL
	206-44-0	Fluoranthene	39 J	3,000	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	3,000	NA	2.29E+05 N	N/A	N/A	NO	BSL
	86-73-7	Fluorene	17 J	59 J	µg/kg	SWMU318-TW02-04	2/55	350U - 495U	59	NA	2.75E+05 N	N/A	N/A	NO	BSL
	118-74-1	Hexachlorobenzene	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	3.04E+02 C	N/A	N/A	NO	ND
	87-68-3	Hexachlorobutadiene	7 J	7 J	µg/kg	SWMU318-SB03-04	1/62	5.56U - 133U	7	NA	6.24E+03 C	N/A	N/A	NO	BSL
	77-47-4	Hexachlorocyclopentadiene	ND	ND	µg/kg	NA	0/55	360U - 2000U	ND	NA	3.65E+04 N	N/A	N/A	NO	ND
	67-72-1	Hexachloroethane	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	3.47E+04 C	N/A	N/A	NO	ND
	193-39-5	Indeno(1,2,3-cd)pyrene	28 J	440	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	440	NA	6.21E+02 C	N/A	N/A	YES	CHEM
	78-59-1	Isophorone	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	5.12E+05 C	N/A	N/A	NO	ND
	91-20-3	Naphthalene	0.97 J	3,630	µg/kg	SWMU318-SB03-04	17/62	5.56U - 15U	3,630	NA	5.59E+03 N	N/A	N/A	NO	BSL
	98-95-3	Nitrobenzene	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.96E+03 N	N/A	N/A	NO	ND
	621-64-7	n-Nitrosodi-n-propylamine	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	6.95E+01 C	N/A	N/A	NO	ND
	86-30-6	n-Nitrosodiphenylamine	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	9.93E+04 C	N/A	N/A	NO	ND
	87-86-5	Pentachlorophenol	ND	ND	µg/kg	NA	0/55	760U - 2000U	ND	NA	2.98E+03 C	N/A	N/A	NO	ND
	85-01-8	Phenanthrene	18 J	170 J	µg/kg	SWMU318-SB05-03	2/55	350U - 500U	170	NA	2.32E+05 N [15]	N/A	N/A	NO	BSL
	108-95-2	Phenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.83E+06 N	N/A	N/A	NO	ND
	129-00-0	Pyrene	55 J	2,200	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	2,200	NA	2.32E+05 N	N/A	N/A	NO	BSL

TABLE 2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Subsurface Soil (cont)		**Metals (mg/kg)**													
	7440-38-2	Arsenic	1.1 J	51	mg/kg	SWMU318-SB04-02	33/56	0.3U - 17U	51	2.69	3.90E-01 C	N/A	N/A	YES	ASL
	7440-39-3	Barium	4.8 J	59.8	mg/kg	SWMU318-SB11-01	53/56	21.3U - 25.5U	59.8	24.7	5.37E+02 N	N/A	N/A	NO	BSL
	7440-43-9	Cadmium	0.066 J	1.9	mg/kg	SWMU318-SB16-02	12/56	0.037U - 1.8U	1.9	ND	3.70E+00 N	N/A	N/A	NO	BSL
	7440-47-3	Chromium	3	36.5	mg/kg	SWMU318-SB27-03	56/56	(6)	36.5	24.0	2.11E+02 C	N/A	N/A	NO	BSL
	7439-92-1	Lead	1 J	36 J	mg/kg	SWMU318-SB05-02	54/56	2.65U - 3.1U	36	14.1	4.00E+02 N	N/A	N/A	NO	BSL
	7439-97-6	Mercury	0.024 J	0.11	mg/kg	SWMU318-SB06-02	21/56	0.01U - 0.16U	0.11	0.0472	2.35E+00 N	N/A	N/A	NO	BSL
	7782-49-2	Selenium	0.355 J	1.1	mg/kg	SWMU318-SB11-01	16/56	0.47UJ - 1.8U	1.1	0.807	3.91E+01 N	N/A	N/A	NO	BSL
	7440-22-4	Silver	ND	ND	mg/kg	NA	0/56	0.1U - 1.7U	ND	0.182	3.91E+01 N	N/A	N/A	NO	ND

(1) J - Analyte present - Reported value is estimated
D - Result value is based on diluted analysis
U - Not detected
UJ - Reported quantitation limit is qualified as estimated

(2) Maximum concentration used for screening
(3) MCB Camp Lejeune Base Background Study, Final (Baker, 2001): 2 * Mean (1/2 nondetects) - AOC 2
(4) All non-carcinogenic criteria were divided by 10 to account for potential additive effects of chemicals
USEPA Region IX Residential Soil COC Screening Value (derived from USEPA Region IX PRG Table - October, 2004)
(5) Rationale Codes

Selection Reason:	Same chemical class (CHEM)
	No Screening Criteria (NSC)
	Above Screening Levels (ASL)
Deletion Reason:	Below Screening Level (BSL)

(6) No detection limits given; analyte detected in every sample.
(7) Screening level for 1,2,4-trichlorobenzene used as a surrogate.
(8) Screening value for 1,2-dichloroethene (cis) used as a surrogate.
(9) Screening value for 1,3-dichloropropene (total) used as a surrogate.
(10) Screening level for 2-chlorotoluene used as a surrogate.
(11) Screening level for isopropylbenzene used as a surrogate.
(12) Screening value for xylenes (total) used as a surrogate.
(13) Screening value for naphthalene used as a surrogate
(14) Screening value for acenaphthene used as a surrogate.
(15) Screening value for pyrene used as a surrogate.

Definitions: N/A = Not Applicable
NA = Not Analyzed
ND = Not Detected
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered

C = Carcinogenic
N = Non-Carcinogenic

mg/kg = milligrams per kilogram
ug/kg = microgram per kilogram

TABLE 2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil for Construction Workers
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Subsurface Soil		**Volatile Organic Compounds (ug/kg)**													
	630-20-6	1,1,1,2-Tetrachloroethane	3 J	3 J	µg/kg	SWMU318-SB03-04	1/62	2.22U - 133U	3	NA	7.28E+03 C	N/A	N/A	NO	BSL
	71-55-6	1,1,1-Trichloroethane (TCA)	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	6.95E+05 N	N/A	N/A	NO	ND
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	µg/kg	NA	0/69	2.22U - 133U	ND	NA	9.29E+02 C	N/A	N/A	NO	ND
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ND	µg/kg	NA	0/7	6U - 12U	ND	NA	6.87E+06 N	N/A	N/A	NO	ND
	79-00-5	1,1,2-Trichloroethane	93	93	µg/kg	SWMU318-TW02-04	1/69	1.11U - 133U	93	NA	1.61E+03 C	N/A	N/A	NO	BSL
	75-34-3	1,1-Dichloroethane	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	1.74E+05 N	N/A	N/A	NO	ND
	75-35-4	1,1-Dichloroethene	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	4.13E+04 N	N/A	N/A	NO	ND
	563-58-6	1,1-Dichloropropene	ND	ND	µg/kg	NA	0/62	1.11U - 133U	ND	NA	N/A	N/A	N/A	NO	ND
	87-61-6	1,2,3-Trichlorobenzene	0.53 J	4 J	µg/kg	SWMU318-SB03-04	18/62	5.6U - 133U	4	NA	2.16E+04 N (7)	N/A	N/A	NO	BSL
	96-18-4	1,2,3-Trichloropropane	ND	ND	µg/kg	NA	0/36	2.22U - 2.93U	ND	NA	7.60E+01 C	N/A	N/A	NO	ND
	120-82-1	1,2,4-Trichlorobenzene	0.4 J	6 J	µg/kg	SWMU318-SB03-04	20/65	5.6U - 133U	6	NA	2.16E+04 N	N/A	N/A	NO	BSL
	95-63-6	1,2,4-Trimethylbenzene	0.43 J	61	µg/kg	SWMU318-SB11-03	11/62	2.22U - 133U	61	NA	1.70E+04 N	N/A	N/A	NO	BSL
	96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	ND	ND	µg/kg	NA	0/65	5.56U - 133U	ND	NA	2.02E+03 C	N/A	N/A	NO	ND
	106-93-4	1,2-Dibromoethane (EDB)	ND	ND	µg/kg	NA	0/65	2.22U - 133U	ND	NA	7.30E+01 C	N/A	N/A	NO	ND
	95-50-1	1,2-Dichlorobenzene (o-)	4 J	6.6	µg/kg	SWMU318-SB07-02	2/69	1.1U - 133U	6.6	NA	4.08E+05 N	N/A	N/A	NO	BSL
	107-06-2	1,2-Dichloroethane	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	6.03E+02 C	N/A	N/A	NO	ND
	156-59-2	1,2-Dichloroethene (cis)	0.84 J	18	µg/kg	SWMU318-SB26-02	5/65	1.11U - 133U	18	NA	1.46E+04 N	N/A	N/A	NO	BSL
	540-59-0	1,2-Dichloroethene (total)	21	21	µg/kg	SWMU318-SB26-02	1/8	5.3U - 62U	21	NA	1.46E+04 N (8)	N/A	N/A	NO	BSL
	156-60-5	1,2-Dichloroethene (trans)	3 J	3 J	µg/kg	SWMU318-SB26-02	1/65	1.11U - 133U	3	NA	2.35E+04 N	N/A	N/A	NO	BSL
	78-87-5	1,2-Dichloropropane	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	7.42E+02 C	N/A	N/A	NO	ND
	108-67-8	1,3,5-Trimethylbenzene	0.53 J	46	µg/kg	SWMU318-SB03-04	3/62	2.22U - 133U	46	NA	6.97E+03 N	N/A	N/A	NO	BSL
	541-73-1	1,3-Dichlorobenzene (m-)	41	41	µg/kg	SWMU318-SB07-04	1/69	1.1U - 133U	41	NA	2.09E+05 N	N/A	N/A	NO	BSL
	142-28-9	1,3-Dichloropropane	ND	ND	µg/kg	NA	0/62	1.11U - 133U	ND	NA	3.61E+04 N	N/A	N/A	NO	ND
	10061-01-5	1,3-Dichloropropene (cis)	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	1.76E+03 C (9)	N/A	N/A	NO	ND
	10061-02-6	1,3-Dichloropropene (trans)	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	1.76E+03 C (9)	N/A	N/A	NO	ND
	106-46-7	1,4-Dichlorobenzene (p-)	1.3	7 J	µg/kg	SWMU318-SB07-04	6/69	2.22U - 133U	7	NA	7.87E+03 C	N/A	N/A	NO	BSL
	594-20-7	2,2-Dichloropropane	ND	ND	µg/kg	NA	0/62	1.11U - 133U	ND	NA	N/A	N/A	N/A	NO	ND
	78-93-3	2-Butanone (MEK)	5 J	14 J	µg/kg	SWMU303-IS02-03	4/11	10UJ - 250U	14	NA	1.13E+07 N	N/A	N/A	NO	BSL
	95-49-8	2-Chlorotoluene	ND	ND	µg/kg	NA	0/62	2.22U - 133U	ND	NA	5.60E+04 N	N/A	N/A	NO	ND
	591-78-6	2-Hexanone (MBK)	300	300	µg/kg	SWMU318-TW02-04	1/11	10UJ - 250U	300	NA	N/A	N/A	N/A	YES	NSC
	106-43-4	4-Chlorotoluene	ND	ND	µg/kg	NA	0/62	2.22U - 133U	ND	NA	5.60E+04 N (10)	N/A	N/A	NO	ND
	99-87-6	4-Isopropyltoluene	7 J	46	µg/kg	SWMU318-SB03-04	5/62	2.22U - 133U	46	NA	1.98E+05 N (11)	N/A	N/A	NO	BSL
	108-10-1	4-Methyl-2-pentanone (MIBK)	ND	ND	µg/kg	NA	0/11	10U - 250U	ND	NA	4.70E+06 N	N/A	N/A	NO	ND
	67-64-1	Acetone	8 J	890	µg/kg	SWMU303-IS04-03	9/11	12UJ - 21U	890	NA	5.43E+06 N	N/A	N/A	NO	BSL
	71-43-2	Benzene	ND	ND	µg/kg	NA	0/69	1.1U - 133U	ND	NA	1.41E+03 C	N/A	N/A	NO	ND
	108-86-1	Bromobenzene	ND	ND	µg/kg	NA	0/62	2.22U - 133U	ND	NA	9.22E+03 N	N/A	N/A	NO	ND
	74-97-5	Bromochloromethane	ND	ND	µg/kg	NA	0/62	2.22U - 133U	ND	NA	N/A	N/A	N/A	NO	ND
	75-27-4	Bromodichloromethane	2 J	2 J	µg/kg	SWMU318-TW02-04	1/69	2.22U - 133U	2	NA	1.83E+03 C	N/A	N/A	NO	BSL
	75-25-2	Bromoform	5 J	5 J	µg/kg	SWMU318-SB03-04	1/69	2.22U - 133U	5	NA	2.18E+05 C	N/A	N/A	NO	BSL
	74-83-9	Bromomethane	ND	ND	µg/kg	NA	0/69	5.56U - 133U	ND	NA	1.31E+03 N	N/A	N/A	NO	ND
	135-98-8	Butylbenzene, sec-	17	23.85	µg/kg	SWMU318-SB11-03	2/62	2.22U - 133U	23.85	NA	1.63E+05 N	N/A	N/A	NO	BSL
	98-06-6	Butylbenzene, tert-	ND	ND	µg/kg	NA	0/62	2.22U - 133U	ND	NA	1.97E+05 N	N/A	N/A	NO	ND
	75-15-0	Carbon Disulfide	3 J	3 J	µg/kg	SWMU318-TW03-04	1/11	5.3U - 62U	3	NA	1.20E+05 N	N/A	N/A	NO	BSL
	56-23-5	Carbon Tetrachloride	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	5.49E+02 C	N/A	N/A	NO	ND
	108-90-7	Chlorobenzene	17	17	µg/kg	SWMU318-SB09-03	1/69	1.1U - 133U	17	NA	5.30E+04 N	N/A	N/A	NO	BSL
	75-00-3	Chloroethane	ND	ND	µg/kg	NA	0/69	5.56U - 133U	ND	NA	6.49E+03 C	N/A	N/A	NO	ND

TABLE 2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil for Construction Workers
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Subsurface Soil (cont)		**Volatile Organic Compounds (ug/kg) (Cont)**													
	67-66-3	Chloroform	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	4.70E+02 C	N/A	N/A	NO	ND
	74-87-3	Chloromethane	ND	ND	µg/kg	NA	0/69	5.56U - 133U	ND	NA	1.56E+04 N	N/A	N/A	NO	ND
	110-82-7	Cyclohexane	12	12	µg/kg	SWMU318-TW02-04	1/7	6U - 12U	12	NA	9.43E+05 N	N/A	N/A	NO	BSL
	124-48-1	Dibromochloromethane	ND	ND	µg/kg	NA	0/69	2.22U - 133U	ND	NA	2.55E+03 C	N/A	N/A	NO	ND
	74-95-3	Dibromomethane	ND	ND	µg/kg	NA	0/62	2.22U - 133U	ND	NA	2.34E+04 N	N/A	N/A	NO	ND
	75-71-8	Dichlorodifluoromethane (Freon-12)	ND	ND	µg/kg	NA	0/65	5.56U - 133U	ND	NA	3.08E+04 N	N/A	N/A	NO	ND
	100-41-4	Ethylbenzene	ND	ND	µg/kg	NA	0/69	1.1U - 133U	ND	NA	7.42E+05 N	N/A	N/A	NO	ND
	87-68-3	Hexachlorobutadiene	7 J	7 J	µg/kg	SWMU318-SB03-04	1/62	5.56U - 133U	7	NA	2.21E+04 C	N/A	N/A	NO	BSL
	98-82-8	Isopropylbenzene (Cumene)	15	39	µg/kg	SWMU318-SB07-04	2/65	2.22U - 549U	39	NA	1.98E+05 N	N/A	N/A	NO	BSL
	79-20-9	Methyl Acetate	19 J	19 J	µg/kg	SWMU318-SB04-01	1/7	6U - 12U	19	NA	9.15E+06 N	N/A	N/A	NO	BSL
	108-87-2	Methyl Cyclohexane	10	10	µg/kg	SWMU318-TW02-04	1/7	6U - 12U	10	NA	8.72E+05 N	N/A	N/A	NO	BSL
	1634-04-4	Methyl Tert-Butyl Ether (MTBE)	ND	ND	µg/kg	NA	0/7	6U - 12U	ND	NA	7.00E+04 C	N/A	N/A	NO	ND
	75-09-2	Methylene Chloride	1 J	33	µg/kg	SWMU318-TW01-04	4/69	5.3U - 133U	33	NA	2.05E+04 C	N/A	N/A	NO	BSL
	91-20-3	Naphthalene	0.97 J	3,630	µg/kg	SWMU318-SB03-04	17/62	5.56U - 15U	3,630	NA	1.88E+04 N	N/A	N/A	NO	BSL
	104-51-8	n-Butylbenzene	0.61 J	1,230	µg/kg	SWMU318-SB03-04	9/62	2.22U - 133U	1,230	NA	2.19E+05 N	N/A	N/A	NO	BSL
	103-65-1	n-Propylbenzene	2.85 J	2.85 J	µg/kg	SWMU318-SB11-03	1/62	2.22U - 133U	2.85	NA	2.19E+05 N	N/A	N/A	NO	BSL
	100-42-5	Styrene (Ethenylbenzene)	2 J	2 J	µg/kg	SWMU318-SB03-04	1/69	1.11U - 133U	2	NA	1.81E+06 N	N/A	N/A	NO	BSL
	127-18-4	Tetrachloroethene (PCE)	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	1.31E+03 C	N/A	N/A	NO	ND
	108-88-3	Toluene	0.9 J	4 J	µg/kg	SWMU318-SB07-04	3/69	1.1U - 133U	4	NA	2.21E+05 N	N/A	N/A	NO	BSL
	79-01-6	Trichloroethene (TCE)	ND	ND	µg/kg	NA	0/69	1.11U - 133U	ND	NA	1.15E+02 C	N/A	N/A	NO	ND
	75-69-4	Trichlorofluoromethane	ND	ND	µg/kg	NA	0/40	5.56U - 12U	ND	NA	1.28E+05 N	N/A	N/A	NO	ND
	75-01-4	Vinyl Chloride	ND	ND	µg/kg	NA	0/69	2.22U - 133U	ND	NA	N/A	N/A	N/A	NO	ND
	000000-01-4	Xylene, m/p-	2.5 J	4.2 J	µg/kg	SWMU318-SB13-01	7/62	2.22U - 267U	4.2	NA	8.97E+04 N (12)	N/A	N/A	NO	BSL
	95-47-6	Xylene, o-	2.9 J	5.25 J	µg/kg	SWMU318-SB05-02	5/62	1.11U - 133U	5.25	NA	8.97E+04 N (12)	N/A	N/A	NO	BSL
	1330-20-7	Xylenes, total	ND	ND	µg/kg	NA	0/11	1.1U - 24UJ	ND	NA	8.97E+04 N	N/A	N/A	NO	ND
		Semivolatile Organic Compounds (ug/kg)													
	92-52-4	1,1'-Biphenyl	ND	ND	µg/kg	NA	0/51	360U - 500U	ND	NA	2.33E+06 N	N/A	N/A	NO	ND
	108-60-1	2,2'-Oxybis[1-chloropropane]	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	7.35E+03 C	N/A	N/A	NO	ND
	95-95-4	2,4,5-Trichlorophenol	ND	ND	µg/kg	NA	0/55	350U - 1200U	ND	NA	6.16E+06 N	N/A	N/A	NO	ND
	88-06-2	2,4,6-Trichlorophenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	6.16E+03 N	N/A	N/A	NO	ND
	120-83-2	2,4-Dichlorophenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.85E+05 N	N/A	N/A	NO	ND
	105-67-9	2,4-Dimethylphenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.23E+06 N	N/A	N/A	NO	ND
	51-28-5	2,4-Dinitrophenol	ND	ND	µg/kg	NA	0/55	900U - 2600U	ND	NA	1.23E+05 N	N/A	N/A	NO	ND
	121-14-2	2,4-Dinitrotoluene	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.23E+05 N	N/A	N/A	NO	ND
	606-20-2	2,6-Dinitrotoluene	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	6.16E+04 N	N/A	N/A	NO	ND
	91-58-7	2-Chloronaphthalene	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	2.34E+06 N	N/A	N/A	NO	ND
	95-57-8	2-Chlorophenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	2.36E+04 N	N/A	N/A	NO	ND
	91-57-6	2-Methylnaphthalene	ND	ND	µg/kg	NA	0/55	350U - 500UJ	ND	NA	1.88E+04 N (13)	N/A	N/A	NO	ND
	95-48-7	2-Methylphenol (o-Cresol)	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	3.08E+06 N	N/A	N/A	NO	ND
	88-74-4	2-Nitroaniline	ND	ND	µg/kg	NA	0/55	760U - 2000U	ND	NA	1.83E+05 N	N/A	N/A	NO	ND
	88-75-5	2-Nitrophenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	N/A	N/A	N/A	NO	ND
	91-94-1	3,3'-Dichlorobenzidine	87 J	87 J	µg/kg	SWMU318-SB05-03	1/55	360U - 2000U	87	NA	3.83E+03 C	N/A	N/A	NO	BSL
	99-09-2	3-Nitroaniline	ND	ND	µg/kg	NA	0/55	760U - 2000U	ND	NA	8.21E+04 C	N/A	N/A	NO	ND
	534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	µg/kg	NA	0/55	760U - 2000U	ND	NA	6.16E+03 N	N/A	N/A	NO	ND
	101-55-3	4-Bromophenyl-phenylether	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	N/A	N/A	N/A	NO	ND
	59-50-7	4-Chloro-3-methylphenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	N/A	N/A	N/A	NO	ND
	106-47-8	4-Chloroaniline	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	2.46E+05 N	N/A	N/A	NO	ND

TABLE 2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil for Construction Workers
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Subsurface Soil (cont)		**Semivolatile Organic Compounds (ug/kg) (Cont)**													
	7005-72-3	4-Chlorophenyl-phenylether	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	N/A	N/A	N/A	NO	ND
	106-44-5	4-Methylphenol (p-Cresol)	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	3.08E+05 N	N/A	N/A	NO	ND
	100-01-6	4-Nitroaniline	ND	ND	µg/kg	NA	0/55	760U - 2000U	ND	NA	8.21E+04 C	N/A	N/A	NO	ND
	100-02-7	4-Nitrophenol	ND	ND	µg/kg	NA	0/55	760U - 2000U	ND	NA	N/A	N/A	N/A	NO	ND
	83-32-9	Acenaphthene	20 J	20 J	µg/kg	SWMU318-SB01-04	1/55	350U - 500U	20	NA	2.92E+06 N	N/A	N/A	NO	BSL
	208-96-8	Acenaphthylene	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	2.92E+06 N [14]	N/A	N/A	NO	ND
	98-86-2	Acetophenone	ND	ND	µg/kg	NA	0/51	360U - 500U	ND	NA	N/A	N/A	N/A	NO	ND
	120-12-7	Anthracene	31 J	31 J	µg/kg	SWMU318-SB05-03	1/55	350U - 500U	31	NA	2.38E+07 N	N/A	N/A	NO	BSL
	1912-24-9	Atrazine	ND	ND	µg/kg	NA	0/51	360U - 500U	ND	NA	7.76E+03 C	N/A	N/A	NO	ND
	100-52-7	Benzaldehyde	18 J	31 J	µg/kg	SWMU318-SB06-01	3/51	360U - 500U	31	NA	6.16E+06 N	N/A	N/A	NO	BSL
	56-55-3	Benzo(a)anthracene	39 J	1,200	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	1,200	NA	2.11E+03 C	N/A	N/A	YES	CHEM
	50-32-8	Benzo(a)pyrene	43 J	820	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	820	NA	2.11E+02 C	N/A	N/A	YES	ASL
	205-99-2	Benzo(b)fluoranthene	68 J	1,500	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	1,500	NA	2.11E+03 C	N/A	N/A	YES	CHEM
	191-24-2	Benzo(g,h,i)perylene	68 J	180 J	µg/kg	SWMU303-TW01-04	3/55	350U - 500U	180	NA	2.91E+06 N [15]	N/A	N/A	NO	BSL
	207-08-9	Benzo(k)fluoranthene	39 J	1,200	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	1,200	NA	2.11E+04 C	N/A	N/A	YES	CHEM
	111-91-1	Bis(2-chloroethoxy)methane	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	N/A	N/A	N/A	NO	ND
	111-44-4	Bis(2-chloroethyl)ether	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	5.75E+02 C	N/A	N/A	NO	ND
	117-81-7	Bis(2-ethylhexyl) Phthalate (BEHP)	72 J	660 J	µg/kg	SWMU318-TW03-04	12/55	360U - 495U	660	NA	1.23E+05 C	N/A	N/A	NO	BSL
	85-68-7	Butyl Benzyl Phthalate	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.23E+07 N	N/A	N/A	NO	ND
	105-60-2	Caprolactam	ND	ND	µg/kg	NA	0/51	360U - 500U	ND	NA	3.08E+07 N	N/A	N/A	NO	ND
	86-74-8	Carbazole	65 J	65 J	µg/kg	SWMU318-SB05-03	1/55	350U - 500U	65	NA	8.62E+04 C	N/A	N/A	YES	CHEM
	218-01-9	Chrysene	50 J	1,900	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	1,900	NA	2.11E+05 C	N/A	N/A	YES	CHEM
	53-70-3	Dibenz(a,h)anthracene	84 J	180 J	µg/kg	SWMU318-SB05-03	2/55	350U - 500U	180	NA	2.11E+02 C	N/A	N/A	YES	CHEM
	132-64-9	Dibenzofuran	14 J	130 J	µg/kg	SWMU318-TW02-04	2/55	350U - 495U	130	NA	1.56E+05 N	N/A	N/A	NO	BSL
	84-66-2	Diethyl Phthalate (DEP)	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	4.92E+07 N	N/A	N/A	NO	ND
	131-11-3	Dimethyl Phthalate	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	6.16E+08 N	N/A	N/A	NO	ND
	84-74-2	Di-n-butyl Phthalate (DBP)	663	4,600 D	µg/kg	SWMU318-SB05-03	3/55	350U - 500U	4,600	NA	6.16E+06 N	N/A	N/A	NO	BSL
	117-84-0	Di-n-octyl Phthalate	25 J	280 J	µg/kg	SWMU303-TW03-03	2/55	350U - 500U	280	NA	2.46E+06 N	N/A	N/A	NO	BSL
	206-44-0	Fluoranthene	39 J	3,000	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	3,000	NA	2.20E+06 N	N/A	N/A	NO	BSL
	86-73-7	Fluorene	17 J	59 J	µg/kg	SWMU318-TW02-04	2/55	350U - 495U	59	NA	2.63E+06 N	N/A	N/A	NO	BSL
	118-74-1	Hexachlorobenzene	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.08E+03 C	N/A	N/A	NO	ND
	87-68-3	Hexachlorobutadiene	7 J	7 J	µg/kg	SWMU318-SB03-04	1/62	5.56U - 133U	7	NA	2.21E+04 C	N/A	N/A	NO	BSL
	77-47-4	Hexachlorocyclopentadiene	ND	ND	µg/kg	NA	0/55	360U - 2000U	ND	NA	3.66E+05 N	N/A	N/A	NO	ND
	67-72-1	Hexachloroethane	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.23E+05 C	N/A	N/A	NO	ND
	193-39-5	Indeno(1,2,3-cd)pyrene	28 J	440	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	440	NA	2.11E+03 C	N/A	N/A	YES	CHEM
	78-59-1	Isophorone	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	5.12E+05 C	N/A	N/A	NO	ND
	91-20-3	Naphthalene	0.97 J	3,630	µg/kg	SWMU318-SB03-04	17/62	5.56U - 15U	3,630	NA	1.88E+04 N	N/A	N/A	NO	BSL
	98-95-3	Nitrobenzene	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.03E+04 N	N/A	N/A	NO	ND
	621-64-7	n-Nitrosodi-n-propylamine	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	2.46E+02 C	N/A	N/A	NO	ND
	86-30-6	n-Nitrosodiphenylamine	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	3.52E+05 C	N/A	N/A	NO	ND
	87-86-5	Pentachlorophenol	ND	ND	µg/kg	NA	0/55	760U - 2000U	ND	NA	9.00E+03 C	N/A	N/A	NO	ND
	85-01-8	Phenanthrene	18 J	170 J	µg/kg	SWMU318-SB05-03	2/55	350U - 500U	170	NA	2.91E+06 N [12]	N/A	N/A	NO	BSL
	108-95-2	Phenol	ND	ND	µg/kg	NA	0/55	350U - 500U	ND	NA	1.85E+07 N	N/A	N/A	NO	ND
	129-00-0	Pyrene	55 J	2,200	µg/kg	SWMU318-SB05-03	5/55	350U - 500U	2,200	NA	2.91E+06 N	N/A	N/A	NO	BSL

TABLE 2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil for Construction Workers
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Subsurface Soil (cont)		**Metals (mg/kg)**													
	7440-38-2	Arsenic	1.1 J	51	mg/kg	SWMU318-SB04-02	33/56	0.3U - 17U	51	2.69	1.59E+00 C	N/A	N/A	YES	ASL
	7440-39-3	Barium	4.8 J	59.8	mg/kg	SWMU318-SB11-01	53/56	21.3U - 25.5U	59.8	24.7	6.66E+03 N	N/A	N/A	NO	BSL
	7440-43-9	Cadmium	0.066 J	1.9	mg/kg	SWMU318-SB16-02	12/56	0.037U - 1.8U	1.9	ND	4.51E+01 N	N/A	N/A	NO	BSL
	7440-47-3	Chromium	3	36.5	mg/kg	SWMU318-SB27-03	56/56	(6)	36.5	24.0	4.48E+02 C	N/A	N/A	NO	BSL
	7439-92-1	Lead	1 J	36 J	mg/kg	SWMU318-SB05-02	54/56	2.65U - 3.1U	36	14.1	8.00E+01 N	N/A	N/A	NO	BSL
	7439-97-6	Mercury	0.024 J	0.11	mg/kg	SWMU318-SB06-02	21/56	0.01U - 0.16U	0.11	0.0472	3.07E+01 N	N/A	N/A	NO	BSL
	7782-49-2	Selenium	0.355 J	1.1	mg/kg	SWMU318-SB11-01	16/56	0.47UJ - 1.8U	1.1	0.807	5.11E+02 N	N/A	N/A	NO	BSL
	7440-22-4	Silver	ND	ND	mg/kg	NA	0/56	0.1U - 1.7U	ND	0.182	5.11E+02 N	N/A	N/A	NO	ND

(1) J - Analyte present - Reported value is estimated
D - Result value is based on diluted analysis
U - Not detected
UJ - Reported quantitation limit is qualified as estimated

(2) Maximum concentration used for screening
(3) MCB Camp Lejeune Base Background Study, Final (Baker, 2001): 2 * Mean (1/2 nondetects) - AOC 2
(4) All non-carcinogenic criteria were divided by 10 to account for potential additive effects of chemicals
USEPA Region IX Industrial Soil COC Screening Value (derived from USEPA Region IX PRG Table - October, 2004)
(5) Rationale Codes

Selection Reason:	Same chemical class (CHEM)
	No Screening Criteria (NSC)
	Above Screening Levels (ASL)
Deletion Reason:	Below Screening Level (BSL)

(6) No detection limits given; analyte detected in every sample.
(7) Screening level for 1,2,4-trichlorobenzene used as a surrogate.
(8) Screening value for 1,2-dichloroethene (cis) used as a surrogate.
(9) Screening value for 1,3-dichloropropene (total) used as a surrogate.
(10) Screening level for 2-chlorotoluene used as a surrogate.
(11) Screening level for isopropylbenzene used as a surrogate.
(12) Screening value for xylenes (total) used as a surrogate.
(13) Screening value for naphthalene used as a surrogate
(14) Screening value for acenaphthene used as a surrogate.
(15) Screening value for pyrene used as a surrogate.

Definitions: N/A = Not Applicable
NA = Not Analyzed
ND = Not Detected
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered

C = Carcinogenic
N = Non-Carcinogenic

mg/kg = milligrams per kilogram
ug/kg = microgram per kilogram

TABLE 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Shallow Groundwater		**Volatile Organic Compounds (ug/L)**													
	630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	µg/L	NA	0/48	2U - 25U	ND	NA	4.32E-01 C	N/A	N/A	NO	ND
	71-55-6	1,1,1-Trichloroethane (TCA)	0.7 J	0.7 J	µg/L	SWMU318-GW09	1/54	1U - 25U	0.7	NA	3.17E+02 N	200	MCL	NO	BSL
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	5.53E-02 C	N/A	N/A	NO	ND
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	54	180	µg/L	SWMU318-GW10-01	4/12	10U - 10U	180	NA	5.92E+03 N	N/A	N/A	NO	BSL
	79-00-5	1,1,2-Trichloroethane	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	2.00E-01 C	5	MCL	NO	ND
	75-34-3	1,1-Dichloroethane	0.33 J	14	µg/L	SWMU318-GW31-01	14/54	1U - 25U	14	NA	8.11E+01 N	N/A	N/A	NO	BSL
	75-35-4	1,1-Dichloroethene	0.3 J	15.4	µg/L	SWMU318-GW26-01	18/54	1U - 25U	15.4	NA	3.39E+01 N	7	MCL	NO	BSL
	563-58-6	1,1-Dichloropropene	ND	ND	µg/L	NA	0/48	1U - 25U	ND	NA	N/A	N/A	N/A	NO	ND
	87-61-6	1,2,3-Trichlorobenzene	0.46 J	2.4 J	µg/L	SWMU318-GW37	3/48	2U - 50U	2.4	NA	7.16E-01 N [6]	70	MCL [6]	YES	ASL
	96-18-4	1,2,3-Trichloropropane	ND	ND	µg/L	NA	0/10	2U - 20U	ND	NA	5.60E-03 C	N/A	N/A	NO	ND
	120-82-1	1,2,4-Trichlorobenzene	0.45 J	0.45 J	µg/L	SWMU318-GW51	1/53	2U - 50U	0.45	NA	7.16E-01 N	70	MCL	NO	BSL
	95-63-6	1,2,4-Trimethylbenzene	0.32 J	35	µg/L	SWMU318-GW37-01	12/48	2U - 20U	35	NA	1.23E+00 N	N/A	N/A	YES	ASL
	96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	ND	ND	µg/L	NA	0/52	2U - 50U	ND	NA	4.76E-02 C	0.2	MCL	NO	ND
	106-93-4	1,2-Dibromoethane (EDB)	ND	ND	µg/L	NA	0/51	2U - 25U	ND	NA	5.60E-03 C	0.05	MCL	NO	ND
	95-50-1	1,2-Dichlorobenzene (o-)	0.4 J	4 J	µg/L	SWMU318-GW06-01	5/53	2U - 25U	4	NA	3.70E+01 N	600	MCL	NO	BSL
	107-06-2	1,2-Dichloroethane	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	1.23E-01 C	5	MCL	NO	ND
	156-59-2	1,2-Dichloroethene (cis)	0.6 J	800	µg/L	SWMU318-GW03-01, SWMU318-GW34-01	45/54	1U - 10U	800	NA	6.08E+00 N	70	MCL	YES	ASL
	540-59-0	1,2-Dichloroethene (total)	0.9 J	670 D	µg/L	SWMU318-GW10-01	12/15	10U - 10U	670	NA	6.08E+00 N [7]	70	MCL [7]	YES	ASL
	156-60-5	1,2-Dichloroethene (trans)	0.6 J	18.2	µg/L	SWMU318-GW07A-01	16/54	1U - 25U	18.2	NA	1.22E+01 N	100	MCL	YES	ASL
	78-87-5	1,2-Dichloropropane	0.3 J	0.3 J	µg/L	SWMU318-GW02-01	1/54	1U - 25U	0.3	NA	1.65E-01 C	5	MCL	YES	ASL
	108-67-8	1,3,5-Trimethylbenzene	0.35 J	30	µg/L	SWMU318-GW06-01	7/48	2U - 25U	30	NA	1.23E+00 N	N/A	N/A	YES	ASL
	541-73-1	1,3-Dichlorobenzene (m-)	0.65 J	0.7 J	µg/L	SWMU318-GW03	2/53	2U - 25U	0.7	NA	1.83E+01 N	N/A	N/A	NO	BSL
	142-28-9	1,3-Dichloropropane	ND	ND	µg/L	NA	0/48	1U - 25U	ND	NA	1.22E+01 N	N/A	N/A	NO	ND
	10061-01-5	1,3-Dichloropropene (cis)	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	3.95E-01 C [8]	N/A	N/A	NO	ND
	10061-02-6	1,3-Dichloropropene (trans)	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	3.95E-01 C [8]	N/A	N/A	NO	ND
	106-46-7	1,4-Dichlorobenzene (p-)	0.8 J	2	µg/L	SWMU318-GW02	4/53	2U - 25U	2	NA	5.02E-01 C	75	MCL	YES	ASL
	594-20-7	2,2-Dichloropropane	ND	ND	µg/L	NA	0/48	1U - 25U	ND	NA	N/A	N/A	N/A	NO	ND
	78-93-3	2-Butanone (MEK)	ND	ND	µg/L	NA	0/15	5U - 10U	ND	NA	6.97E+02 N	N/A	N/A	NO	ND
	95-49-8	2-Chlorotoluene	13 J	13 J	µg/L	SWMU318-GW06-01	1/48	2U - 25U	13	NA	1.22E+01 N	N/A	N/A	YES	ASL
	591-78-6	2-Hexanone (MBK)	ND	ND	µg/L	NA	0/15	5U - 10U	ND	NA	N/A	N/A	N/A	NO	ND
	106-43-4	4-Chlorotoluene	8 J	8 J	µg/L	SWMU318-GW07-01	1/48	2U - 25U	8	NA	1.22E+01 N [9]	N/A	N/A	NO	BSL
	99-87-6	4-Isopropyltoluene	0.7 J	150	µg/L	SWMU318-GW06-01	7/48	2U - 25U	150	NA	6.58E+01 N [10]	N/A	N/A	YES	ASL
	108-10-1	4-Methyl-2-pentanone (MIBK)	ND	ND	µg/L	NA	0/15	5U - 10U	ND	NA	1.99E+02 N	N/A	N/A	NO	ND
	67-64-1	Acetone	2 J	2 J	µg/L	SWMU318-GW20-02A	1/15	5U - 10U	2	NA	5.48E+02 N	N/A	N/A	NO	BSL
	71-43-2	Benzene	0.2 J	98	µg/L	SWMU318-GW06-01	26/54	1U - 20U	98	NA	3.54E-01 C	5	MCL	YES	ASL
	108-86-1	Bromobenzene	ND	ND	µg/L	NA	0/48	2U - 25U	ND	NA	2.03E+00 N	N/A	N/A	NO	ND
	74-97-5	Bromochloromethane	ND	ND	µg/L	NA	0/48	2U - 25U	ND	NA	N/A	N/A	N/A	NO	ND
	75-27-4	Bromodichloromethane	2 J	2 J	µg/L	SWMU318-GW09-01	1/54	1U - 25U	2	NA	1.81E-01 C	80	MCL	YES	ASL
	75-25-2	Bromoform	6 J	6 J	µg/L	SWMU318-GW06-01	1/54	1U - 25U	6	NA	8.51E+00 C	80	MCL	NO	BSL
	74-83-9	Bromomethane	ND	ND	µg/L	NA	0/54	2U - 50U	ND	NA	8.66E-01 N	N/A	N/A	NO	ND
	135-98-8	Butylbenzene, sec-	0.58 J	9 J	µg/L	SWMU318-GW06-01	4/48	2U - 25U	9	NA	2.43E+01 N	N/A	N/A	NO	BSL
	98-06-6	Butylbenzene, tert-	13 J	16 J	µg/L	SWMU318-GW01-01	2/48	2U - 25U	16	NA	2.43E+01 N	N/A	N/A	NO	BSL
	75-15-0	Carbon Disulfide	0.4 J	0.7 J	µg/L	SWMU318-GW20-02A	2/15	1U - 10U	0.7	NA	1.04E+02 N	N/A	N/A	NO	BSL
	56-23-5	Carbon Tetrachloride	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	1.71E-01 C	5	MCL	NO	ND
	108-90-7	Chlorobenzene	1	1	µg/L	SWMU318-GW20-02A	1/54	1U - 25U	1	NA	1.06E+01 N	100	MCL	NO	BSL

TABLE 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Shallow Groundwater (cont)		**Volatile Organic Compounds (ug/L) (Cont)**													
	75-00-3	Chloroethane	ND	ND	µg/L	NA	0/54	2U - 50U	ND	NA	4.64E+00 C	N/A	N/A	NO	ND
	67-66-3	Chloroform	0.44 J	0.44 J	µg/L	SWMU318-GW32-01	1/54	1U - 25U	0.44	NA	1.66E-01 C	80	MCL	YES	ASL
	74-87-3	Chloromethane	ND	ND	µg/L	NA	0/54	2U - 50U	ND	NA	1.58E+01 N	N/A	N/A	NO	ND
	110-82-7	Cyclohexane	ND	ND	µg/L	NA	0/12	10U - 10U	ND	NA	1.03E+03 N	N/A	N/A	NO	ND
	124-48-1	Dibromochloromethane	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	1.33E-01 C	80	MCL	NO	ND
	74-95-3	Dibromomethane	ND	ND	µg/L	NA	0/30	2U - 25U	ND	NA	6.08E+00 N	N/A	N/A	NO	ND
	75-71-8	Dichlorodifluoromethane (Freon-12)	0.6 J	2.3	µg/L	SWMU318-GW19	3/53	2U - 50U	2.3	NA	3.95E+01 N	N/A	N/A	NO	BSL
	100-41-4	Ethylbenzene	0.295 J	91	µg/L	SWMU318-GW06-01	22/54	1U - 10U	91	NA	1.34E+02 N	700	MCL	NO	BSL
	87-68-3	Hexachlorobutadiene	ND	ND	µg/L	NA	0/48	2U - 50U	ND	NA	8.62E-01 C	N/A	N/A	NO	ND
	98-82-8	Isopropylbenzene (Cumene)	1 J	76	µg/L	SWMU318-GW06-01	11/53	2U - 25U	76	NA	6.58E+01 N	N/A	N/A	YES	ASL
	79-20-9	Methyl Acetate	ND	ND	µg/L	NA	0/12	10U - 10U	ND	NA	6.08E+02 N	N/A	N/A	NO	ND
	108-87-2	Methyl Cyclohexane	1 J	8.5	µg/L	SWMU318-MW03	2/12	10U - 10U	8.5	NA	5.22E+02 N	N/A	N/A	NO	BSL
	1634-04-4	Methyl Tert-Butyl Ether (MTBE)	ND	ND	µg/L	NA	0/12	10U - 10U	ND	NA	1.10E+01 C	N/A	N/A	NO	ND
	75-09-2	Methylene Chloride	ND	ND	µg/L	NA	0/54	2U - 50U	ND	NA	4.28E+00 C	5	MCL	NO	ND
	91-20-3	Naphthalene	0.68 J	1,970 D	µg/L	SWMU318-GW01-01	22/48	2U - 5U	1,970	NA	6.20E-01 N	N/A	N/A	YES	ASL
	104-51-8	n-Butylbenzene	0.31 J	49	µg/L	SWMU318-GW14	7/48	2U - 20U	49	NA	2.43E+01 N	N/A	N/A	YES	ASL
	103-65-1	n-Propylbenzene	0.85 J	4	µg/L	SWMU318-GW01	3/48	2U - 25U	4	NA	2.43E+01 N	N/A	N/A	NO	BSL
	100-42-5	Styrene (Ethenylbenzene)	11 J	11 J	µg/L	SWMU318-GW06-01	1/54	1U - 25U	11	NA	1.64E+02 N	100	MCL	NO	BSL
	127-18-4	Tetrachloroethene (PCE)	0.9 J	7 J	µg/L	SWMU318-GW01-01	2/54	1U - 25U	7	NA	1.04E-01 C	5	MCL	YES	ASL
	108-88-3	Toluene	0.3 J	190	µg/L	SWMU318-GW06-01	27/54	1U - 25U	190	NA	7.23E+01 N	1000	MCL	YES	ASL
	79-01-6	Trichloroethene (TCE)	0.3 J	7,120 D	µg/L	SWMU318-GW07-01	40/54	1U - 10U	7,120	NA	2.80E-02 C	5	MCL	YES	ASL
	75-69-4	Trichlorofluoromethane	ND	ND	µg/L	NA	0/19	5U - 50U	ND	NA	1.29E+02 N	N/A	N/A	NO	ND
	75-01-4	Vinyl Chloride	0.57 J	140	µg/L	SWMU318-GW10-01, SWMU318-GW23-01	19/54	2U - 25U	140	NA	1.98E-02 C	2	MCL	YES	ASL
	000000-01-4	Xylene, m/p-	0.5 J	160	µg/L	SWMU318-GW06-01	20/53	2U - 10U	160	NA	2.06E+01 N (11)	10000	MCL (11)	YES	ASL
	95-47-6	Xylene, o-	0.3 J	84	µg/L	SWMU318-GW06-01	16/54	1U - 25U	84	NA	2.06E+01 N (11)	10000	MCL (11)	YES	ASL
	1330-20-7	Xylenes, total	0.9 J	47	µg/L	SWMU318-GW37	8/15	3U - 10U	47	NA	2.06E+01 N	10000	MCL	YES	ASL
		Semivolatile Organic Compounds (ug/L)													
	92-52-4	1,1'-Biphenyl	6 J	36	µg/L	SWMU318-GW06-01	5/19	10U - 19U	36	NA	3.04E+01 N	N/A	N/A	YES	ASL
	108-60-1	2,2'-Oxybis[1-chloropropane]	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	2.74E-01 C	N/A	N/A	NO	ND
	95-95-4	2,4,5-Trichlorophenol	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	3.65E+02 N	N/A	N/A	NO	ND
	88-06-2	2,4,6-Trichlorophenol	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	3.65E-01 N	N/A	N/A	NO	ND
	120-83-2	2,4-Dichlorophenol	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	1.09E+01 N	N/A	N/A	NO	ND
	105-67-9	2,4-Dimethylphenol	12 J	990 D	µg/L	SWMU318-GW06-01	6/19	10U - 10U	990	NA	7.30E+01 N	N/A	N/A	YES	ASL
	51-28-5	2,4-Dinitrophenol	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	7.30E+00 N	N/A	N/A	NO	ND
	121-14-2	2,4-Dinitrotoluene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	7.30E+00 N	N/A	N/A	NO	ND
	606-20-2	2,6-Dinitrotoluene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	3.65E+00 N	N/A	N/A	NO	ND
	91-58-7	2-Chloronaphthalene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	4.87E+01 N	N/A	N/A	NO	ND
	95-57-8	2-Chlorophenol	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	3.04E+00 N	N/A	N/A	NO	ND
	91-57-6	2-Methylnaphthalene	35.5	480 D	µg/L	SWMU318-GW06-01	5/19	10U - 19U	480	NA	6.20E-01 N (12)	N/A	N/A	YES	ASL
	95-48-7	2-Methylphenol (o-Cresol)	410 D	410 D	µg/L	SWMU318-GW06-01	1/19	10U - 19U	410	NA	1.82E+02 N	N/A	N/A	YES	ASL
	88-74-4	2-Nitroaniline	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	1.09E+01 N	N/A	N/A	NO	ND
	88-75-5	2-Nitrophenol	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	91-94-1	3,3'-Dichlorobenzidine	ND	ND	µg/L	NA	0/19	10U - 19UJ	ND	NA	1.49E-01 C	N/A	N/A	NO	ND
	99-09-2	3-Nitroaniline	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	3.20E+00 C	N/A	N/A	NO	ND
	534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	3.65E-01 N	N/A	N/A	NO	ND

TABLE 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Shallow Groundwater (cont)		**Semivolatile Organic Compounds (ug/L) (Cont)**													
	101-55-3	4-Bromophenyl-phenylether	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	59-50-7	4-Chloro-3-methylphenol	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	106-47-8	4-Chloroaniline	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	1.46E+01 N	N/A	N/A	NO	ND
	7005-72-3	4-Chlorophenyl-phenylether	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	106-44-5	4-Methylphenol (p-Cresol)	250 DJ	250 DJ	µg/L	SWMU318-GW06-01	1/19	10U - 19U	250	NA	1.82E+01 N	N/A	N/A	YES	ASL
	100-01-6	4-Nitroaniline	ND	ND	µg/L	NA	0/19	25U - 47UJ	ND	NA	3.20E+00 C	N/A	N/A	NO	ND
	100-02-7	4-Nitrophenol	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	N/A	N/A	N/A	NO	ND
	83-32-9	Acenaphthene	29.5	280 DJ	µg/L	SWMU318-GW06-01	5/19	10U - 19U	280	NA	3.65E+01 N	N/A	N/A	YES	ASL
	208-96-8	Acenaphthylene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	3.65E+01 N [12]	N/A	N/A	NO	ND
	98-86-2	Acetophenone	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	120-12-7	Anthracene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	1.83E+02 N	N/A	N/A	NO	ND
	1912-24-9	Atrazine	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	3.03E-01 C	3	MCL	NO	ND
	100-52-7	Benzaldehyde	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	3.65E+02 N	N/A	N/A	NO	ND
	56-55-3	Benzo(a)anthracene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	9.21E-02 C	N/A	N/A	NO	ND
	50-32-8	Benzo(a)pyrene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	9.21E-03 C	0.2	MCL	NO	ND
	205-99-2	Benzo(b)fluoranthene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	9.21E-02 C	N/A	N/A	NO	ND
	191-24-2	Benzo(g,h,i)perylene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	1.83E+01 N [14]	N/A	N/A	NO	ND
	207-08-9	Benzo(k)fluoranthene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	9.21E-01 C	N/A	N/A	NO	ND
	111-91-1	Bis(2-chloroethoxy)methane	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	111-44-4	Bis(2-chloroethyl)ether	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	1.02E-02 C	N/A	N/A	NO	ND
	117-81-7	Bis(2-ethylhexyl) Phthalate (BEHP)	2 J	9 J	µg/L	SWMU318-GW34-01, SWMU318-GW34	3/19	10U - 19U	9	NA	4.80E+00 C	6	MCL	YES	ASL
	85-68-7	Butyl Benzyl Phthalate	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	7.30E+02 N	N/A	N/A	NO	ND
	105-60-2	Caprolactam	5 J	5 J	µg/L	318-MW03-05A	1/19	10U - 19U	5	NA	1.82E+03 N	N/A	N/A	NO	BSL
	86-74-8	Carbazole	8.5 J	49	µg/L	SWMU318-GW37	5/19	10U - 19U	49	NA	3.36E+00 C	N/A	N/A	YES	ASL
	218-01-9	Chrysene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	9.21E+00 C	N/A	N/A	NO	ND
	53-70-3	Dibenz(a,h)anthracene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	9.21E-03 C	N/A	N/A	NO	ND
	132-64-9	Dibenzofuran	9.5	73	µg/L	SWMU318-GW06-01	5/19	10U - 19U	73	NA	1.22E+00 N	N/A	N/A	YES	ASL
	84-66-2	Diethyl Phthalate (DEP)	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	2.92E+03 N	N/A	N/A	NO	ND
	131-11-3	Dimethyl Phthalate	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	3.65E+04 N	N/A	N/A	NO	ND
	84-74-2	Di-n-butyl Phthalate (DBP)	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	3.65E+02 N	N/A	N/A	NO	ND
	117-84-0	Di-n-octyl Phthalate	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	1.46E+02 N	N/A	N/A	NO	ND
	206-44-0	Fluoranthene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	1.46E+02 N	N/A	N/A	NO	ND
	86-73-7	Fluorene	7.5 J	50	µg/L	SWMU318-GW37	5/19	10U - 19U	50	NA	2.43E+01 N	N/A	N/A	YES	ASL
	118-74-1	Hexachlorobenzene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	4.20E-02 C	1	MCL	NO	ND
	87-68-3	Hexachlorobutadiene	ND	ND	µg/L	NA	0/48	2U - 50U	ND	NA	8.62E-01 C	N/A	N/A	NO	ND
	77-47-4	Hexachlorocyclopentadiene	ND	ND	µg/L	NA	0/19	10U - 19UJ	ND	NA	2.19E+01 N	50	MCL	NO	ND
	67-72-1	Hexachloroethane	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	4.80E+00 C	N/A	N/A	NO	ND
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	9.21E-02 C	N/A	N/A	NO	ND
	78-59-1	Isophorone	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	7.08E+01 C	N/A	N/A	NO	ND
	91-20-3	Naphthalene	0.68 J	1,970 D	µg/L	SWMU318-GW01-01	22/48	2U - 5U	1,970	NA	6.20E-01 N	N/A	N/A	YES	ASL
	98-95-3	Nitrobenzene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	3.40E-01 N	N/A	N/A	NO	ND
	621-64-7	n-Nitrosodi-n-propylamine	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	9.60E-03 C	N/A	N/A	NO	ND
	86-30-6	n-Nitrosodiphenylamine	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	1.37E+01 C	N/A	N/A	NO	ND
	87-86-5	Pentachlorophenol	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	5.60E-01 C	1	MCL	NO	ND
	85-01-8	Phenanthrene	0.6 J	18	µg/L	SWMU318-GW37	2/19	10U - 19U	18	NA	1.83E+01 N [14]	N/A	N/A	NO	BSL
	108-95-2	Phenol	0.5 J	38	µg/L	SWMU318-MW03	2/19	10U - 19U	38	NA	1.09E+03 N	N/A	N/A	NO	BSL
	129-00-0	Pyrene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	1.83E+01 N	N/A	N/A	NO	ND

TABLE 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Shallow Groundwater (cont)		**Total Metals (ug/L)**													
	7440-38-2	Arsenic	ND	ND	µg/L	NA	0/5	3.03U - 3.1U	ND	6	4.48E-02 C	10	MCL	NO	ND
	7440-39-3	Barium	7.1 J	25.1 J	µg/L	SWMU318-MW03	2/5	2.4U - 3.4U	25.1	86	2.55E+02 N	2000	MCL	NO	BSL
	7440-43-9	Cadmium	ND	ND	µg/L	NA	0/5	0.3U - 0.3U	ND	ND	1.82E+00 N	5	MCL	NO	ND
	7440-47-3	Chromium	ND	ND	µg/L	NA	0/5	0.8U - 10U	ND	3	1.09E+01 N (12)	100	MCL	NO	ND
	7439-92-1	Lead	ND	ND	µg/L	NA	0/5	1.7U - 1.7U	ND	3	1.50E+01 N (16)	15	MCL (16)	NO	ND
	7439-97-6	Mercury	ND	ND	µg/L	NA	0/5	0.01U - 0.07U	ND	ND	1.09E+00 N	2	MCL	NO	ND
	7782-49-2	Selenium	ND	ND	µg/L	NA	0/5	3.71U - 3.71U	ND	ND	1.82E+01 N	50	MCL	NO	ND
	7440-22-4	Silver	ND	ND	µg/L	NA	0/5	0.7U - 0.785U	ND	1	1.82E+01 N	100	sMCL	NO	ND

(1) J - Analyte present - Reported value is estimated
D - Result value is based on diluted analysis
DJ - Estimated result value is based on diluted analysis
U - Not detected
UJ - Reported quantitation limit is qualified as estimated

(2) Maximum concentration used for screening
(3) MCB Camp Lejeune Base Background Study, Final (Baker, 2001): 2 * Mean (1/2 nondetects)
(4) All non-carcinogenic criteria were divided by 10 to account for potential additive effects of chemicals
USEPA Region IX Tap Water COC Screening Value (derived from USEPA Region IX PRG Table - October, 2004)
(5) Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Deletion Reason: Below Screening Level (BSL)

(6) Screening level for 1,2,4-trichlorobenzene used as a surrogate.
(7) Screening value for 1,2-dichloroethene (cis) used as a surrogate.
(8) Screening value for 1,3-dichloropropene (total) used as a surrogate.
(9) Screening level for 2-chlorotoluene used as a surrogate.
(10) Screening level for isopropylbenzene used as a surrogate.
(11) Screening value for xylenes (total) used as a surrogate.
(12) Screening value for naphthalene used as a surrogate
(13) Screening value for acenaphthene used as a surrogate.
(14) Screening value for pyrene used as a surrogate.
(15) Screening value for chromium VI used.
(16) Action level for lead.

Definitions: N/A = Not Applic
NA = Not Analyz
ND = Not Detected
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered

C = Carcinogenic
N = Non-Carcinogenic

ug/L = microgram per liter

TABLE 2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Shallow Groundwater		**Volatile Organic Compounds (ug/L)**													
	630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	µg/L	NA	0/48	2U - 25U	ND	NA	N/A	N/A	N/A	NO	ND
	71-55-6	1,1,1-Trichloroethane (TCA)	0.7 J	0.7 J	µg/L	SWMU318-GW09	1/54	1U - 25U	0.7	NA	2.00E+02	200	MCL	NO	BSL
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	N/A	N/A	N/A	NO	ND
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	54	180	µg/L	SWMU318-GW10-01	4/12	10U - 10U	180	NA	2.10E+05	N/A	N/A	NO	BSL
	79-00-5	1,1,2-Trichloroethane	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	N/A	5	MCL	NO	ND
	75-34-3	1,1-Dichloroethane	0.33 J	14	µg/L	SWMU318-GW31-01	14/54	1U - 25U	14	NA	7.00E+02	N/A	N/A	NO	BSL
	75-35-4	1,1-Dichloroethene	0.3 J	15.4	µg/L	SWMU318-GW26-01	18/54	1U - 25U	15.4	NA	7.00E+00	7	MCL	YES	ASL
	563-58-6	1,1-Dichloropropene	ND	ND	µg/L	NA	0/48	1U - 25U	ND	NA	N/A	N/A	N/A	NO	ND
	87-61-6	1,2,3-Trichlorobenzene	0.46 J	2.4 J	µg/L	SWMU318-GW37	3/48	2U - 50U	2.4	NA	N/A	70	MCL [6]	NO	NSC
	96-18-4	1,2,3-Trichloropropane	ND	ND	µg/L	NA	0/10	2U - 20U	ND	NA	5.00E-03	N/A	N/A	NO	ND
	120-82-1	1,2,4-Trichlorobenzene	0.45 J	0.45 J	µg/L	SWMU318-GW51	1/53	2U - 50U	0.45	NA	N/A	70	MCL	NO	NSC
	95-63-6	1,2,4-Trimethylbenzene	0.32 J	35	µg/L	SWMU318-GW37-01	12/48	2U - 20U	35	NA	3.50E+02	N/A	N/A	NO	BSL
	96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	ND	ND	µg/L	NA	0/52	2U - 50U	ND	NA	2.50E-02	0.2	MCL	NO	ND
	106-93-4	1,2-Dibromoethane (EDB)	ND	ND	µg/L	NA	0/51	2U - 25U	ND	NA	4.00E-04	0.05	MCL	NO	ND
	95-50-1	1,2-Dichlorobenzene (o-)	0.4 J	4 J	µg/L	SWMU318-GW06-01	5/53	2U - 25U	4	NA	6.20E+02	600	MCL	NO	BSL
	107-06-2	1,2-Dichloroethane	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	3.80E-01	5	MCL	NO	ND
	156-59-2	1,2-Dichloroethene (cis)	0.6 J	800	µg/L	SWMU318-GW03-01, SWMU318-GW34-01	45/54	1U - 10U	800	NA	7.00E+01	70	MCL	YES	ASL
	540-59-0	1,2-Dichloroethene (total)	0.9 J	670 D	µg/L	SWMU318-GW10-01	12/15	10U - 10U	670	NA	7.00E+01 [7]	70	MCL [7]	YES	ASL
	156-60-5	1,2-Dichloroethene (trans)	0.6 J	18.2	µg/L	SWMU318-GW07A-01	16/54	1U - 25U	18.2	NA	7.00E+01	100	MCL	NO	BSL
	78-87-5	1,2-Dichloropropane	0.3 J	0.3 J	µg/L	SWMU318-GW02-01	1/54	1U - 25U	0.3	NA	5.60E-01	5	MCL	NO	BSL
	108-67-8	1,3,5-Trimethylbenzene	0.35 J	30	µg/L	SWMU318-GW06-01	7/48	2U - 25U	30	NA	3.50E+02	N/A	N/A	NO	BSL
	541-73-1	1,3-Dichlorobenzene (m-)	0.65 J	0.7 J	µg/L	SWMU318-GW03	2/53	2U - 25U	0.7	NA	6.20E+02	N/A	N/A	NO	BSL
	142-28-9	1,3-Dichloropropane	ND	ND	µg/L	NA	0/48	1U - 25U	ND	NA	N/A	N/A	N/A	NO	ND
	10061-01-5	1,3-Dichloropropene (cis)	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	1.90E-01 [8]	N/A	N/A	NO	ND
	10061-02-6	1,3-Dichloropropene (trans)	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	1.90E-01 [8]	N/A	N/A	NO	ND
	106-46-7	1,4-Dichlorobenzene (p-)	0.8 J	2	µg/L	SWMU318-GW02	4/53	2U - 25U	2	NA	7.50E+01	75	MCL	NO	BSL
	594-20-7	2,2-Dichloropropane	ND	ND	µg/L	NA	0/48	1U - 25U	ND	NA	N/A	N/A	N/A	NO	ND
	78-93-3	2-Butanone (MEK)	ND	ND	µg/L	NA	0/15	5U - 10U	ND	NA	1.70E+02	N/A	N/A	NO	ND
	95-49-8	2-Chlorotoluene	13 J	13 J	µg/L	SWMU318-GW06-01	1/48	2U - 25U	13	NA	1.40E+02	N/A	N/A	NO	BSL
	591-78-6	2-Hexanone (MBK)	ND	ND	µg/L	NA	0/15	5U - 10U	ND	NA	N/A	N/A	N/A	NO	ND
	106-43-4	4-Chlorotoluene	8 J	8 J	µg/L	SWMU318-GW07-01	1/48	2U - 25U	8	NA	1.40E+02 [9]	N/A	N/A	NO	BSL
	99-87-6	4-Isopropyltoluene	0.7 J	150	µg/L	SWMU318-GW06-01	7/48	2U - 25U	150	NA	7.00E+01 [10]	N/A	N/A	YES	ASL
	108-10-1	4-Methyl-2-pentanone (MIBK)	ND	ND	µg/L	NA	0/15	5U - 10U	ND	NA	N/A	N/A	N/A	NO	ND
	67-64-1	Acetone	2 J	2 J	µg/L	SWMU318-GW20-02A	1/15	5U - 10U	2	NA	7.00E+02	N/A	N/A	NO	BSL
	71-43-2	Benzene	0.2 J	98	µg/L	SWMU318-GW06-01	26/54	1U - 20U	98	NA	1.00E+00	5	MCL	YES	ASL
	108-86-1	Bromobenzene	ND	ND	µg/L	NA	0/48	2U - 25U	ND	NA	N/A	N/A	N/A	NO	ND
	74-97-5	Bromochloromethane	ND	ND	µg/L	NA	0/48	2U - 25U	ND	NA	N/A	N/A	N/A	NO	ND
	75-27-4	Bromodichloromethane	2 J	2 J	µg/L	SWMU318-GW09-01	1/54	1U - 25U	2	NA	5.60E-01	80	MCL	YES	ASL
	75-25-2	Bromoform	6 J	6 J	µg/L	SWMU318-GW06-01	1/54	1U - 25U	6	NA	1.90E-01	80	MCL	YES	ASL
	74-83-9	Bromomethane	ND	ND	µg/L	NA	0/54	2U - 50U	ND	NA	N/A	N/A	N/A	NO	ND
	135-98-8	Butylbenzene, sec-	0.58 J	9 J	µg/L	SWMU318-GW06-01	4/48	2U - 25U	9	NA	7.00E+01	N/A	N/A	NO	BSL
	98-06-6	Butylbenzene, tert-	13 J	16 J	µg/L	SWMU318-GW01-01	2/48	2U - 25U	16	NA	7.00E+01	N/A	N/A	NO	BSL
	75-15-0	Carbon Disulfide	0.4 J	0.7 J	µg/L	SWMU318-GW20-02A	2/15	1U - 10U	0.7	NA	7.00E+02	N/A	N/A	NO	BSL
	56-23-5	Carbon Tetrachloride	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	3.00E-01	5	MCL	NO	ND
	108-90-7	Chlorobenzene	1	1	µg/L	SWMU318-GW20-02A	1/54	1U - 25U	1	NA	5.00E+01	100	MCL	NO	BSL

TABLE 2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Shallow Groundwater (cont)		**Volatile Organic Compounds (ug/L) (Cont)**													
	75-00-3	Chloroethane	ND	ND	µg/L	NA	0/54	2U - 50U	ND	NA	2.80E+03	N/A	N/A	NO	ND
	67-66-3	Chloroform	0.44 J	0.44 J	µg/L	SWMU318-GW32-01	1/54	1U - 25U	0.44	NA	1.90E-01	80	MCL	YES	ASL
	74-87-3	Chloromethane	ND	ND	µg/L	NA	0/54	2U - 50U	ND	NA	2.60E+00	N/A	N/A	NO	ND
	110-82-7	Cyclohexane	ND	ND	µg/L	NA	0/12	10U - 10U	ND	NA	N/A	N/A	N/A	NO	ND
	124-48-1	Dibromochloromethane	ND	ND	µg/L	NA	0/54	1U - 25U	ND	NA	N/A	80	MCL	NO	ND
	74-95-3	Dibromomethane	ND	ND	µg/L	NA	0/30	2U - 25U	ND	NA	N/A	N/A	N/A	NO	ND
	75-71-8	Dichlorodifluoromethane (Freon-12)	0.6 J	2.3	µg/L	SWMU318-GW19	3/53	2U - 50U	2.3	NA	1.40E+03	N/A	N/A	NO	BSL
	100-41-4	Ethylbenzene	0.295 J	91	µg/L	SWMU318-GW06-01	22/54	1U - 10U	91	NA	2.90E+01	700	MCL	YES	ASL
	87-68-3	Hexachlorobutadiene	ND	ND	µg/L	NA	0/48	2U - 50U	ND	NA	N/A	N/A	N/A	NO	ND
	98-82-8	Isopropylbenzene (Cumene)	1 J	76	µg/L	SWMU318-GW06-01	11/53	2U - 25U	76	NA	7.00E+01	N/A	N/A	YES	ASL
	79-20-9	Methyl Acetate	ND	ND	µg/L	NA	0/12	10U - 10U	ND	NA	N/A	N/A	N/A	NO	ND
	108-87-2	Methyl Cyclohexane	1 J	8.5	µg/L	SWMU318-MW03	2/12	10U - 10U	8.5	NA	N/A	N/A	N/A	NO	NSC
	1634-04-4	Methyl Tert-Butyl Ether (MTBE)	ND	ND	µg/L	NA	0/12	10U - 10U	ND	NA	2.00E+02	N/A	N/A	NO	ND
	75-09-2	Methylene Chloride	ND	ND	µg/L	NA	0/54	2U - 50U	ND	NA	5.00E+00	5	MCL	NO	ND
	91-20-3	Naphthalene	0.68 J	1,970 D	µg/L	SWMU318-GW01-01	22/48	2U - 5U	1,970	NA	2.10E+01	N/A	N/A	YES	ASL
	104-51-8	n-Butylbenzene	0.31 J	49	µg/L	SWMU318-GW14	7/48	2U - 20U	49	NA	7.00E+01	N/A	N/A	NO	BSL
	103-65-1	n-Propylbenzene	0.85 J	4	µg/L	SWMU318-GW01	3/48	2U - 25U	4	NA	7.00E+01	N/A	N/A	NO	BSL
	100-42-5	Styrene (Ethenylbenzene)	11 J	11 J	µg/L	SWMU318-GW06-01	1/54	1U - 25U	11	NA	1.00E+02	100	MCL	NO	BSL
	127-18-4	Tetrachloroethene (PCE)	0.9 J	7 J	µg/L	SWMU318-GW01-01	2/54	1U - 25U	7	NA	7.00E-01	5	MCL	YES	ASL
	108-88-3	Toluene	0.3 J	190	µg/L	SWMU318-GW06-01	27/54	1U - 25U	190	NA	1.00E+03	1000	MCL	NO	BSL
	79-01-6	Trichloroethene (TCE)	0.3 J	7,120 D	µg/L	SWMU318-GW07-01	40/54	1U - 10U	7,120	NA	2.80E+00	5	MCL	YES	ASL
	75-69-4	Trichlorofluoromethane	ND	ND	µg/L	NA	0/19	5U - 50U	ND	NA	2.10E+03	N/A	N/A	NO	ND
	75-01-4	Vinyl Chloride	0.57 J	140	µg/L	SWMU318-GW10-01, SWMU318-GW23-01	19/54	2U - 25U	140	NA	1.50E-02	2	MCL	YES	ASL
	000000-01-4	Xylene, m/p-	0.5 J	160	µg/L	SWMU318-GW06-01	20/53	2U - 10U	160	NA	5.30E+02 [11]	10000	MCL [11]	NO	BSL
	95-47-6	Xylene, o-	0.3 J	84	µg/L	SWMU318-GW06-01	16/54	1U - 25U	84	NA	5.30E+02 [11]	10000	MCL [11]	NO	BSL
	1330-20-7	Xylenes, total	0.9 J	47	µg/L	SWMU318-GW37	8/15	3U - 10U	47	NA	5.30E+02	10000	MCL	NO	BSL
		Semivolatile Organic Compounds (ug/L)													
	92-52-4	1,1'-Biphenyl	6 J	36	µg/L	SWMU318-GW06-01	5/19	10U - 19U	36	NA	3.50E+02	N/A	N/A	NO	BSL
	108-60-1	2,2'-Oxybis[1-chloropropane]	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	95-95-4	2,4,5-Trichlorophenol	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	N/A	N/A	N/A	NO	ND
	88-06-2	2,4,6-Trichlorophenol	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	120-83-2	2,4-Dichlorophenol	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	105-67-9	2,4-Dimethylphenol	12 J	990 D	µg/L	SWMU318-GW06-01	6/19	10U - 10U	990	NA	1.40E+02	N/A	N/A	YES	ASL
	51-28-5	2,4-Dinitrophenol	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	N/A	N/A	N/A	NO	ND
	121-14-2	2,4-Dinitrotoluene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	606-20-2	2,6-Dinitrotoluene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	91-58-7	2-Chloronaphthalene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	95-57-8	2-Chlorophenol	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	1.00E-01	N/A	N/A	NO	ND
	91-57-6	2-Methylnaphthalene	35.5	480 D	µg/L	SWMU318-GW06-01	5/19	10U - 19U	480	NA	1.40E+01	N/A	N/A	YES	ASL
	95-48-7	2-Methylphenol (o-Cresol)	410 D	410 D	µg/L	SWMU318-GW06-01	1/19	10U - 19U	410	NA	3.50E+00 [12]	N/A	N/A	YES	ASL
	88-74-4	2-Nitroaniline	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	N/A	N/A	N/A	NO	ND
	88-75-5	2-Nitrophenol	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	91-94-1	3,3'-Dichlorobenzidine	ND	ND	µg/L	NA	0/19	10U - 19UJ	ND	NA	N/A	N/A	N/A	NO	ND
	99-09-2	3-Nitroaniline	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	N/A	N/A	N/A	NO	ND
	534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	N/A	N/A	N/A	NO	ND

TABLE 2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Shallow Groundwater (cont)		**Semivolatile Organic Compounds (ug/L) (Cont)**													
	101-55-3	4-Bromophenyl-phenylether	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	59-50-7	4-Chloro-3-methylphenol	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	106-47-8	4-Chloroaniline	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	7005-72-3	4-Chlorophenyl-phenylether	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	106-44-5	4-Methylphenol (p-Cresol)	250 DJ	250 DJ	µg/L	SWMU318-GW06-01	1/19	10U - 19U	250	NA	3.50E+00	N/A	N/A	YES	ASL
	100-01-6	4-Nitroaniline	ND	ND	µg/L	NA	0/19	25U - 47UJ	ND	NA	N/A	N/A	N/A	NO	ND
	100-02-7	4-Nitrophenol	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	N/A	N/A	N/A	NO	ND
	83-32-9	Acenaphthene	29.5	280 DJ	µg/L	SWMU318-GW06-01	5/19	10U - 19U	280	NA	8.00E+01	N/A	N/A	YES	ASL
	208-96-8	Acenaphthylene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	2.10E+02	N/A	N/A	NO	ND
	98-86-2	Acetophenone	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	120-12-7	Anthracene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	2.10E+03	N/A	N/A	NO	ND
	1912-24-9	Atrazine	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	3.00E+00	3	MCL	NO	ND
	100-52-7	Benzaldehyde	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	56-55-3	Benzo(a)anthracene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	4.79E-02	N/A	N/A	NO	ND
	50-32-8	Benzo(a)pyrene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	4.79E-03	0.2	MCL	NO	ND
	205-99-2	Benzo(b)fluoranthene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	4.79E-02	N/A	N/A	NO	ND
	191-24-2	Benzo(g,h,i)perylene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	2.10E+02	N/A	N/A	NO	ND
	207-08-9	Benzo(k)fluoranthene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	4.79E-01	N/A	N/A	NO	ND
	111-91-1	Bis(2-chloroethoxy)methane	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	111-44-4	Bis(2-chloroethyl)ether	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	117-81-7	Bis(2-ethylhexyl) Phthalate (BEHP)	2 J	9 J	µg/L	SWMU318-GW34-01, SWMU318-GW34	3/19	10U - 19U	9	NA	3.00E+00	6	MCL	YES	ASL
	85-68-7	Butyl Benzyl Phthalate	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	1.00E+02	N/A	N/A	NO	ND
	105-60-2	Caprolactam	5 J	5 J	µg/L	318-MW03-05A	1/19	10U - 19U	5	NA	3.50E+03	N/A	N/A	NO	BSL
	86-74-8	Carbazole	8.5 J	49	µg/L	SWMU318-GW37	5/19	10U - 19U	49	NA	N/A	N/A	N/A	NO	NSC
	218-01-9	Chrysene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	4.79E+00	N/A	N/A	NO	ND
	53-70-3	Dibenz(a,h)anthracene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	4.70E-03	N/A	N/A	NO	ND
	132-64-9	Dibenzofuran	9.5	73	µg/L	SWMU318-GW06-01	5/19	10U - 19U	73	NA	N/A	N/A	N/A	NO	NSC
	84-66-2	Diethyl Phthalate (DEP)	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	5.00E+03	N/A	N/A	NO	ND
	131-11-3	Dimethyl Phthalate	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	84-74-2	Di-n-butyl Phthalate (DBP)	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	7.00E+02	N/A	N/A	NO	ND
	117-84-0	Di-n-octyl Phthalate	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	1.40E+02	N/A	N/A	NO	ND
	206-44-0	Fluoranthene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	2.80E+02	N/A	N/A	NO	ND
	86-73-7	Fluorene	7.5 J	50	µg/L	SWMU318-GW37	5/19	10U - 19U	50	NA	2.80E+02	N/A	N/A	NO	BSL
	118-74-1	Hexachlorobenzene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	2.00E-02	1	MCL	NO	ND
	87-68-3	Hexachlorobutadiene	ND	ND	µg/L	NA	0/48	2U - 50U	ND	NA	N/A	N/A	N/A	NO	ND
	77-47-4	Hexachlorocyclopentadiene	ND	ND	µg/L	NA	0/19	10U - 19UJ	ND	NA	N/A	50	MCL	NO	ND
	67-72-1	Hexachloroethane	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	4.79E-02	N/A	N/A	NO	ND
	78-59-1	Isophorone	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	3.68E+01	N/A	N/A	NO	ND
	91-20-3	Naphthalene	0.68 J	1,970 D	µg/L	SWMU318-GW01-01	22/48	2U - 5U	1,970	NA	2.10E+01	N/A	N/A	YES	ASL
	98-95-3	Nitrobenzene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	621-64-7	n-Nitrosodi-n-propylamine	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	86-30-6	n-Nitrosodiphenylamine	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	N/A	N/A	N/A	NO	ND
	87-86-5	Pentachlorophenol	ND	ND	µg/L	NA	0/19	25U - 47U	ND	NA	3.00E-01	1	MCL	NO	ND
	85-01-8	Phenanthrene	0.6 J	18	µg/L	SWMU318-GW37	2/19	10U - 19U	18	NA	2.10E+02	N/A	N/A	NO	BSL
	108-95-2	Phenol	0.5 J	38	µg/L	SWMU318-MW03	2/19	10U - 19U	38	NA	3.00E+02	N/A	N/A	NO	BSL
	129-00-0	Pyrene	ND	ND	µg/L	NA	0/19	10U - 19U	ND	NA	2.10E+02	N/A	N/A	NO	ND

TABLE 2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Shallow Groundwater (cont)		**Total Metals (ug/L)**													
	7440-38-2	Arsenic	ND	ND	µg/L	NA	0/5	3.03U - 3.1U	ND	6	1.00E+01	10	MCL	NO	ND
	7440-39-3	Barium	7.1 J	25.1 J	µg/L	SWMU318-MW03	2/5	2.4U - 3.4U	25.1	86	2.00E+03	2000	MCL	NO	BSL
	7440-43-9	Cadmium	ND	ND	µg/L	NA	0/5	0.3U - 0.3U	ND	ND	5.00E+00	5	MCL	NO	ND
	7440-47-3	Chromium	ND	ND	µg/L	NA	0/5	0.8U - 10U	ND	3	5.00E+01	100	MCL	NO	ND
	7439-92-1	Lead	ND	ND	µg/L	NA	0/5	1.7U - 1.7U	ND	3	1.50E+01	15	MCL (13)	NO	ND
	7439-97-6	Mercury	ND	ND	µg/L	NA	0/5	0.01U - 0.07U	ND	ND	1.10E+00	2	MCL	NO	ND
	7782-49-2	Selenium	ND	ND	µg/L	NA	0/5	3.71U - 3.71U	ND	ND	5.00E+01	50	MCL	NO	ND
	7440-22-4	Silver	ND	ND	µg/L	NA	0/5	0.7U - 0.785U	ND	1	1.80E+01	100	sMCL	NO	ND

(1) J - Analyte present - Reported value is estimated
D - Result value is based on diluted analysis
DJ - Estimated result value is based on diluted analysis
U - Not detected
UJ - Reported quantitation limit is qualified as estimated

(2) Maximum concentration used for screening
(3) MCB Camp Lejeune Base Background Study, Final (Baker, 2001): 2 * Mean (1/2 nondetects)
(4) North Carolina Department of Environment and Natural Resources (NC DENR)
Target Groundwater Concentration
(5) Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Deletion Reason: No Screening Criteria (NSC)
Below Screening Level (BSL)

(6) Screening level for 1,2,4-trichlorobenzene used as a surrogate.
(7) Screening value for 1,2-dichloroethene (cis) used as a surrogate.
(8) Screening value for 1,3-dichloropropene (total) used as a surrogate.
(9) Screening level for 2-chlorotoluene used as a surrogate.
(10) Screening level for isopropylbenzene used as a surrogate.
(11) Screening value for xylenes (total) used as a surrogate.
(12) Screening value for p-Cresol used as a surrogate.
(13) Action level for lead.

Definitions: N/A = Not Applic
NA = Not Analyz
ND = Not Detected
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered

ug/L = microgram per liter

TABLE 2.7
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Deep Groundwater
Exposure Medium: Deep Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Deep Groundwater		**Volatile Organic Compounds (ug/L)**													
	630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	4.32E-01 C	N/A	N/A	NO	ND
	71-55-6	1,1,1-Trichloroethane (TCA)	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	3.17E+02 N	N/A	N/A	NO	ND
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	5.53E-02 C	N/A	N/A	NO	ND
	79-00-5	1,1,2-Trichloroethane	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	2.00E-01 C	N/A	N/A	NO	ND
	75-34-3	1,1-Dichloroethane	1.4	1.4	µg/L	SWMU318-GW31-02	1/10	1U - 2U	1.4	NA	8.11E+01 N	N/A	N/A	NO	BSL
	75-35-4	1,1-Dichloroethene	0.48 J	4.5	µg/L	SWMU318-GW43-02	7/10	2U - 2U	4.5	NA	3.39E+01 N	N/A	N/A	NO	BSL
	563-58-6	1,1-Dichloropropene	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	87-61-6	1,2,3-Trichlorobenzene	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	7.16E-01 N [6]	N/A	N/A	NO	ND
	96-18-4	1,2,3-Trichloropropane	ND	ND	µg/L	NA	0/5	2U - 2U	ND	NA	5.60E-03 C	N/A	N/A	NO	ND
	120-82-1	1,2,4-Trichlorobenzene	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	7.16E-01 N	N/A	N/A	NO	ND
	95-63-6	1,2,4-Trimethylbenzene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	1.23E+00 N	N/A	N/A	NO	ND
	96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	4.76E-02 C	N/A	N/A	NO	ND
	106-93-4	1,2-Dibromoethane (EDB)	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	5.60E-03 C	N/A	N/A	NO	ND
	95-50-1	1,2-Dichlorobenzene (o-)	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	3.70E+01 N	N/A	N/A	NO	ND
	107-06-2	1,2-Dichloroethane	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	1.23E-01 C	N/A	N/A	NO	ND
	156-59-2	1,2-Dichloroethene (cis)	5	171	µg/L	SWMU318-GW19-02	9/10	2U - 2U	171	NA	6.08E+00 N	N/A	N/A	YES	ASL
	156-60-5	1,2-Dichloroethene (trans)	0.4 J	16.4	µg/L	SWMU318-GW17-02	5/10	1U - 2U	16.4	NA	1.22E+01 N	N/A	N/A	YES	ASL
	78-87-5	1,2-Dichloropropane	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	1.65E-01 C	N/A	N/A	NO	ND
	108-67-8	1,3,5-Trimethylbenzene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	1.23E+00 N	N/A	N/A	NO	ND
	541-73-1	1,3-Dichlorobenzene (m-)	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	1.83E+01 N	N/A	N/A	NO	ND
	142-28-9	1,3-Dichloropropane	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	1.22E+01 N	N/A	N/A	NO	ND
	10061-01-5	1,3-Dichloropropene (cis)	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	3.95E-01 C [7]	N/A	N/A	NO	ND
	10061-02-6	1,3-Dichloropropene (trans)	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	3.95E-01 C [7]	N/A	N/A	NO	ND
	106-46-7	1,4-Dichlorobenzene (p-)	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	5.02E-01 C	N/A	N/A	NO	ND
	594-20-7	2,2-Dichloropropane	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	95-49-8	2-Chlorotoluene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	1.22E+01 N	N/A	N/A	NO	ND
	106-43-4	4-Chlorotoluene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	1.22E+01 N [8]	N/A	N/A	NO	ND
	99-87-6	4-Isopropyltoluene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	6.58E+01 N [9]	N/A	N/A	NO	ND
	71-43-2	Benzene	0.8 J	2.9	µg/L	SWMU318-GW31-02	6/10	2U - 2U	2.9	NA	3.54E-01 C	N/A	N/A	YES	ASL
	108-86-1	Bromobenzene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	2.03E+00 N	N/A	N/A	NO	ND
	74-97-5	Bromochloromethane	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	75-27-4	Bromodichloromethane	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	1.81E-01 C	N/A	N/A	NO	ND
	75-25-2	Bromoform	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	8.51E+00 C	N/A	N/A	NO	ND
	74-83-9	Bromomethane	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	8.66E-01 N	N/A	N/A	NO	ND
	135-98-8	Butylbenzene, sec-	0.9 J	0.9 J	µg/L	SWMU318-GW07-02	1/10	2U - 2U	0.9	NA	2.43E+01 N	N/A	N/A	NO	BSL
	98-06-6	Butylbenzene, tert-	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	2.43E+01 N	N/A	N/A	NO	ND
	56-23-5	Carbon Tetrachloride	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	1.71E-01 C	N/A	N/A	NO	ND
	108-90-7	Chlorobenzene	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	1.06E+01 N	N/A	N/A	NO	ND
	75-00-3	Chloroethane	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	4.64E+00 C	N/A	N/A	NO	ND
	67-66-3	Chloroform	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	1.66E-01 C	N/A	N/A	NO	ND
	74-87-3	Chloromethane	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	1.58E+01 N	N/A	N/A	NO	ND
	124-48-1	Dibromochloromethane	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	1.33E-01 C	N/A	N/A	NO	ND
	74-95-3	Dibromomethane	ND	ND	µg/L	NA	0/6	2U - 2U	ND	NA	6.08E+00 N	N/A	N/A	NO	ND
	75-71-8	Dichlorodifluoromethane (Freon-12)	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	3.95E+01 N	N/A	N/A	NO	ND

TABLE 2.7
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Deep Groundwater
Exposure Medium: Deep Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Deep Groundwater (Cont)		**Volatile Organic Compounds (ug/L) (Cont)**													
	100-41-4	Ethylbenzene	0.9 J	0.9 J	µg/L	SWMU318-GW07-02	1/10	1U - 2U	0.9	NA	1.34E+02 N	N/A	N/A	NO	BSL
	87-68-3	Hexachlorobutadiene	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	8.62E-01 C	N/A	N/A	NO	ND
	98-82-8	Isopropylbenzene (Cumene)	1 J	1 J	µg/L	SWMU318-GW07-02	1/10	2U - 2U	1	NA	6.58E+01 N	N/A	N/A	NO	BSL
	75-09-2	Methylene Chloride	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	4.28E+00 C	N/A	N/A	NO	ND
	91-20-3	Naphthalene	1 J	1 J	µg/L	SWMU318-GW31-02	1/10	2U - 5U	1	NA	6.20E-01 N	N/A	N/A	YES	ASL
	104-51-8	n-Butylbenzene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	2.43E+01 N	N/A	N/A	NO	ND
	103-65-1	n-Propylbenzene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	2.43E+01 N	N/A	N/A	NO	ND
	100-42-5	Styrene (Ethenylbenzene)	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	1.64E+02 N	N/A	N/A	NO	ND
	127-18-4	Tetrachloroethene (PCE)	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	1.04E-01 C	N/A	N/A	NO	ND
	108-88-3	Toluene	0.9 J	2.6	µg/L	SWMU318-GW34-02	4/10	1U - 2U	2.6	NA	7.23E+01 N	N/A	N/A	NO	BSL
	79-01-6	Trichloroethene (TCE)	0.36 J	400	µg/L	SWMU318-GW34-02	7/10	1U - 2U	400	NA	2.80E-02 C	N/A	N/A	YES	ASL
	75-69-4	Trichlorofluoromethane	ND	ND	µg/L	NA	0/5	5U - 5U	ND	NA	1.29E+02 N	N/A	N/A	NO	ND
	75-01-4	Vinyl Chloride	1 J	172	µg/L	SWMU318-GW17-02, SWMU318-GW44-02	8/10	2U - 2U	172	NA	1.98E-02 C	N/A	N/A	YES	ASL
	000000-01-4	Xylene, m/p-	2 J	2 J	µg/L	SWMU318-GW07-02	1/10	2U - 4U	2	NA	2.06E+01 N (10)	N/A	N/A	NO	BSL
	95-47-6	Xylene, o-	1 J	1 J	µg/L	SWMU318-GW07-02	1/10	1U - 2U	1	NA	2.06E+01 N (10)	N/A	N/A	NO	BSL

(1) J - Analyte present - Reported value is estimated
U - Not detected

(2) Maximum concentration used for screening
(3) MCB Camp Lejeune Base Background Study, Final (Baker, 2001): 2 * Mean (1/2 nondetects)
(4) All non-carcinogenic criteria were divided by 10 to account for potential additive effects of chemicals
USEPA Region IX Tap Water COC Screening Value (derived from USEPA Region IX PRG Table - October, 2004)
(5) Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Deletion Reason: Below Screening Level (BSL)

Definitions: N/A = Not Applic
NA = Not Analyz
ND = Not Detected
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered

C = Carcinogenic
N = Non-Carcinogenic

ug/L = microgram per liter

(6) Screening level for 1,2,4-trichlorobenzene used as a surrogate.
(7) Screening value for 1,3-dichloropropene (total) used as a surrogate.
(8) Screening level for 2-chlorotoluene used as a surrogate.
(9) Screening level for isopropylbenzene used as a surrogate.
(10) Screening value for xylenes (total) used as a surrogate.

TABLE 2.8
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Deep Groundwater
Exposure Medium: Deep Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Groundwater		**Volatile Organic Compounds (ug/L)**													
	630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	71-55-6	1,1,1-Trichloroethane (TCA)	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	2.00E+02	N/A	N/A	NO	ND
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	79-00-5	1,1,2-Trichloroethane	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	75-34-3	1,1-Dichloroethane	1.4	1.4	µg/L	SWMU318-GW31-02	1/10	1U - 2U	1.4	NA	7.00E+02	N/A	N/A	NO	BSL
	75-35-4	1,1-Dichloroethene	0.48 J	4.5	µg/L	SWMU318-GW43-02	7/10	2U - 2U	4.5	NA	7.00E+00	N/A	N/A	NO	BSL
	563-58-6	1,1-Dichloropropene	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	87-61-6	1,2,3-Trichlorobenzene	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	N/A	N/A	N/A	NO	ND
	96-18-4	1,2,3-Trichloropropane	ND	ND	µg/L	NA	0/5	2U - 2U	ND	NA	5.00E-03	N/A	N/A	NO	ND
	120-82-1	1,2,4-Trichlorobenzene	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	N/A	N/A	N/A	NO	ND
	95-63-6	1,2,4-Trimethylbenzene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	3.50E+02	N/A	N/A	NO	ND
	96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	2.50E-02	N/A	N/A	NO	ND
	106-93-4	1,2-Dibromoethane (EDB)	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	4.00E-04	N/A	N/A	NO	ND
	95-50-1	1,2-Dichlorobenzene (o-)	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	6.20E+02	N/A	N/A	NO	ND
	107-06-2	1,2-Dichloroethane	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	3.80E-01	N/A	N/A	NO	ND
	156-59-2	1,2-Dichloroethene (cis)	5	171	µg/L	SWMU318-GW19-02	9/10	2U - 2U	171	NA	7.00E+01	N/A	N/A	YES	ASL
	156-60-5	1,2-Dichloroethene (trans)	0.4 J	16.4	µg/L	SWMU318-GW17-02	5/10	1U - 2U	16.4	NA	7.00E+01	N/A	N/A	NO	BSL
	78-87-5	1,2-Dichloropropane	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	5.60E-01	N/A	N/A	NO	ND
	108-67-8	1,3,5-Trimethylbenzene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	3.50E+02	N/A	N/A	NO	ND
	541-73-1	1,3-Dichlorobenzene (m-)	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	6.20E+02	N/A	N/A	NO	ND
	142-28-9	1,3-Dichloropropane	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	10061-01-5	1,3-Dichloropropene (cis)	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	1.90E-01 (6)	N/A	N/A	NO	ND
	10061-02-6	1,3-Dichloropropene (trans)	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	1.90E-01 (6)	N/A	N/A	NO	ND
	106-46-7	1,4-Dichlorobenzene (p-)	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	7.50E+01	N/A	N/A	NO	ND
	594-20-7	2,2-Dichloropropane	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	95-49-8	2-Chlorotoluene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	1.40E+02	N/A	N/A	NO	ND
	106-43-4	4-Chlorotoluene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	1.40E+02 (7)	N/A	N/A	NO	ND
	99-87-6	4-Isopropyltoluene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	7.00E+01 (8)	N/A	N/A	NO	ND
	71-43-2	Benzene	0.8 J	2.9	µg/L	SWMU318-GW31-02	6/10	2U - 2U	2.9	NA	1.00E+00	N/A	N/A	YES	ASL
	108-86-1	Bromobenzene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	74-97-5	Bromochloromethane	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	75-27-4	Bromodichloromethane	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	5.60E-01	N/A	N/A	NO	ND
	75-25-2	Bromoform	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	1.90E-01	N/A	N/A	NO	ND
	74-83-9	Bromomethane	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	N/A	N/A	N/A	NO	ND
	135-98-8	Butylbenzene, sec-	0.9 J	0.9 J	µg/L	SWMU318-GW07-02	1/10	2U - 2U	0.9	NA	7.00E+01	N/A	N/A	NO	BSL
	98-06-6	Butylbenzene, tert-	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	7.00E+01	N/A	N/A	NO	ND
	56-23-5	Carbon Tetrachloride	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	3.00E-01	N/A	N/A	NO	ND
	108-90-7	Chlorobenzene	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	5.00E+01	N/A	N/A	NO	ND
	75-00-3	Chloroethane	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	2.80E+03	N/A	N/A	NO	ND
	67-66-3	Chloroform	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	1.90E-01	N/A	N/A	NO	ND
	74-87-3	Chloromethane	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	2.60E+00	N/A	N/A	NO	ND
	124-48-1	Dibromochloromethane	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	74-95-3	Dibromomethane	ND	ND	µg/L	NA	0/6	2U - 2U	ND	NA	N/A	N/A	N/A	NO	ND
	75-71-8	Dichlorodifluoromethane (Freon-12)	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	1.40E+03	N/A	N/A	NO	ND

TABLE 2.8
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Deep Groundwater
Exposure Medium: Deep Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Deep Groundwater (Cont)		**Volatile Organic Compounds (ug/L) (Cont)**													
	100-41-4	Ethylbenzene	0.9 J	0.9 J	µg/L	SWMU318-GW07-02	1/10	1U - 2U	0.9	NA	2.90E+01	N/A	N/A	NO	BSL
	87-68-3	Hexachlorobutadiene	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	N/A	N/A	N/A	NO	ND
	98-82-8	Isopropylbenzene (Cumene)	1 J	1 J	µg/L	SWMU318-GW07-02	1/10	2U - 2U	1	NA	7.00E+01	N/A	N/A	NO	BSL
	75-09-2	Methylene Chloride	ND	ND	µg/L	NA	0/10	2U - 5U	ND	NA	5.00E+00	N/A	N/A	NO	ND
	91-20-3	Naphthalene	1 J	1 J	µg/L	SWMU318-GW31-02	1/10	2U - 5U	1	NA	2.10E+01	N/A	N/A	NO	BSL
	104-51-8	n-Butylbenzene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	7.00E+01	N/A	N/A	NO	ND
	103-65-1	n-Propylbenzene	ND	ND	µg/L	NA	0/10	2U - 2U	ND	NA	7.00E+01	N/A	N/A	NO	ND
	100-42-5	Styrene (Ethenylbenzene)	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	1.00E+02	N/A	N/A	NO	ND
	127-18-4	Tetrachloroethene (PCE)	ND	ND	µg/L	NA	0/10	1U - 2U	ND	NA	7.00E-01	N/A	N/A	NO	ND
	108-88-3	Toluene	0.9 J	2.6	µg/L	SWMU318-GW34-02	4/10	1U - 2U	2.6	NA	1.00E+03	N/A	N/A	NO	BSL
	79-01-6	Trichloroethene (TCE)	0.36 J	400	µg/L	SWMU318-GW34-02	7/10	1U - 2U	400	NA	2.80E+00	N/A	N/A	YES	ASL
	75-69-4	Trichlorofluoromethane	ND	ND	µg/L	NA	0/5	5U - 5U	ND	NA	2.10E+03	N/A	N/A	NO	ND
	75-01-4	Vinyl Chloride	1 J	172	µg/L	SWMU318-GW17-02, SWMU318-GW44-02	8/10	2U - 2U	172	NA	1.50E-02	N/A	N/A	YES	ASL
	000000-01-4	Xylene, m/p-	2 J	2 J	µg/L	SWMU318-GW07-02	1/10	2U - 4U	2	NA	5.30E+02 (9)	N/A	N/A	NO	BSL
	95-47-6	Xylene, o-	1 J	1 J	µg/L	SWMU318-GW07-02	1/10	1U - 2U	1	NA	5.30E+02 (9)	N/A	N/A	NO	BSL

(1) J - Analyte present - Reported value is estimated
U - Not detected

(2) Maximum concentration used for screening
(3) MCB Camp Lejeune Base Background Study, Final (Baker, 2001): 2 * Mean (1/2 nondetects)
(4) North Carolina Department of Environment and Natural Resources (NC DENR)
Target Groundwater Concentration
(5) Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Deletion Reason: Below Screening Level (BSL)

(6) Screening value for 1,3-dichloropropene (total) used as a surrogate.
(7) Screening level for 2-chlorotoluene used as a surrogate.
(8) Screening level for isopropylbenzene used as a surrogate.
(9) Screening value for xylenes (total) used as a surrogate.

Definitions: N/A = Not Applic
NA = Not Analyz
ND = Not Detected
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered

ug/L = microgram per liter

TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (2)	Rationale (ProUCL)
Surface Soil									
	1,4-Dichlorobenzene (p-)	µg/kg	146	1,571 (NP)	4,300	1.57	mg/kg	95% UCL (NP)	99% Chebyshev (Mean, Sd) UCL
	2-Hexanone (MBK)	µg/kg	117	1,138 (NP)	3 J	1.14	mg/kg	95% UCL (NP)	99% Chebyshev (Mean, Sd) UCL
	Acetophenone	µg/kg	196	212 (NP)	120 J	0.212	mg/kg	95% UCL (NP)	95% Student's-t UCL
	Benzo(a)anthracene	µg/kg	367	1,061 (NP)	4,100 J	1.06	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Benzo(a)pyrene	µg/kg	386	1,229 (NP)	5,000 J	1.23	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Benzo(b)fluoranthene	µg/kg	435	1,442 (NP)	5,900 J	1.44	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Benzo(k)fluoranthene	µg/kg	459	1,630 (NP)	6,900 J	1.63	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Carbazole	µg/kg	545	2,081 (NP)	44 J	2.08	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Chrysene	µg/kg	470	1,608 (NP)	6,700 J	1.61	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Dibenz(a,h)anthracene	µg/kg	266	639 (NP)	2,300 J	0.639	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Indeno(1,2,3-cd)pyrene	µg/kg	360	1,150 (NP)	4,700 J	1.15	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Arsenic	mg/kg	2.09	3.09 (G)	14.3	3.09	mg/kg	95% UCL (G)	95% Approximate Gamma UCL
	Cadmium	mg/kg	3.16	4.98 (L)	57.2	4.98	mg/kg	95% UCL (L)	95% Chebyshev (MVUE) UCL

EPC = Exposure Point Concentration
UCL = Upper Confidence Level
For non-detects, 1/2 sample quantitation limit was used as a proxy concentration.

(1) Distribution and 95% UCL were calculated by ProUCL and are indicated as follows:
(NP) - Non-parametric distribution and 95% UCL
(L) - Lognormal distribution and 95% UCL
(G) - Gamma distribution and 95% UCL

(2) Exposure point concentration statistic will be the 95% UCL (as calculated by ProUCL).

TABLE 3.2.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (2)	Rationale (ProUCL)
Surface Soil									
	1,4-Dichlorobenzene (p-)	µg/kg	127	1,251 (NP)	4,300	1.25	mg/kg	95% UCL (NP)	99% Chebyshev (Mean, Sd) UCL
	2-Hexanone (MBK)	µg/kg	126	1,081 (NP)	3 J	1.08	mg/kg	95% UCL (NP)	99% Chebyshev (Mean, Sd) UCL
	Naphthalene	µg/kg	3,113	33,363 (NP)	57,800	33.4	mg/kg	95% UCL (NP)	95% Hall's Bootstrap UCL
	Acetophenone	µg/kg	401	1,295 (NP)	120 J	1.30	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Benzo(a)anthracene	µg/kg	497	1,361 (NP)	4,100 J	1.36	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Benzo(a)pyrene	µg/kg	515	1,470 (NP)	5,000 J	1.47	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Benzo(b)fluoranthene	µg/kg	559	2,983 (NP)	5,900 J	2.98	mg/kg	95% UCL (NP)	99% Chebyshev (Mean, Sd) UCL
	Benzo(k)fluoranthene	µg/kg	575	1,754 (NP)	6,900 J	1.75	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Carbazole	µg/kg	640	3,960 (NP)	44 J	3.96	mg/kg	95% UCL (NP)	99% Chebyshev (Mean, Sd) UCL
	Chrysene	µg/kg	588	1,741 (NP)	6,700 J	1.74	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Dibenz(a,h)anthracene	µg/kg	400	1,115 (NP)	2,300 J	1.12	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Indeno(1,2,3-cd)pyrene	µg/kg	487	1,410 (NP)	4,700 J	1.41	mg/kg	95% UCL (NP)	95% Chebyshev (Mean, Sd) UCL
	Naphthalene	µg/kg	1,974	14,118 (NP)	32,000	14.1	mg/kg	95% UCL (NP)	99% Chebyshev (Mean, Sd) UCL
	Arsenic	mg/kg	1.90	2.69 (G)	14.3	2.69	mg/kg	95% UCL (G)	95% Approximate Gamma UCL
	Cadmium	mg/kg	2.95	5.49 (L)	57.2	5.49	mg/kg	95% UCL (L)	95% Chebyshev (MVUE) UCL

EPC = Exposure Point Concentration
UCL = Upper Confidence Level
For non-detects, 1/2 sample quantitation limit was used as a proxy concentration.

(1) Distribution and 95% UCL were calculated by ProUCL and are indicated as follows:
(NP) - Non-parametric distribution and 95% UCL
(L) - Lognormal distribution and 95% UCL
(G) - Gamma distribution and 95% UCL

(2) Exposure point concentration statistic will be the 95% UCL (as calculated by ProUCL).

TABLE 3.3.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (2)	Rationale (ProUCL)
Subsurface Soil									
	2-Hexanone (MBK)	µg/kg	50.0	323 (NP)	300	0.323	mg/kg	95% UCL (NP)	99% Chebyshev (Mean, Sd) UCL
	Benzo(a)anthracene	µg/kg	217	249 (NP)	1,200	0.249	mg/kg	95% UCL (NP)	95% Student's-t UCL
	Benzo(a)pyrene	µg/kg	213	234 (NP)	820	0.234	mg/kg	95% UCL (NP)	95% Student's-t UCL
	Benzo(b)fluoranthene	µg/kg	228	268 (NP)	1,500	0.268	mg/kg	95% UCL (NP)	95% Student's-t UCL
	Benzo(k)fluoranthene	µg/kg	220	252 (NP)	1,200	0.252	mg/kg	95% UCL (NP)	95% Student's-t UCL
	Carbazole	µg/kg	207	213 (NP)	65 J	0.213	mg/kg	95% UCL (NP)	95% Student's-t UCL
	Chrysene	µg/kg	232	284 (NP)	1,900	0.284	mg/kg	95% UCL (NP)	95% Student's-t UCL
	Dibenz(a,h)anthracene	µg/kg	207	213 (NP)	180 J	0.213	mg/kg	95% UCL (NP)	95% Student's-t UCL
	Indeno(1,2,3-cd)pyrene	µg/kg	208	220 (NP)	440	0.220	mg/kg	95% UCL (NP)	95% Student's-t UCL
	Arsenic	mg/kg	4.90	6.34 (L)	51	6.34	mg/kg	95% UCL (L)	95% H-UCL

EPC = Exposure Point Concentration
UCL = Upper Confidence Level
For non-detects, 1/2 sample quantitation limit was used as a proxy concentration.

(1) Distribution and 95% UCL were calculated by ProUCL and are indicated as follows:
(NP) - Non-parametric distribution and 95% UCL
(L) - Lognormal distribution and 95% UCL

(2) Exposure point concentration statistic will be the 95% UCL (as calculated by ProUCL).

TABLE 3.4.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (2)	Rationale
Groundwater									
	1,1-Dichloroethene	µg/L	3.68	4.55	15.4	0.00368	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	1,2,3-Trichlorobenzene	µg/L	2.61	3.65	2.4 J	0.0024	mg/L	Max	Arithmetic Mean > Max (4)
	1,2,4-Trimethylbenzene	µg/L	3.74	5.51	35	0.00374	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	1,2-Dichloroethene (cis)	µg/L	120	173	800	0.120	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	1,2-Dichloroethene (total)	µg/L	175	294	670 D	0.175	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	1,2-Dichloroethene (trans)	µg/L	3.09	3.94	18.2	0.00309	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	1,2-Dichloropropane	µg/L	2.68	3.35	0.3 J	0.0003	mg/L	Max	Arithmetic Mean > Max (4)
	1,3,5-Trimethylbenzene	µg/L	2.73	3.96	30	0.00273	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	1,4-Dichlorobenzene (p-)	µg/L	2.92	3.61	2	0.002	mg/L	Max	Arithmetic Mean > Max (4)
	2-Chlorotoluene	µg/L	2.25	3.02	13 J	0.00225	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	4-Isopropyltoluene	µg/L	5.47	10.7	150	0.00547	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Benzene	µg/L	9.82	14.1	98	0.00982	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Bromodichloromethane	µg/L	2.86	3.55	2 J	0.002	mg/L	Max	Arithmetic Mean > Max (4)
	Bromoform	µg/L	2.77	3.43	6 J	0.00277	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Chloroform	µg/L	2.69	3.36	0.44 J	0.00044	mg/L	Max	Arithmetic Mean > Max (4)
	Ethylbenzene	µg/L	7.07	10.6	91	0.00707	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Isopropylbenzene (Cumene)	µg/L	4.33	6.94	76	0.00433	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Naphthalene	µg/L	165	277	1,970 D	0.165	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	n-Butylbenzene	µg/L	4.20	6.56	49	0.00420	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Tetrachloroethene (PCE)	µg/L	2.64	3.27	7 J	0.00264	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Toluene	µg/L	11.1	18.0	190	0.0111	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Trichloroethene (TCE)	µg/L	318	564	7,120 D	0.318	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Vinyl Chloride	µg/L	15.6	23.2	140	0.0156	mg/L	Arithmetic Mean	Region 4 Guidance (3)

TABLE 3.4.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Shallow Groundwater
Exposure Medium: Shallow Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (2)	Rationale
Groundwater (Cont)	Xylene, m/p-	µg/L	10.1	15.9	160	0.0101	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Xylene, o-	µg/L	5.34	8.36	84	0.00534	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Xylenes, total	µg/L	9.56	15.1	47	0.00956	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	1,1'-Biphenyl	µg/L	8.87	12.5	36	0.00887	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	2,4-Dimethylphenol	µg/L	63.8	153	990 D	0.06379	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	2-Methylnaphthalene	µg/L	45.7	89.7	480 D	0.0457	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	2-Methylphenol (o-Cresol)	µg/L	26.6	63.5	410 D	0.0266	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	4-Methylphenol (p-Cresol)	µg/L	18.1	40.5	250 DJ	0.0181	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Acenaphthene	µg/L	30.8	56.8	280 DJ	0.0308	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Bis(2-ethylhexyl) Phthalate (BEHP)	µg/L	5.50	6.20	9 J	0.0055	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Carbazole	µg/L	10.1	14.6	49	0.0101	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Dibenzofuran	µg/L	13.1	20.6	73	0.0131	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Fluorene	µg/L	10.7	16.0	50	0.0107	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Naphthalene	µg/L	165	277	1,970 D	0.165	mg/L	Arithmetic Mean	Region 4 Guidance (3)

EPC = Exposure Point Concentration
UCL = Upper Confidence Level
For non-detects, 1/2 sample quantitation limit was used as a proxy concentration.

(1) 95% Upper Confidence Limit
(2) Exposure point concentration statistic will be the 95% UCL (as calculated by ProUCL).
(3) Region 4 Human Health Risk Assessment Bulletin, 2000
(4) Arithmetic mean exceeds maximum detected concentration. Therefore, maximum concentration used for EPC

TABLE 3.5.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Deep Groundwater
Exposure Medium: Deep Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (2)	Rationale
Groundwater									
	1,2-Dichloroethene (cis)	µg/L	58.4	89.0	171	0.0584	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	1,2-Dichloroethene (trans)	µg/L	4.15	7.35	16.4	0.00415	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Benzene	µg/L	1.21	1.58	2.9	0.00121	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Naphthalene	µg/L	1.60	2.05	1 J	0.001	mg/L	Max	Arithmetic Mean > Max (4)
	Trichloroethene (TCE)	µg/L	45.5	118	400	0.0455	mg/L	Arithmetic Mean	Region 4 Guidance (3)
	Vinyl Chloride	µg/L	53.0	92.8	172	0.0530	mg/L	Arithmetic Mean	Region 4 Guidance (3)

EPC = Exposure Point Concentration
UCL = Upper Confidence Level
For non-detects, 1/2 sample quantitation limit was used as a proxy concentration.

(1) 95% Upper Confidence Limit
(2) Exposure point concentration statistic will be the 95% UCL (as calculated by ProUCL).
(3) Region 4 Human Health Risk Assessment Bulletin, 2000
(4) Arithmetic mean exceeds maximum detected concentration. Therefore, maximum concentration used for EPC.

TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current, Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion									Chronic Daily Intake (CDI) Equations
	Current Military Base Personnel	Adult	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	100	mg/day	USEPA, 1993	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	250	days/year	USEPA, 2004	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	4	years	Std Tour of Duty	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	1,460	days	USEPA, 1989	
	Future Trespassers	Adolescent	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	100	mg/day	USEPA, 1993	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	52	days/year	Prof Judge	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	10	years	USEPA, 2000	
				BW	Body Weight	45	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	3,650	days	USEPA, 1989	
	Future Residents	Adult	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	100	mg/day	USEPA, 1993	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	350	days/year	USEPA, 2004	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	24	years	USEPA, 1993	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA, 1989	
		Young Child	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	200	mg/day	USEPA, 1993	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	350	days/year	USEPA, 2004	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	6	years	USEPA, 1993	
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 1989	

TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current, Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion (Cont)									Chronic Daily Intake (CDI) Equations
	Future Construction Workers	Adult	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	480	mg/day	USEPA, 1993	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	250	days/year	USEPA, 2004	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	1	years	Prof Judge	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	
Dermal									Dermally Adjusted Dose (DAD) Equations
	Current Military Base Personnel	Adult	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	3,300	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.2	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	250	days/year	USEPA, 2004	1/BW x1/AT
				ED	Exposure Duration	4	years	Std Tour of Duty	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	1,460	days	USEPA, 1989	
	Future Trespassers	Adolescent	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	5,300	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.2	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	52	days/year	Prof Judge	1/BW x1/AT
				ED	Exposure Duration	10	years	USEPA, 2000	
				BW	Body Weight	45	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	3,650	days	USEPA, 1989	
	Future Residents	Adult	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	5,700	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.07	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	350	days/year	USEPA, 2004	1/BW x1/AT
				ED	Exposure Duration	24	years	USEPA, 1993	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA, 1989	

TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current, Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal (Cont)	Future Residents	Young Child	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	Dermally Adjusted Dose (DAD) Equations
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	2,800	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.2	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	350	days/year	USEPA, 2004	1/BW x1/AT
				ED	Exposure Duration	6	years	USEPA, 1993	
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 1989	
	Future Construction Workers	Adult	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	3,300	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.2	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	250	days/year	USEPA, 2004	1/BW x1/AT
				ED	Exposure Duration	1	years	Prof Judge	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	

Notes

(1) In the absense of USEPA RAGS Part E ABS values, USEPA Region IV default values of 0.01 organics and 0.001 for inorganics were used

CDI - Chronic Daily Intake

DAD - Dermally Adjusted Dose

Chemical Specific - See Table 3.1

Prof Judge - Professional Judgment

Std Tour of Duty - Standard Tour of Duty

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/00
USEPA, 1993: "Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure." November, 199
USEPA, 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa
USEPA, 2000: Supplemental Guidance to RAGS: Region 4 Bulletins: Human Health Risk Assessmen
USEPA, 2004: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R-99/00

TABLE 4.1.CT
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current, Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion									Chronic Daily Intake (CDI) Equations
	Future Residents	Adult	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	50	mg/day	USEPA, 1993	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	234	days/year	USEPA, 1993	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	7	years	USEPA, 1993	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 1989	
		Young Child	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	100	mg/day	USEPA, 1993	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	234	days/year	USEPA, 1993	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	2	years	USEPA, 1993	
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 1989	
	Future Construction Workers	Adult	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	240	mg/day	Prof Judge	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	219	days/year	USEPA, 2004	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	1	years	Prof Judge	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	

TABLE 4.1.CT
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current, Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal									Dermally Adjusted Dose (DAD) Equations
	Future Residents	Adult	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	5,700	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.01	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	234	days/year	USEPA, 1993	1/BW x1/AT
				ED	Exposure Duration	7	years	USEPA, 1993	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 1989	
	Future Residents	Young Child	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	2,800	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.04	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	234	days/year	USEPA, 1993	1/BW x1/AT
				ED	Exposure Duration	2	years	USEPA, 1993	
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 1989	
	Future Construction Workers	Adult	Surface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	3,300	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.02	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	219	days/year	USEPA, 2004	1/BW x1/AT
				ED	Exposure Duration	1	years	Prof Judge	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	

Notes
(1) In the absense of USEPA RAGS Part E ABS values, USEPA Region IV default values of 0.01 organics and 0.001 for inorganics were used.

CDI - Chronic Daily Intake
Chemical Specific - See Table 3.1
Prof Judge - Professional Judgment
DAD - Dermally Adjusted Dose

Sources:
USEPA, 1989: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
USEPA, 1993: "Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure." November, 1993.
USEPA, 1997: Exposure Factors Handbook. Vol. 1· General Factors. ORD. EPA/600/P-95/002Fa.
USEPA, 2004: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R-99/005.

TABLE 4.1a.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current, Future
Medium: Surface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation									Chronic Daily Intake (CDI) Equations
	Current Military Base Personnel	Adult	Fugative dust	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				RR	Respiration Rate	0.55	m3/hour	USEPA, 1997	
				ET	Exposure Time	8	hours/day	Prof Judge	
				EF	Exposure Frequency	250	days/year	USEPA, 2004	CDI (mg/kg-day) =
				ED	Exposure Duration	4	years	Std Tour of Duty	C x RR x ET x EF x ED x 1/PEF x
				PEF	Particulate Emission Factor	1.32E+09	m3/kg	Cowherd, et al., 1995	1/BW x1/AT
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	1,460	days	USEPA, 1989	
	Future Trespassers	Adolescent	Fugative dust	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				RR	Respiration Rate	0.576	m3/hour	USEPA, 1997	
				ET	Exposure Time	4.04	hours/day	USEPA, 1997	
				EF	Exposure Frequency	52	days/year	Prof Judge	CDI (mg/kg-day) =
				ED	Exposure Duration	10	years	USEPA, 2000	C x RR x ET x EF x ED x 1/PEF x
				PEF	Particulate Emission Factor	1.32E+09	m3/kg	Cowherd, et al., 1995	1/BW x1/AT
				BW	Body Weight	45	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	3,650	days	USEPA, 1989	
	Future Residents	Adult	Fugative dust	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				RR	Respiration Rate	0.55	m3/hour	USEPA, 1997	
				ET	Exposure Time	1.5	hours/day	USEPA, 1997	
				EF	Exposure Frequency	350	days/year	USEPA, 2004	CDI (mg/kg-day) =
				ED	Exposure Duration	24	years	USEPA, 1993	C x RR x ET x EF x ED x 1/PEF x
				PEF	Particulate Emission Factor	1.32E+09	m3/kg	Cowherd, et al., 1995	1/BW x1/AT
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA, 1989	
		Young Child	Fugative dust	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				RR	Respiration Rate	0.308	m3/hour	USEPA, 1997	
				ET	Exposure Time	5.57	hours/day	USEPA, 1997	
				EF	Exposure Frequency	350	days/year	USEPA, 2004	CDI (mg/kg-day) =
				ED	Exposure Duration	6	years	USEPA, 1993	C x RR x ET x EF x ED x 1/PEF x
				PEF	Particulate Emission Factor	1.32E+09	m3/kg	Cowherd, et al., 1995	1/BW x1/AT
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 1989	

TABLE 4.1a.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current, Future
Medium: Surface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation (Cont)	Future Construction Workers	Adult	Fugative dust						Chronic Daily Intake (CDI) Equations
				C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				RR	Respiration Rate	3.3	m3/hour	USEPA, 1997	
				ET	Exposure Time	8	hours/day	USEPA, 1991	
				EF	Exposure Frequency	250	days/year	USEPA, 2004	CDI (mg/kg-day) =
				ED	Exposure Duration	1	years	Prof Judge	C x RR x ET x EF x ED x 1/PEF x
				PEF	Particulate Emission Factor	2.00E+06	m3/kg	USEPA, 2001	1/BW x1/AT
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	

Notes

(1) In the absense of USEPA RAGS Part E ABS values, USEPA Region IV default values of 0.01 organics and 0.001 for inorganics were use

CDI - Chronic Daily Intake

Chemical Specific - See Table 3.1
Prof Judge - Professional Judgment
Std Tour of Duty - Standard Tour of Duty

DAD - Dermally Adjusted Dose

Sources:

Cowherd, et al., 1995: Rapid Assessment of Exposure to Particulate Emissions from Surface Contamination. OHEA. EPA/600/8-85/00
USEPA, 1989: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/00
USEPA, 1991: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual Supplemental Guidance: Standard Default Exposure Factor
USEPA, 1993: "Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure." November, 199
USEPA, 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa
USEPA, 2000: Supplemental Guidance to RAGS: Region 4 Bulletins: Human Health Risk Assessmen
USEPA, 2004: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R-99/00
USEPA, 2001a. Draft Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

TABLE 4.1a.CT
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current, Future
Medium: Surface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Future Residents	Adult	Fugative dust	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				RR	Respiration Rate	0.55	m3/hour	USEPA, 1997	
				ET	Exposure Time	1.5	hours/day	USEPA, 1997	
				EF	Exposure Frequency	234	days/year	USEPA, 1993	CDI (mg/kg-day) =
				ED	Exposure Duration	7	years	USEPA, 1993	C x IR x ET x EF x ED x 1/PEF x
				PEF	Particulate Emission Factor	1.32E+09	m3/kg	Cowherd, et al., 1995	1/BW x1/AT
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 1989	
		Young Child	Fugative dust	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				RR	Respiration Rate	0.308	m3/hour	USEPA, 1997	
				ET	Exposure Time	5.57	hours/day	USEPA, 1997	
				EF	Exposure Frequency	234	days/year	USEPA, 1993	CDI (mg/kg-day) =
				ED	Exposure Duration	2	years	USEPA, 1993	C x IR x ET x EF x ED x 1/PEF x
				PEF	Particulate Emission Factor	1.32E+09	m3/kg	Cowherd, et al., 1995	1/BW x1/AT
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 1989	
	Future Construction Workers	Adult	Fugative dust	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				RR	Respiration Rate	1.3	m3/hour	USEPA, 1997	
				ET	Exposure Time	8	hours/day	USEPA, 1991	
				EF	Exposure Frequency	219	days/year	USEPA, 2004	CDI (mg/kg-day) =
				ED	Exposure Duration	1	years	Prof Judge	C x IR x ET x EF x ED x 1/PEF x
				PEF	Particulate Emission Factor	2.00E+06	m3/kg	USEPA, 2001	1/BW x1/AT
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	

Notes

(1) In the absense of USEPA RAGS Part E ABS values, USEPA Region IV default values of 0.01 organics and 0.001 for inorganics were used

Chemical Specific - See Table 3.1

CDI - Chronic Daily Intake

DAD - Dermally Adjusted Dose

Sources:

Cowherd, et al., 1995: Rapid Assessment of Exposure to Particulate Emissions from Surface Contamination. OHEA. EPA/600/8-85/00
USEPA, 1989: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/00
USEPA, 1993: "Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure." November, 199
USEPA, 2004: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R-99/00

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion									Chronic Daily Intake (CDI) Equations
	Future Residents	Adult	Subsurface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	100	mg/day	USEPA, 1993	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	350	days/year	USEPA, 2004	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	24	years	USEPA, 1993	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA, 1989	
		Young Child	Subsurface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	200	mg/day	USEPA, 1993	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	350	days/year	USEPA, 2004	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	6	years	USEPA, 1993	
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 1989	
	Future Construction Workers	Adult	Subsurface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	480	mg/day	USEPA, 1993	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	250	days/year	USEPA, 2004	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	1	years	Prof Judge	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal									Dermally Adjusted Dose (DAD) Equations
	Future Residents	Adult	Subsurface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	5,700	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.07	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	350	days/year	USEPA, 2004	1/BW x1/AT
				ED	Exposure Duration	24	years	USEPA, 1993	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA, 1989	
		Young Child	Subsurface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	2,800	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.2	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	350	days/year	USEPA, 2004	1/BW x1/AT
				ED	Exposure Duration	6	years	USEPA, 1993	
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 1989	
	Future Construction Workers	Adult	Subsurface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	3,300	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.2	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	250	days/year	USEPA, 2004	1/BW x1/AT
				ED	Exposure Duration	1	years	Prof Judge	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	

Notes

(1) In the absense of USEPA RAGS Part E ABS values, USEPA Region IV default values of 0.01 organics and 0.001 for inorganics were used

Chemical Specific = See Table 3.1 Prof Judge = Professional Judgment

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002
USEPA, 1993: "Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure." November, 199
USEPA, 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa
USEPA, 2004: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R-99/00

TABLE 4.2.CT
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion									Chronic Daily Intake (CDI) Equations
	Future Residents	Adult	Subsurface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	50	mg/day	USEPA, 1993	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	234	days/year	USEPA, 1993	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	7	years	USEPA, 1993	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 1989	
		Young Child	Subsurface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	100	mg/day	USEPA, 1993	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	234	days/year	USEPA, 1993	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	2	years	USEPA, 1993	
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 1989	
	Future Construction Workers	Adult	Subsurface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				IR-S	Ingestion Rate of Soil	240	mg/day	Prof Judge	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				FI	Fraction Ingested from Source	1	NA	Prof Judge	CDI (mg/kg-day) =
				EF	Exposure Frequency	219	days/year	USEPA, 2004	C x IR x CF x Fi x EF x ED x 1/BW x 1/AT
				ED	Exposure Duration	1	years	Prof Judge	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	

TABLE 4.2.CT
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soi

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal									Dermally Adjusted Dose (DAD) Equations
	Future Residents	Adult	Subsurface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	5,700	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.07	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	234	days/year	USEPA, 1993	1/BW x1/AT
				ED	Exposure Duration	7	years	USEPA, 1993	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 1989	
		Young Child	Subsurface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	2,800	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.04	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	234	days/year	USEPA, 1993	1/BW x1/AT
				ED	Exposure Duration	2	years	USEPA, 1993	
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 1989	
	Future Construction Workers	Adult	Subsurface Soil	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				CF	Conversion Factor	1.00E-06	kg/mg	USEPA, 1989	
				SA	Surface Area Available for Contact	3,300	cm2/day	USEPA, 2004	
				AF	Soil to Skin Adherence Factor	0.02	mg/cm2	USEPA, 2004	DAD (mg/kg-day) =
				ABS	Absorption Factor	(1)	NA	USEPA, 2004	C x CF x SA x AF x ABS x EF x ED x
				EF	Exposure Frequency	219	days/year	USEPA, 2004	1/BW x1/AT
				ED	Exposure Duration	1	years	Prof Judge	
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	

Notes

(1) In the absense of USEPA RAGS Part E ABS values, USEPA Region IV default values of 0.01 organics and 0.001 for inorganics were use

Chemical Specific = See Table 3.1 Prof Judge - Professional Judgmen

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/00
USEPA, 1993: "Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure." November, 199
USEPA, 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa
USEPA, 2004: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R-99/0

TABLE 4.2a.CT
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation									Chronic Daily Intake (CDI) Equations
	Future Residents	Adult	Fugative dust	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				RR	Respiration Rate	0.55	m3/hour	USEPA, 1997	
				ET	Exposure Time	1.5	hours/day	USEPA, 1997	
				EF	Exposure Frequency	234	days/year	USEPA, 1993	CDI (mg/kg-day) =
				ED	Exposure Duration	7	years	USEPA, 1993	C x IR x ET x EF x ED x 1/PEF x
				PEF	Particulate Emission Factor	1.32E+09	m3/kg	Cowherd, et al., 1995	1/BW x1/AT
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 1989	
		Young Child	Fugative dust	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				RR	Respiration Rate	0.308	m3/hour	USEPA, 1997	
				ET	Exposure Time	5.57	hours/day	USEPA, 1997	
				EF	Exposure Frequency	234	days/year	USEPA, 1993	CDI (mg/kg-day) =
				ED	Exposure Duration	2	years	USEPA, 1993	C x IR x ET x EF x ED x 1/PEF x
				PEF	Particulate Emission Factor	1.32E+09	m3/kg	Cowherd, et al., 1995	1/BW x1/AT
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 1989	
	Future Construction Workers	Adult	Fugative dust	C	Contaminant Concentration in Soil	Chemical Specific	mg/kg	Chemical Specific	
				RR	Respiration Rate	1.3	m3/hour	USEPA, 1997	
				ET	Exposure Time	8	hours/day	USEPA, 1991	
				EF	Exposure Frequency	219	days/year	USEPA, 2004	CDI (mg/kg-day) =
				ED	Exposure Duration	1	years	Prof Judge	C x IR x ET x EF x ED x 1/PEF x
				PEF	Particulate Emission Factor	2.00E+06	m3/kg	USEPA, 2001	1/BW x1/AT
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	

Notes

(1) In the absense of USEPA RAGS Part E ABS values, USEPA Region IV default values of 0.01 organics and 0.001 for inorganics were used

Chemical Specific - See Table 3.1
Prof Judge - Professional Judgment

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002
USEPA, 1991: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual Supplemental Guidance: Standard Default Exposure Factor
USEPA, 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa
USEPA, 2004: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R-99/00
USEPA, 2001a. Draft Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

TABLE 4.3.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Groundwater (Shallow and Deep)
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion									Chronic Daily Intake (CDI) Equations
	Future Residents	Adult	Groundwater	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	
				IR-W	Ingestion Rate of Groundwater	2	L/hour	USEPA, 1993	
				EF	Exposure Frequency	350	days/year	USEPA, 2004	CDI (mg/kg-day) =
				ED	Exposure Duration	24	years	USEPA, 1993	C x IR-W x EF x ED x 1/BW x 1/AT
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA, 1989	
		Young Child	Groundwater	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	
				IR-W	Ingestion Rate of Groundwater	1	L/hour	USEPA, 1989	
				EF	Exposure Frequency	350	days/year	USEPA, 1993	CDI (mg/kg-day) =
				ED	Exposure Duration	6	years	USEPA, 1993	C x IR-W x EF x ED x 1/BW x 1/AT
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 1989	
Dermal									Dermally Adjusted Dose (DAD) Equations
	Future Construction Workers	Adult	Groundwater	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	
				CF	Conversion Factor	1.00E-03	L/cm3	USEPA, 1989	DAD (mg/kg-day) =
				SA	Surface Area Available for Contact	3,300	cm2	USEPA, 2004	
				PC	Permeability Constant	Chemical Specific	cm/hour	USEPA, 2004	Inorganics
				tau	Lag Time	Chemical Specific	hour	USEPA, 2004	(C*CF*Kp*SA*EF*ED*ET)/(BW*AT
				t*	Time to Reach Steady State	Chemical Specific	hour	USEPA, 2004	
				B	Permeability Coefficient of a Compound	Chemical Specific	NA	USEPA, 2004	Organics: ET <= t*
				ET	Exposure Time	2.6	hours/day	Prof Judge	(C*CF*(2*Kp*SQRT(6*tau*ET/pi))*SA*EF*ED)/(BW*AT
				EF	Exposure Frequency	250	days/year	USEPA, 2004	
				ED	Exposure Duration	1	years	Prof Judge	Organics: ET > t*
				BW	Body Weight	70	kg	USEPA, 1997	(C*CF*(Kp*(ET/(1+B)+2*tau*((1+3*B)/(1+B)))*SA*EF*ED)/(BW*AT
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	

TABLE 4.3.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Groundwater (Shallow and Deep)
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal (Cont)	Future Residents	Adult	Groundwater	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	Dermally Adjusted Dose (DAD) Equations
				CF	Conversion Factor	1.00E-03	L/cm3	USEPA, 1989	DAD (mg/kg-day) =
				SA	Surface Area Available for Contact	18,000	cm2	USEPA, 2004	
				PC	Permeability Constant	Chemical Specific	cm/hour	USEPA, 2004	Inorganics
				tau	Lag Time	Chemical Specific	hour	USEPA, 2004	(C*CF*Kp*SA*EF*ED*ET)/(BW*AT
				t*	Time to Reach Steady State	Chemical Specific	hour	USEPA, 2004	
				B	Permeability Coefficient of a Compound	Chemical Specific	NA	USEPA, 2004	Organics: ET <= t*
				ET	Exposure Time	0.58	hours/day	USEPA, 2004	(C*CF*(2*Kp*SQRT(6*tau*ET/pi))*SA*EF*ED)/(BW*AT
				EF	Exposure Frequency	350	days/year	USEPA, 2004	
				ED	Exposure Duration	24	years	USEPA, 1993	Organics: ET > t*
				BW	Body Weight	70	kg	USEPA, 1997	(C*CF*(Kp*(ET/(1+B)+2*tau*((1+3*B)/(1+B)))*SA*EF*ED)/(BW*AT
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA, 1989	
		Young Child	Groundwater	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	
				CF	Conversion Factor	1.00E-03	L/cm3	USEPA, 1989	DAD (mg/kg-day) =
				SA	Surface Area Available for Contact	6,600	cm2	USEPA, 2004	
				PC	Permeability Constant	Chemical Specific	cm/hour	USEPA, 2004	Inorganics
				tau	Lag Time	Chemical Specific	hour	USEPA, 2004	(C*CF*Kp*SA*EF*ED*ET)/(BW*AT
				t*	Time to Reach Steady State	Chemical Specific	hour	USEPA, 2004	
				B	Permeability Coefficient of a Compound	Chemical Specific	NA	USEPA, 2004	Organics: ET <= t*
				ET	Exposure Time	1	hours/day	USEPA, 2004	(C*CF*(2*Kp*SQRT(6*tau*ET/pi))*SA*EF*ED)/(BW*AT
				EF	Exposure Frequency	350	days/year	USEPA, 1993	
				ED	Exposure Duration	6	years	USEPA, 1993	Organics: ET > t*
				BW	Body Weight	15	kg	USEPA, 1997	(C*CF*(Kp*(ET/(1+B)+2*tau*((1+3*B)/(1+B)))*SA*EF*ED)/(BW*AT
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 1989	

Notes

(1) In the absense of USEPA RAGS Part E ABS values, USEPA Region IV default values of 0.01 organics and 0.001 for inorganics were used

Chemical Specific - See Table 3.3

CDI - Chronic Daily Intake

DAD - Dermally Adjusted Dose

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/00
USEPA, 1993: "Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure." November, 199
USEPA, 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa
USEPA, 2004: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R-99/00

TABLE 4.3.CT
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Groundwater (Shallow and Deep)
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion									Chronic Daily Intake (CDI) Equations
	Future Residents	Adult	Groundwater	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	
				IR-W	Ingestion Rate of Groundwater	1.4	L/hour	USEPA, 1993	
				EF	Exposure Frequency	234	days/year	USEPA, 1993	CDI (mg/kg-day) =
				ED	Exposure Duration	7	years	USEPA, 1993	C x IR-W x EF x ED x 1/BW x 1/AT
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 1989	
		Young Child	Groundwater	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	
				IR-W	Ingestion Rate of Groundwater	1	L/hour	USEPA, 1989	
				EF	Exposure Frequency	234	days/year	USEPA, 1993	CDI (mg/kg-day) =
				ED	Exposure Duration	2	years	USEPA, 1993	C x IR-W x EF x ED x 1/BW x 1/AT
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 1989	
	Future Construction Workers	Adult	Groundwater	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	
				IR-W	Ingestion Rate of Groundwater	1.4	L/hour	USEPA, 1993	
				EF	Exposure Frequency	219	days/year	USEPA, 2004	CDI (mg/kg-day) =
				ED	Exposure Duration	1	years	Prof Judge	C x IR-W x EF x ED x 1/BW x 1/AT
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	
Dermal									Dermally Adjusted Dose (DAD) Equations
	Future Residents	Adult	Groundwater	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	
				CF	Conversion Factor	1.00E-03	L/cm3	USEPA, 1989	DAD (mg/kg-day) =
				SA	Surface Area Available for Contact	18,000	cm2	USEPA, 2004	
				PC	PeCTability Constant	Chemical Specific	cm/hour	USEPA, 2004	Inorganics
				tau	Lag Time	Chemical Specific	hour	USEPA, 2004	(C*CF*Kp*SA*EF*ED*ET)/(BW*AT
				t*	Time to Reach Steady State	Chemical Specific	hour	USEPA, 2004	
				B	PeCTability Coefficient of a Compound	Chemical Specific	NA	USEPA, 2004	Organics: ET <= t*
				ET	Exposure Time	0.25	hours/day	USEPA, 2004	(C*CF*(2*Kp*SQRT(6*tau*ET/pi))*SA*EF*ED)/(BW*AT
				EF	Exposure Frequency	234	days/year	USEPA, 1993	
				ED	Exposure Duration	7	years	USEPA, 1993	Organics: ET > t*
				BW	Body Weight	70	kg	USEPA, 1997	(C*CF*(Kp*(ET/(1+B)+2*tau*((1+3*B)/(1+B)))*SA*EF*ED)/(BW*AT
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 1989	

TABLE 4.3.CT
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Groundwater (Shallow and Deep)
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal (Cont)	Future Residents	Young Child	Groundwater	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	Dermally Adjusted Dose (DAD) Equations
				CF	Conversion Factor	1.00E-03	L/cm3	USEPA, 1989	DAD (mg/kg-day) =
				SA	Surface Area Available for Contact	6,600	cm2	USEPA, 2004	
				PC	PeCTability Constant	Chemical Specific	cm/hour	USEPA, 2004	Inorganics
				tau	Lag Time	Chemical Specific	hour	USEPA, 2004	(C*CF*Kp*SA*EF*ED*ET)/(BW*AT
				t*	Time to Reach Steady State	Chemical Specific	hour	USEPA, 2004	
				B	PeCTability Coefficient of a Compound	Chemical Specific	NA	USEPA, 2004	Organics: ET <= t*
				ET	Exposure Time	0.33	hours/day	USEPA, 2004	(C*CF*(2*Kp*SQRT(6*tau*ET/pi))*SA*EF*ED)/(BW*AT
				EF	Exposure Frequency	234	days/year	USEPA, 1993	
				ED	Exposure Duration	2	years	USEPA, 1993	Organics: ET > t*
				BW	Body Weight	15	kg	USEPA, 1997	(C*CF*(Kp*(ET/(1+B)+2*tau*((1+3*B)/(1+B)))*SA*EF*ED)/(BW*AT
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 1989	
	Future Construction Workers	Adult	Groundwater	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	
				CF	Conversion Factor	1.00E-03	L/cm3	USEPA, 1989	DAD (mg/kg-day) =
				SA	Surface Area Available for Contact	3,300	cm2	USEPA, 2004	
				PC	PeCTability Constant	Chemical Specific	cm/hour	USEPA, 2004	Inorganics
				tau	Lag Time	Chemical Specific	hour	USEPA, 2004	(C*CF*Kp*SA*EF*ED*ET)/(BW*AT
				t*	Time to Reach Steady State	Chemical Specific	hour	USEPA, 2004	
				B	PeCTability Coefficient of a Compound	Chemical Specific	NA	USEPA, 2004	Organics: ET <= t*
				ET	Exposure Time	2.6	hours/day	Prof Judge	(C*CF*(2*Kp*SQRT(6*tau*ET/pi))*SA*EF*ED)/(BW*AT
				EF	Exposure Frequency	219	days/year	USEPA, 2004	
				ED	Exposure Duration	1	years	Prof Judge	Organics: ET > t*
				BW	Body Weight	70	kg	USEPA, 1997	(C*CF*(Kp*(ET/(1+B)+2*tau*((1+3*B)/(1+B)))*SA*EF*ED)/(BW*AT
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	

Notes

(1) In the absense of USEPA RAGS Part E ABS values, USEPA Region IV default values of 0.01 organics and 0.001 for inorganics were used

Chemical Specific - See Table 3.3

CDI - Chronic Daily Intake

DAD - Dermally Adjusted Dose

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/00
USEPA, 1993: "Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure." November, 199
USEPA, 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa
USEPA, 2004: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R-99/00

TABLE 4.3a.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Groundwater (Shallow and Deep)
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Future Residents	Adult	Tap	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	Chronic Daily Intake (CDI) Equations
				IR-W	Ingestion Rate of Groundwater	2	L/hour	USEPA, 1993	
				EF	Exposure Frequency	350	days/year	USEPA, 2004	CDI (mg/kg-day) =
				ED	Exposure Duration	24	years	USEPA, 1993	C x IR-W x EF x ED x 1/BW x 1/AT
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA, 1989	

Notes

(1) In the absense of USEPA RAGS Part E ABS values, USEPA Region IV default values of 0.01 organics and 0.001 for inorganics were used.

Chemical Specific - See Table 3.3

CDI - Chronic Daily Intake

DAD - Dermally Adjusted Dose

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
USEPA, 1993: "Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure." November, 1993.
USEPA, 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa.
USEPA, 2004: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R-99/005.

TABLE 4.3a.CT
VALUES USED FOR DAILY INTAKE CALCULATIONS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Medium: Groundwater (Shallow and Deep)
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Future Residents	Adult	Tap	C	Contaminant Concentration in Groundwater	Chemical Specific	mg/L	Chemical Specific	Chronic Daily Intake (CDI) Equations
				IR-W	Ingestion Rate of Groundwater	1.4	L/hour	USEPA, 1993	
				EF	Exposure Frequency	234	days/year	USEPA, 1993	CDI (mg/kg-day) =
				ED	Exposure Duration	7	years	USEPA, 1993	C x IR-W x EF x ED x 1/BW x 1/AT
				BW	Body Weight	70	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 1989	

Notes

(1) In the absense of USEPA RAGS Part E ABS values, USEPA Region IV default values of 0.01 organics and 0.001 for inorganics were used

Chemical Specific - See Table 3.3

CDI - Chronic Daily Intake

DAD - Dermally Adjusted Dose

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/00
USEPA, 1993: "Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure." November, 199
USEPA, 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa

TABLE 5.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal [1]	Absorbed RfD for Dermal [2]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s)
1,1-Dichloroethene	Chronic	5.00E-02	mg/kg/day	100%	5.00E-02	mg/kg/day	Liver	100/1	IRIS	7/21/2005
1,2,3-Trichlorobenzene [3]	Chronic	1.00E-02	mg/kg/day	100%	1.00E-02	mg/kg/day	Kidney	1000/1	IRIS	6/8/2005
1,2,4-Trimethylbenzene	NA	5.00E-02	mg/kg/day	100%	5.00E-02	mg/kg/day	NA	NA	PPRTV	NA
1,2-Dichloroethene (cis)	Chronic	1.00E-02	mg/kg/day	100%	1.00E-02	mg/kg/day	CVS	3000/1	PPRTV	7/1/1997
1,2-Dichloroethene (total)	Chronic	1.00E-02	mg/kg/day	100%	1.00E-02	mg/kg/day	Liver	1000/1	PPRTV	7/1/1997
1,2-Dichloroethene (trans)	Chronic	2.00E-02	mg/kg/day	100%	2.00E-02	mg/kg/day	CVS	1000/1	IRIS	7/21/2005
1,2-Dichloropropane	NA	1.10E-03	mg/kg/day	100%	1.10E-03	mg/kg/day	NA	NA	RE	NA
1,3,5-Trimethylbenzene	Chronic	5.00E-02	mg/kg/day	100%	5.00E-02	mg/kg/day	Whole body / Kidney / Liver	3000/1	PPRTV	6/30/1999
2-Chlorotoluene	Chronic	2.00E-02	mg/kg/day	100%	2.00E-02	mg/kg/day	Whole body	1000/1	IRIS	7/21/2005
2-Hexanone (MBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	Chronic	4.00E-03	mg/kg/day	100%	4.00E-03	mg/kg/day	CVS	300/1	IRIS	7/21/2005
Bromodichloromethane	Chronic	2.00E-02	mg/kg/day	100%	2.00E-02	mg/kg/day	Kidney	1000/1	IRIS	3/9/2005
Bromoform	Chronic	2.00E-02	mg/kg/day	100%	2.00E-02	mg/kg/day	Liver	1000/1	IRIS	7/21/2005
Chloroform	Chronic	1.00E-02	mg/kg/day	100%	1.00E-02	mg/kg/day	Liver	100/1	IRIS	2/2/2005
Ethylbenzene	Chronic	1.00E-01	mg/kg/day	100%	1.00E-01	mg/kg/day	Liver / Kidney	1000/1	IRIS	7/21/2005
Isopropylbenzene (Cumene)	Chronic	1.00E-01	mg/kg/day	100%	1.00E-01	mg/kg/day	Kidney	1000/1	IRIS	7/21/2005
n-Butylbenzene	NA	4.00E-02	mg/kg/day	100%	4.00E-02	mg/kg/day	NA	NA	NCEA	NA
Tetrachloroethene (PCE)	Chronic	1.00E-02	mg/kg/day	100%	1.00E-02	mg/kg/day	Liver / Whole Body	1000/1	IRIS	6/8/2005
Toluene	Chronic	2.00E-01	mg/kg/day	100%	2.00E-01	mg/kg/day	Liver / Kidney	1000/1	IRIS	7/21/2005
Trichloroethene (TCE)	Chronic	3.00E-04	mg/kg/day	100%	3.00E-04	mg/kg/day	Kidney / Liver / Fetus	3000/1	NCEA	8/1/2001
Vinyl Chloride	Chronic	3.00E-03	mg/kg/day	100%	3.00E-03	mg/kg/day	Liver	30/1	IRIS	7/21/2005
Xylene, m/p-	Chronic	2.00E-01	mg/kg/day	100%	2.00E-01	mg/kg/day	Whole body	1000/1	IRIS	7/21/2005
Xylene, o-	Chronic	2.00E-01	mg/kg/day	100%	2.00E-01	mg/kg/day	Whole body	1000/1	IRIS	7/21/2005
Xylenes, total	Chronic	2.00E-01	mg/kg/day	100%	2.00E-01	mg/kg/day	Whole body	1000/1	IRIS	7/21/2005
1,1'-Biphenyl	Chronic	5.00E-02	mg/kg/day	100%	5.00E-02	mg/kg/day	Kidney	100/10	IRIS	7/21/2005
1,4-Dichlorobenzene (p-)	NA	3.00E-02	mg/kg/day	100%	3.00E-02	mg/kg/day	NA	NA	NCEA	NA
2,4-Dimethylphenol	Chronic	2.00E-02	mg/kg/day	100%	2.00E-02	mg/kg/day	Whole Body / CVS	3000/1	IRIS	7/21/2005
2-Methylphenol (o-Cresol)	Chronic	5.00E-02	mg/kg/day	100%	5.00E-02	mg/kg/day	Whole body / CVS	1000/1	IRIS	7/21/2005
4-Methylphenol (p-Cresol)	Chronic	5.00E-03	mg/kg/day	100%	5.00E-03	mg/kg/day	CNS / RsS / Whole Body	1000/1	HEAST	7/1/1997
Acetophenone	Chronic	NA	NA	NA	NA	NA	Whole Body	3000/1	NA	10/22/2003
Bis(2-ethylhexyl) Phthalate (BEHP)	Chronic	2.00E-02	mg/kg/day	100%	2.00E-02	mg/kg/day	Liver	1000/1	IRIS	2/24/2005
Fluorene	Chronic	4.00E-02	mg/kg/day	100%	4.00E-02	mg/kg/day	CVS	3000/1	IRIS	7/21/2005
2-Methylnaphthalene	Chronic	4.00E-03	mg/kg/day	100%	4.00E-03	mg/kg/day	Lung	1000/1	NA	4/21/2004

TABLE 5.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal [1]	Absorbed RfD for Dermal [2]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s)
Acenaphthene	Chronic	6.00E-02	mg/kg/day	100%	6.00E-02	mg/kg/day	Liver	3000/1	IRIS	7/21/2005
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	Chronic	2.00E-03	mg/kg/day	100%	2.00E-03	mg/kg/day	NA	NA	NCEA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	Chronic	2.00E-02	mg/kg/day	100%	2.00E-02	mg/kg/day	Whole Body	3000/1	IRIS	6/8/2005
Arsenic	Chronic	3.00E-04	mg/kg/day	100%	3.00E-04	mg/kg/day	Skin / CVS	3/1	IRIS	2/2/2005
Cadmium	Chronic	5.00E-04	mg/kg/day	5%	2.50E-05	mg/kg/day	Kidney	10/1	IRIS	2/2/2005

Notes:

(1) Refer to the risk calculation spreadsheets presented in Appendix J
(2) Adjusted dermal RfD = Oral RfD * Adj Factor
(3) 1,2,4-Trichlorobenzene used as a surrogate.

NA = Not Applicable

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

Sources:
IRIS = Integrated Risk Information System
HEAST= Health Effects Assessment Summary Tables
NCEA = National Center for Environmental Assessment, USEPA
RE = Region 9 Route Extrapolation

TABLE 5.2
NON-CANCER TOXICITY DATA -- INHALATION
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Extrapolated RfD		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s)
1,1-Dichloroethene	Chronic	2.1E-01	mg/m3	5.70E-02	mg/kg/day	Liver	30/1	IRIS	7/21/2005
1,2,3-Trichlorobenzene	Chronic	3.5E-03	mg/m3	1.00E-03	mg/kg/day	Liver	100/1	PPRTV	7/1/1997
1,2,4-Trimethylbenzene	NA	6.0E-03	mg/m3	1.70E-03	mg/kg/day	NA	NA	PPRTV	NA
1,2-Dichloroethene (cis)	NA	NA	NA	1.00E-02	mg/kg/day	NA	NA	RE	NA
1,2-Dichloroethene (total)	NA	NA	NA	1.00E-02	mg/kg/day	NA	NA	RE	NA
1,2-Dichloroethene (trans)	NA	6.0E-02	mg/m3	2.00E-02	mg/kg/day	NA	NA	RE	NA
1,2-Dichloropropane	Chronic	4.0E-03	mg/m3	1.14E-03	mg/kg/day	RsS	300/1	IRIS	7/21/2005
1,3,5-Trimethylbenzene	NA	6.0E-03	mg/m3	1.70E-03	mg/kg/day	NA	NA	PPRTV	NA
2-Chlorotoluene	NA	NA	NA	2.00E-02	mg/kg/day	NA	NA	RE	NA
2-Hexanone (MBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	Chronic	3.0E-02	mg/m3	8.60E-03	mg/kg/day	CVS	300/1	IRIS	7/21/2005
Bromodichloromethane	NA	NA	NA	2.00E-02	mg/kg/day	NA	NA	RE	NA
Bromoform	NA	NA	NA	2.00E-02	mg/kg/day	NA	NA	RE	NA
Chloroform	NA	4.9E-02	mg/m3	1.40E-02	mg/kg/day	NA	NA	NCEA	NA
Ethylbenzene	Chronic	1.0E+00	mg/m3	2.90E-01	mg/kg/day	Whole body / Fetus	300/1	IRIS	7/21/2005
Isopropylbenzene (Cumene)	Chronic	3.9E-01	mg/m3	1.10E-01	mg/kg/day	Kidney	1000/1	IRIS	7/21/2005
n-Butylbenzene	NA	NA	NA	4.00E-02	mg/kg/day	NA	NA	RE	NA
Tetrachloroethene (PCE)	Chronic	4.9E-01	mg/m3	1.00E-02	mg/kg/day	Liver / Kidney / Brain	300/1	Other EPA Document	6/20/1997
Toluene	Chronic	4.0E-01	mg/m3	1.10E-01	mg/kg/day	CNS / RsS	300/1	IRIS	7/21/2005
Trichloroethene (TCE)	Chronic	3.5E-02	mg/m3	1.00E-02	mg/kg/day	CNS / Liver / Endocrine	1000/1	NCEA	8/1/2001
Vinyl Chloride	Chronic	9.8E-02	mg/m3	2.86E-02	mg/kg/day	Liver	30/1	IRIS	7/21/2005
Xylene, m/p-	Chronic	1.1E-01	mg/m3	2.90E-02	mg/kg/day	CNS	300/1	IRIS	7/21/2005
Xylene, o-	Chronic	1.1E-01	mg/m3	2.90E-02	mg/kg/day	CNS	300/1	IRIS	7/21/2005
Xylenes, total	Chronic	1.1E-01	mg/m3	2.90E-02	mg/kg/day	CNS	300/1	IRIS	7/21/2005
1,1'-Biphenyl	NA	NA	NA	5.00E-02	mg/kg/day	NA	NA	RE	NA
1,4-Dichlorobenzene (p-)	Chronic	8.0E-01	mg/m3	2.30E-01	mg/kg/day	Liver	100/1	IRIS	7/21/2005
2,4-Dimethylphenol	NA	NA	NA	2.00E-02	mg/kg/day	NA	NA	RE	NA
2-Methylphenol (o-Cresol)	NA	NA	NA	5.00E-02	mg/kg/day	NA	NA	RE	NA
4-Methylphenol (p-Cresol)	NA	NA	NA	5.00E-03	mg/kg/day	NA	NA	RE	NA

TABLE 5.2
NON-CANCER TOXICITY DATA -- INHALATION
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Extrapolated RfD		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s)
Acetophenone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP)	NA	NA	NA	2.00E-02	mg/kg/day	NA	NA	RE	NA
Fluorene	NA	NA	NA	4.00E-02	mg/kg/day	NA	NA	RE	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	6.00E-02	mg/kg/day	NA	NA	RE	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	NA	NA	NA	2.00E-03	mg/kg/day	NA	NA	RE	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	Chronic	3.2E-03	mg/m3	8.57E-04	mg/kg/day	RsS	3000/1	IRIS	6/8/2005
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	Chronic	NA	NA	NA	NA	Kidney	1/1	NA	3/4/1999

Notes:

NA = Not Applicable

Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

Sources:
IRIS = Integrated Risk Information System
NCEA = National Center for Environmental Assessment, USEPA
RE = Region 9 Route Extrapolation

TABLE 6.1
CANCER TOXICITY DATA -- ORAL/DERMAL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal [1]	Absorbed Cancer Slope Factor for Dermal [2]		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s)
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (cis)	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	6.80E-02	1 / (mg/kg/day)	100%	6.80E-02	1 / (mg/kg/day)	B2	HEAST	7/1/1997
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone (MBK)	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5.50E-02	1 / (mg/kg/day)	100%	5.50E-02	1 / (mg/kg/day)	A	IRIS	7/21/2005
Bromodichloromethane	6.20E-02	1 / (mg/kg/day)	100%	6.20E-02	1 / (mg/kg/day)	B2	IRIS	3/9/2005
Bromoform	7.90E-03	1 / (mg/kg/day)	100%	7.90E-03	1 / (mg/kg/day)	B2	IRIS	7/21/2005
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	5.40E-01	1 / (mg/kg/day)	100%	5.40E-01	1 / (mg/kg/day)	C	Other EPA Document	7/1/1985
Toluene	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (TCE)	4.00E-01	1 / (mg/kg/day)	100%	4.00E-01	1 / (mg/kg/day)	B2	NCEA	10/1/2000
Vinyl Chloride	1.50E+00	1 / (mg/kg/day)	100%	1.50E+00	1 / (mg/kg/day)	A	IRIS	7/21/2005
Xylene, m/p-	NA	NA	NA	NA	NA	NA	NA	NA
Xylene, o-	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA
1,1'-Biphenyl	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene (p-)	2.40E-02	1 / (mg/kg/day)	100%	2.40E-02	1 / (mg/kg/day)	C	HEAST	7/1/1997
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-Cresol)	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol (p-Cresol)	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 6.1
CANCER TOXICITY DATA -- ORAL/DERMAL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal (1)	Absorbed Cancer Slope Factor for Dermal (2)		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s)
Acetophenone	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP)	1.40E-02	1 / (mg/kg/day)	100%	1.40E-02	1 / (mg/kg/day)	B2	IRIS	2/24/2005
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	7.30E-01	1 / (mg/kg/day)	100%	7.30E-01	1 / (mg/kg/day)	B2	NCEA	4/26/2000
Benzo(a)pyrene	7.30E+00	1 / (mg/kg/day)	100%	7.30E+00	1 / (mg/kg/day)	B2	IRIS	1/19/2005
Benzo(b)fluoranthene	7.30E-01	1 / (mg/kg/day)	100%	7.30E-01	1 / (mg/kg/day)	B2	NCEA	4/26/2000
Benzo(k)fluoranthene	7.30E-02	1 / (mg/kg/day)	100%	7.30E-02	1 / (mg/kg/day)	B2	NCEA	4/26/2000
Carbazole	2.00E-02	1 / (mg/kg/day)	100%	2.00E-02	1 / (mg/kg/day)	B2	HEAST	7/1/1997
Chrysene	7.30E-03	1 / (mg/kg/day)	100%	7.30E-03	1 / (mg/kg/day)	B2	NCEA	4/26/2000
Dibenz(a,h)anthracene	7.30E+00	1 / (mg/kg/day)	100%	7.30E+00	1 / (mg/kg/day)	B2	NCEA	4/26/2000
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	7.30E-01	1 / (mg/kg/day)	100%	7.30E-01	1 / (mg/kg/day)	B2	NCEA	4/26/2000
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	1.50E+00	1 / (mg/kg/day)	100%	1.50E+00	1 / (mg/kg/day)	A	IRIS	2/2/2005
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

(1) Refer to the risk calculation spreadsheets presented in Appendix J
(2) Adjusted dermal CSF = Oral CSF / Adj Factor

NA = Not Applicable

Sources:
IRIS = Integrated Risk Information System
HEAST= Health Effects Assessment Summary Tables
NCEA = National Center for Environmental Assessment, USEPA

EPA Group:
A - Human carcinogen
B1 - Probable human carcinogen - indicates that limited human data are available
B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans
C - Possible human carcinogen
D - Not classifiable as a human carcinogen
E - Evidence of noncarcinogenicity

Weight of Evidence:
Known/Likely (EPA classes A, B1, B2, C)
Cannot be Determined (EPA class D)
Not Likely (EPA class E)

TABLE 6.2
CANCER TOXICITY DATA -- INHALATION
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s)
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (cis)	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	6.80E-02	mg/kg/day	B2	RE	7/1/1997
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA
2-Hexanone (MBK)	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA
Benzene	7.7E-06	ug/m3	2.70E-02	mg/kg/day	A	IRIS	7/21/2005
Bromodichloromethane	NA	NA	6.20E-02	mg/kg/day	D	RE	NA
Bromoform	1.1E-06	ug/m3	3.85E-03	mg/kg/day	B2	IRIS	7/21/2005
Chloroform	2.3E-05	ug/m3	8.10E-02	mg/kg/day	B2	IRIS	2/2/2005
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	5.7E-06	ug/m3	2.10E-02	mg/kg/day	C	Other EPA Document	4/1/1987
Toluene	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (TCE)	1.1E-04	ug/m3	4.00E-01	mg/kg/day	B2	NCEA	10/1/2000
Vinyl Chloride	8.6E-06	ug/m3	3.10E-02	mg/kg/day	A	IRIS	7/21/2005
Xylene, m/p-	NA	NA	NA	NA	NA	NA	NA
Xylene, o-	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	NA	NA	NA	NA	NA	NA	NA
1,1'-Biphenyl	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene (p-)	6.3E-06	ug/m3	2.20E-02	mg/kg/day	C	NCEA	7/1/1997
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-Cresol)	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol (p-Cresol)	NA	NA	NA	NA	NA	NA	NA

TABLE 6.2
CANCER TOXICITY DATA -- INHALATION
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s)
Acetophenone	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP)	NA	NA	1.40E-02	mg/kg/day	D	RE	4/26/2000
Fluorene	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	7.30E-01	mg/kg/day	D	RE	NA
Benzo(a)pyrene	8.9E-04	ug/m3	7.30E+00	mg/kg/day	B2	RE	4/26/2000
Benzo(b)fluoranthene	NA	NA	7.30E-01	mg/kg/day	B2	RE	NA
Benzo(k)fluoranthene	NA	NA	7.30E-02	mg/kg/day	B2	RE	NA
Carbazole	NA	NA	2.00E-02	mg/kg/day	D	RE	NA
Chrysene	NA	NA	7.30E-03	mg/kg/day	B2	RE	9/20/2002
Dibenz(a,h)anthracene	NA	NA	7.30E+00	mg/kg/day	D	RE	NA
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	7.30E-01	mg/kg/day	B2	RE	9/20/2002
Naphthalene	NA	NA	NA	NA	NA	NA	NA
Arsenic	4.3E-03	ug/m3	1.51E+01	mg/kg/day	A	IRIS	2/2/2005
Cadmium	1.8E-03	ug/m3	6.30E+00	mg/kg/day	B1	IRIS	2/2/2005

Notes:

EPA Group:
- A - Human carcinogen
- B1 - Probable human carcinogen - indicates that limited human data are available
- B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans
- C - Possible human carcinogen
- D - Not classifiable as a human carcinogen
- E - Evidence of noncarcinogenicity

Sources:

IRIS = Integrated Risk Information System
NCEA = National Center for Environmental Assessment, USEPA
RE = Region 9 Route Extrapolation

NA = Not Applicable

Weight of Evidence:
- Known/Likely (EPA classes A, B1, B2, C)
- Cannot be Determined (EPA class D)
- Not Likely (EPA class E)

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current
Receptor Population: Military Base Personnel
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Surface Soil	Ingestion													
				1,4-Dichlorobenzene (p-)	1.57E+00	mg/kg	8.8E-08	mg/kg-day	2.4E-02	1/(mg/kg-day)	2.1E-09	1.5E-06	mg/kg-day	3.0E-02	mg/kg-day	5.1E-05
				2-Hexanone (MBK)	1.14E+00	mg/kg	6.4E-08	mg/kg-day	NA	--	--	1.1E-06	mg/kg-day	NA	--	--
				Acetophenone	2.12E-01	mg/kg	1.2E-08	mg/kg-day	NA	--	--	2.1E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.06E+00	mg/kg	5.9E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.3E-08	1.0E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.23E+00	mg/kg	6.9E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	5.0E-07	1.2E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	1.44E+00	mg/kg	8.1E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	5.9E-08	1.4E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.63E+00	mg/kg	9.1E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	6.7E-09	1.6E-06	mg/kg-day	NA	--	--
				Carbazole	2.08E+00	mg/kg	1.2E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.3E-09	2.0E-06	mg/kg-day	NA	--	--
				Chrysene	1.61E+00	mg/kg	9.0E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	6.6E-10	1.6E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	6.39E-01	mg/kg	3.6E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.6E-07	6.2E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.15E+00	mg/kg	6.4E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.7E-08	1.1E-06	mg/kg-day	NA	--	--
				Arsenic	3.09E+00	mg/kg	1.7E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	2.6E-07	3.0E-06	mg/kg-day	3.0E-04	mg/kg-day	1.0E-02
				Cadmium	4.98E+00	mg/kg	2.8E-07	mg/kg-day	NA	--	--	4.9E-06	mg/kg-day	5.0E-04	mg/kg-day	9.7E-03
			Ingestion Total								1.2E-06					2.0E-02
			Dermal													
				1,4-Dichlorobenzene (p-)	1.57E+00	mg/kg	5.8E-09	mg/kg-day	2.4E-02	1/(mg/kg-day)	1.4E-10	1.0E-07	mg/kg-day	3.0E-02	mg/kg-day	3.4E-06
				2-Hexanone (MBK)	1.14E+00	mg/kg	4.2E-09	mg/kg-day	NA	--	--	7.4E-08	mg/kg-day	NA	--	--
				Acetophenone	2.12E-01	mg/kg	7.8E-09	mg/kg-day	NA	--	--	1.4E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.06E+00	mg/kg	5.1E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.7E-08	8.9E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.23E+00	mg/kg	5.9E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.3E-07	1.0E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	1.44E+00	mg/kg	6.9E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	5.0E-08	1.2E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.63E+00	mg/kg	7.8E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	5.7E-09	1.4E-06	mg/kg-day	NA	--	--
				Carbazole	2.08E+00	mg/kg	1.0E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.0E-09	1.7E-06	mg/kg-day	NA	--	--
				Chrysene	1.61E+00	mg/kg	7.7E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	5.6E-10	1.4E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	6.39E-01	mg/kg	3.1E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.2E-07	5.4E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.15E+00	mg/kg	5.5E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.0E-08	9.7E-07	mg/kg-day	NA	--	--
				Arsenic	3.09E+00	mg/kg	3.4E-08	mg/kg-day	1.5E+00	1/(mg/kg-day)	5.1E-08	6.0E-07	mg/kg-day	3.0E-04	mg/kg-day	2.0E-03
				Cadmium	4.98E+00	mg/kg	1.8E-09	mg/kg-day	NA	--	--	3.2E-08	mg/kg-day	2.5E-05	mg/kg-day	1.3E-03
			Dermal Total								8.4E-07					3.3E-03
		Exposure Point Total									2.0E-06					2.3E-02
	Exposure Medium Total										2.0E-06					2.3E-02
	Air	Fugative Dust	Inhalation													
				1,4-Dichlorobenzene (p-)	1.57E+00	mg/kg	3.0E-07	mg/kg-day	2.2E-02	1/(mg/kg-day)	6.6E-09	5.2E-06	mg/kg-day	2.3E-01	mg/kg-day	2.3E-05
				2-Hexanone (MBK)	1.14E+00	mg/kg	2.1E-12	mg/kg-day	NA	--	--	3.7E-11	mg/kg-day	NA	--	--
				Acetophenone	2.12E-01	mg/kg	2.0E-09	mg/kg-day	NA	--	--	3.6E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.06E+00	mg/kg	1.5E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.1E-10	2.6E-09	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.23E+00	mg/kg	8.8E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	6.4E-10	1.5E-09	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	1.44E+00	mg/kg	1.7E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.2E-10	3.0E-09	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.63E+00	mg/kg	9.2E-11	mg/kg-day	7.3E-02	1/(mg/kg-day)	6.7E-12	1.6E-09	mg/kg-day	NA	--	--
				Carbazole	2.08E+00	mg/kg	1.5E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	3.0E-11	2.6E-08	mg/kg-day	NA	--	--
				Chrysene	1.61E+00	mg/kg	1.5E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.1E-11	2.5E-08	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	6.39E-01	mg/kg	1.9E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.4E-10	3.4E-10	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.15E+00	mg/kg	3.7E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.7E-11	6.4E-10	mg/kg-day	NA	--	--
				Arsenic	3.09E+00	mg/kg	5.8E-12	mg/kg-day	1.5E+01	1/(mg/kg-day)	8.7E-11	1.0E-10	mg/kg-day	NA	--	--
				Cadmium	4.98E+00	mg/kg	9.3E-12	mg/kg-day	6.3E+00	1/(mg/kg-day)	5.8E-11	1.6E-10	mg/kg-day	NA	--	--
			Inhalation Total								7.8E-09					2.3E-05
		Exposure Point Total									7.8E-09					2.3E-05
	Exposure Medium Total										7.8E-09					2.3E-05
Surface Soil Total											2.0E-06					2.3E-02
											Total of Receptor Risks Across All Media					
											2.0E-06	Total of Receptor Hazards Across All Media				2.3E-02

TABLE 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Surface Soil	Ingestion													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	5.7E-08	mg/kg-day	2.4E-02	1/(mg/kg-day)	1.4E-09	4.0E-07	mg/kg-day	3.0E-02	mg/kg-day	1.3E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	4.9E-08	mg/kg-day	NA	--	--	3.4E-07	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.5E-06	mg/kg-day	NA	--	--	1.1E-05	mg/kg-day	2.0E-02	mg/kg-day	5.3E-04
				Acetophenone	1.30E+00	mg/kg	5.9E-08	mg/kg-day	NA	--	--	4.1E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	6.2E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.5E-08	4.3E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	6.6E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.9E-07	4.7E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.3E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	9.8E-08	9.4E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	7.9E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	5.8E-09	5.6E-07	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	1.8E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	3.6E-09	1.3E-06	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	7.9E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	5.7E-10	5.5E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	5.0E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.7E-07	3.5E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	6.4E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.7E-08	4.5E-07	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	6.4E-07	mg/kg-day	NA	--	--	4.5E-06	mg/kg-day	2.0E-02	mg/kg-day	2.2E-04
				Arsenic	2.69E+00	mg/kg	1.2E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.8E-07	8.5E-07	mg/kg-day	3.0E-04	mg/kg-day	2.8E-03
				Cadmium	5.49E+00	mg/kg	2.5E-07	mg/kg-day	NA	--	--	1.7E-06	mg/kg-day	5.0E-04	mg/kg-day	3.5E-03
			Ingestion Total								1.2E-06					7.1E-03
			Dermal													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	6.0E-09	mg/kg-day	2.4E-02	1/(mg/kg-day)	1.4E-10	4.2E-08	mg/kg-day	3.0E-02	mg/kg-day	1.4E-06
				2-Hexanone (MBK)	1.08E+00	mg/kg	5.2E-09	mg/kg-day	NA	--	--	3.6E-08	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.6E-07	mg/kg-day	NA	--	--	1.1E-06	mg/kg-day	2.0E-02	mg/kg-day	5.6E-05
				Acetophenone	1.30E+00	mg/kg	6.2E-08	mg/kg-day	NA	--	--	4.3E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	8.5E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	6.2E-08	5.9E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	9.2E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	6.7E-07	6.4E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.9E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.4E-07	1.3E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	1.1E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.0E-09	7.7E-07	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	2.5E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	4.9E-09	1.7E-06	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	1.1E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	7.9E-10	7.6E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	7.0E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	5.1E-07	4.9E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	8.8E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	6.4E-08	6.2E-07	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	6.8E-08	mg/kg-day	NA	--	--	4.7E-07	mg/kg-day	2.0E-02	mg/kg-day	2.4E-05
				Arsenic	2.69E+00	mg/kg	3.9E-08	mg/kg-day	1.5E+00	1/(mg/kg-day)	5.8E-08	2.7E-07	mg/kg-day	3.0E-04	mg/kg-day	9.0E-04
				Cadmium	5.49E+00	mg/kg	2.6E-09	mg/kg-day	NA	--	--	1.8E-08	mg/kg-day	2.5E-05	mg/kg-day	7.4E-04
			Dermal Total								1.5E-06					1.7E-03
		Exposure Point Total									2.7E-06					8.8E-03
	Exposure Medium Total										2.7E-06					8.8E-03
	Air	Fugative Dust	Inhalation													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	1.0E-07	mg/kg-day	2.2E-02	1/(mg/kg-day)	2.2E-09	7.1E-07	mg/kg-day	2.3E-01	mg/kg-day	3.1E-06
				2-Hexanone (MBK)	1.08E+00	mg/kg	8.6E-13	mg/kg-day	NA	--	--	6.0E-12	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	8.1E-07	mg/kg-day	NA	--	--	5.7E-06	mg/kg-day	8.6E-04	mg/kg-day	6.6E-03
				Acetophenone	1.30E+00	mg/kg	5.3E-09	mg/kg-day	NA	--	--	3.7E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	8.0E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	5.8E-11	5.6E-10	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	4.5E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.3E-10	3.2E-10	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.5E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.1E-10	1.1E-09	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	4.2E-11	mg/kg-day	7.3E-02	1/(mg/kg-day)	3.1E-12	3.0E-10	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	1.2E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.4E-11	8.4E-09	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	6.7E-10	mg/kg-day	7.3E-03	1/(mg/kg-day)	4.9E-12	4.7E-09	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	1.4E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.1E-10	1.0E-10	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	1.9E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.4E-11	1.3E-10	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	8.1E-07	mg/kg-day	NA	--	--	2.4E-06	mg/kg-day	8.6E-04	mg/kg-day	2.8E-03
				Arsenic	2.69E+00	mg/kg	2.1E-12	mg/kg-day	1.5E+01	1/(mg/kg-day)	3.2E-11	1.5E-11	mg/kg-day	NA	--	--
				Cadmium	5.49E+00	mg/kg	4.4E-12	mg/kg-day	6.3E+00	1/(mg/kg-day)	2.8E-11	3.1E-11	mg/kg-day	NA	--	--
			Inhalation Total								2.9E-09					9.4E-03
		Exposure Point Total									2.9E-09					9.4E-03
	Exposure Medium Total										2.9E-09					9.4E-03
Surface Soil Total											2.8E-06					1.8E-02
											Total of Receptor Risks Across All Media					2.8E-06	Total of Receptor Hazards Across All Media				1.8E-02

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Surface Soil	Ingestion													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	5.9E-07	mg/kg-day	2.4E-02	1/(mg/kg-day)	1.4E-08	1.7E-06	mg/kg-day	3.0E-02	mg/kg-day	5.7E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	5.1E-07	mg/kg-day	NA	--	--	1.5E-06	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.6E-05	mg/kg-day	NA	--	--	4.6E-05	mg/kg-day	2.0E-02	mg/kg-day	2.3E-03
				Acetophenone	1.30E+00	mg/kg	6.1E-07	mg/kg-day	NA	--	--	1.8E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	6.4E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.7E-07	1.9E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	6.9E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	5.0E-06	2.0E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.4E-06	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.0E-06	4.1E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	8.2E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	6.0E-08	2.4E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	1.9E-06	mg/kg-day	2.0E-02	1/(mg/kg-day)	3.7E-08	5.4E-06	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	8.2E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	6.0E-09	2.4E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	5.2E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.8E-06	1.5E-06	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	6.6E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.8E-07	1.9E-06	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	6.6E-06	mg/kg-day	NA	--	--	1.9E-05	mg/kg-day	2.0E-02	mg/kg-day	9.7E-04
				Arsenic	2.69E+00	mg/kg	1.3E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.9E-06	3.7E-06	mg/kg-day	3.0E-04	mg/kg-day	1.2E-02
				Cadmium	5.49E+00	mg/kg	2.6E-06	mg/kg-day	NA	--	--	7.5E-06	mg/kg-day	5.0E-04	mg/kg-day	1.5E-02
			Ingestion Total								1.3E-05					3.1E-02
			Dermal													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	2.3E-08	mg/kg-day	2.4E-02	1/(mg/kg-day)	5.6E-10	6.8E-08	mg/kg-day	3.0E-02	mg/kg-day	2.3E-06
				2-Hexanone (MBK)	1.08E+00	mg/kg	2.0E-08	mg/kg-day	NA	--	--	5.9E-08	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	6.3E-07	mg/kg-day	NA	--	--	1.8E-06	mg/kg-day	2.0E-02	mg/kg-day	9.1E-05
				Acetophenone	1.30E+00	mg/kg	2.4E-07	mg/kg-day	NA	--	--	7.1E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	3.3E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.4E-07	9.7E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	3.6E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.6E-06	1.0E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	7.3E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	5.3E-07	2.1E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	4.3E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	3.1E-08	1.2E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	9.6E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.9E-08	2.8E-06	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	4.2E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	3.1E-09	1.2E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	2.7E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.0E-06	7.9E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	3.4E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.5E-07	1.0E-06	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	2.6E-07	mg/kg-day	NA	--	--	7.7E-07	mg/kg-day	2.0E-02	mg/kg-day	3.9E-05
				Arsenic	2.69E+00	mg/kg	1.5E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	2.3E-07	4.4E-07	mg/kg-day	3.0E-04	mg/kg-day	1.5E-03
				Cadmium	5.49E+00	mg/kg	1.0E-08	mg/kg-day	NA	--	--	3.0E-08	mg/kg-day	2.5E-05	mg/kg-day	1.2E-03
			Dermal Total								5.9E-06					2.8E-03
		Exposure Point Total									1.9E-05					3.3E-02
	Exposure Medium Total										1.9E-05					3.3E-02
	Air	Fugative Dust	Inhalation													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	3.7E-07	mg/kg-day	2.2E-02	1/(mg/kg-day)	8.2E-09	1.1E-06	mg/kg-day	2.3E-01	mg/kg-day	4.7E-06
				2-Hexanone (MBK)	1.08E+00	mg/kg	3.2E-12	mg/kg-day	NA	--	--	9.3E-12	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	3.0E-06	mg/kg-day	NA	--	--	8.7E-06	mg/kg-day	8.6E-04	mg/kg-day	1.0E-02
				Acetophenone	1.30E+00	mg/kg	2.0E-08	mg/kg-day	NA	--	--	5.7E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	2.9E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.2E-10	8.6E-10	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	1.7E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.2E-09	4.8E-10	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	5.6E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.1E-10	1.6E-09	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	1.6E-10	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.1E-11	4.5E-10	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	4.4E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	8.8E-11	1.3E-08	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	2.5E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.8E-11	7.2E-09	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	5.3E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.9E-10	1.6E-10	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	7.1E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	5.2E-11	2.1E-10	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.3E-06	mg/kg-day	NA	--	--	3.7E-06	mg/kg-day	8.6E-04	mg/kg-day	4.3E-03
				Arsenic	2.69E+00	mg/kg	7.9E-12	mg/kg-day	1.5E+01	1/(mg/kg-day)	1.2E-10	2.3E-11	mg/kg-day	NA	--	--
				Cadmium	5.49E+00	mg/kg	1.6E-11	mg/kg-day	6.3E+00	1/(mg/kg-day)	1.0E-10	4.7E-11	mg/kg-day	NA	--	--
			Inhalation Total								1.1E-08					1.4E-02
		Exposure Point Total									1.1E-08					1.4E-02
	Exposure Medium Total										1.1E-08					1.4E-02
Surface Soil Total											1.9E-05					4.8E-02

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Subsurface Soil	Ingestion													
				2-Hexanone (MBK)	3.23E-01	mg/kg	1.5E-07	mg/kg-day	NA	--	--	4.4E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	1.2E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	8.5E-08	3.4E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	1.1E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	8.0E-07	3.2E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	1.3E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	9.2E-08	3.7E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	1.2E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.6E-09	3.5E-07	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	1.0E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.0E-09	2.9E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	1.3E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	9.7E-10	3.9E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	1.0E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.3E-07	2.9E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	1.0E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.6E-08	3.0E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	3.0E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.5E-06	8.7E-06	mg/kg-day	3.0E-04	mg/kg-day	2.9E-02
			Ingestion Total								6.3E-06					2.9E-02
			Dermal													
				2-Hexanone (MBK)	3.23E-01	mg/kg	6.1E-09	mg/kg-day	NA	--	--	1.8E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	6.1E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.4E-08	1.8E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	5.7E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.2E-07	1.7E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	6.5E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.8E-08	1.9E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	6.1E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	4.5E-09	1.8E-07	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	5.2E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.0E-09	1.5E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	6.9E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	5.1E-10	2.0E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	5.2E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.8E-07	1.5E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	5.4E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.9E-08	1.6E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	3.6E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	5.3E-07	1.0E-06	mg/kg-day	3.0E-04	mg/kg-day	3.5E-03
			Dermal Total								1.5E-06					3.5E-03
		Exposure Point Total									7.7E-06					3.2E-02
	Exposure Medium Total										7.7E-06					3.2E-02
	Air	Fugative Dust	Inhalation													
				2-Hexanone (MBK)	3.23E-01	mg/kg	9.5E-13	mg/kg-day	NA	--	--	2.8E-12	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	5.4E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.9E-11	1.6E-10	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	2.6E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.9E-10	7.7E-11	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	5.0E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.6E-11	1.5E-10	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	2.2E-11	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.6E-12	6.5E-11	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	2.4E-10	mg/kg-day	2.0E-02	1/(mg/kg-day)	4.8E-12	6.9E-10	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	4.0E-10	mg/kg-day	7.3E-03	1/(mg/kg-day)	3.0E-12	1.2E-09	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	1.0E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.4E-11	3.0E-11	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	1.1E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	8.1E-12	3.2E-11	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	1.9E-11	mg/kg-day	1.5E+01	1/(mg/kg-day)	2.8E-10	5.4E-11	mg/kg-day	NA	--	--
			Inhalation Total								6.4E-10					--
		Exposure Point Total									6.4E-10					--
	Exposure Medium Total										6.4E-10					--
Subsurface Soil Total											7.7E-06					3.2E-02

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Shallow Groundwater	Shallow Groundwater	Tap	Ingestion													
				1,1-Dichloroethene	3.68E-03	mg/L	3.5E-05	mg/kg-day	NA	--	--	1.0E-04	mg/kg-day	5.0E-02	mg/kg-day	2.0E-03
				1,2,3-Trichlorobenzene	2.40E-03	mg/L	2.3E-05	mg/kg-day	NA	--	--	6.6E-05	mg/kg-day	1.0E-02	mg/kg-day	6.6E-03
				1,2,4-Trimethylbenzene	3.74E-03	mg/L	3.5E-05	mg/kg-day	NA	--	--	1.0E-04	mg/kg-day	5.0E-02	mg/kg-day	2.1E-03
				1,2-Dichloroethene (cis)	1.20E-01	mg/L	1.1E-03	mg/kg-day	NA	--	--	3.3E-03	mg/kg-day	1.0E-02	mg/kg-day	3.3E-01
				1,2-Dichloroethene (total)	1.75E-01	mg/L	1.6E-03	mg/kg-day	NA	--	--	4.8E-03	mg/kg-day	1.0E-02	mg/kg-day	4.8E-01
				1,2-Dichloroethene (trans)	3.09E-03	mg/L	2.9E-05	mg/kg-day	NA	--	--	8.5E-05	mg/kg-day	2.0E-02	mg/kg-day	4.2E-03
				1,2-Dichloropropane	3.00E-04	mg/L	2.8E-06	mg/kg-day	6.8E-02	1/(mg/kg-day)	1.9E-07	8.2E-06	mg/kg-day	1.1E-03	mg/kg-day	7.5E-03
				1,3,5-Trimethylbenzene	2.73E-03	mg/L	2.6E-05	mg/kg-day	NA	--	--	7.5E-05	mg/kg-day	5.0E-02	mg/kg-day	1.5E-03
				1,4-Dichlorobenzene (p-)	2.00E-03	mg/L	1.9E-05	mg/kg-day	2.4E-02	1/(mg/kg-day)	4.5E-07	5.5E-05	mg/kg-day	3.0E-02	mg/kg-day	1.8E-03
				2-Chlorotoluene	2.25E-03	mg/L	2.1E-05	mg/kg-day	NA	--	--	6.2E-05	mg/kg-day	2.0E-02	mg/kg-day	3.1E-03
				4-Isopropyltoluene	5.47E-03	mg/L	5.1E-05	mg/kg-day	NA	--	--	1.5E-04	mg/kg-day	NA	--	--
				Benzene	9.82E-03	mg/L	9.2E-05	mg/kg-day	5.5E-02	1/(mg/kg-day)	5.1E-06	2.7E-04	mg/kg-day	4.0E-03	mg/kg-day	6.7E-02
				Bromodichloromethane	2.00E-03	mg/L	1.9E-05	mg/kg-day	6.2E-02	1/(mg/kg-day)	1.2E-06	5.5E-05	mg/kg-day	2.0E-02	mg/kg-day	2.7E-03
				Bromoform	2.77E-03	mg/L	2.6E-05	mg/kg-day	7.9E-03	1/(mg/kg-day)	2.1E-07	7.6E-05	mg/kg-day	2.0E-02	mg/kg-day	3.8E-03
				Chloroform	4.40E-04	mg/L	4.1E-06	mg/kg-day	NA	--	--	1.2E-05	mg/kg-day	1.0E-02	mg/kg-day	1.2E-03
				Ethylbenzene	7.07E-03	mg/L	6.6E-05	mg/kg-day	NA	--	--	1.9E-04	mg/kg-day	1.0E-01	mg/kg-day	1.9E-03
				Isopropylbenzene (Cumen	4.33E-03	mg/L	4.1E-05	mg/kg-day	NA	--	--	1.2E-04	mg/kg-day	1.0E-01	mg/kg-day	1.2E-03
				Naphthalene	1.65E-01	mg/L	1.5E-03	mg/kg-day	NA	--	--	4.5E-03	mg/kg-day	2.0E-02	mg/kg-day	2.3E-01
				n-Butylbenzene	4.20E-03	mg/L	3.9E-05	mg/kg-day	NA	--	--	1.2E-04	mg/kg-day	4.0E-02	mg/kg-day	2.9E-03
				Tetrachloroethene (PCE)	2.64E-03	mg/L	2.5E-05	mg/kg-day	5.4E-01	1/(mg/kg-day)	1.3E-05	7.2E-05	mg/kg-day	1.0E-02	mg/kg-day	7.2E-03
				Toluene	1.11E-02	mg/L	1.0E-04	mg/kg-day	NA	--	--	3.1E-04	mg/kg-day	2.0E-01	mg/kg-day	1.5E-03
				Trichloroethene (TCE)	3.18E-01	mg/L	3.0E-03	mg/kg-day	4.0E-01	1/(mg/kg-day)	**1.2E-03**	8.7E-03	mg/kg-day	3.0E-04	mg/kg-day	**2.9E+01**
				Vinyl Chloride	1.56E-02	mg/L	1.5E-04	mg/kg-day	1.5E+00	1/(mg/kg-day)	**2.2E-04**	4.3E-04	mg/kg-day	3.0E-03	mg/kg-day	1.4E-01
				Xylene, m/p-	1.01E-02	mg/L	9.4E-05	mg/kg-day	NA	--	--	2.8E-04	mg/kg-day	2.0E-01	mg/kg-day	1.4E-03
				Xylene, o-	5.34E-03	mg/L	5.0E-05	mg/kg-day	NA	--	--	1.5E-04	mg/kg-day	2.0E-01	mg/kg-day	7.3E-04
				Xylenes, total	9.56E-03	mg/L	9.0E-05	mg/kg-day	NA	--	--	2.6E-04	mg/kg-day	2.0E-01	mg/kg-day	1.3E-03
				1,1'-Biphenyl	8.87E-03	mg/L	8.3E-05	mg/kg-day	NA	--	--	2.4E-04	mg/kg-day	5.0E-02	mg/kg-day	4.9E-03
				2,4-Dimethylphenol	6.38E-02	mg/L	6.0E-04	mg/kg-day	NA	--	--	1.7E-03	mg/kg-day	2.0E-02	mg/kg-day	8.7E-02
				2-Methylnaphthalene	4.57E-02	mg/L	4.3E-04	mg/kg-day	NA	--	--	1.3E-03	mg/kg-day	4.0E-03	mg/kg-day	3.1E-01
				2-Methylphenol (o-Cresol	2.66E-02	mg/L	2.5E-04	mg/kg-day	NA	--	--	7.3E-04	mg/kg-day	5.0E-02	mg/kg-day	1.5E-02
				4-Methylphenol (p-Cresol	1.81E-02	mg/L	1.7E-04	mg/kg-day	NA	--	--	5.0E-04	mg/kg-day	5.0E-03	mg/kg-day	9.9E-02
				Acenaphthene	3.08E-02	mg/L	2.9E-04	mg/kg-day	NA	--	--	8.4E-04	mg/kg-day	6.0E-02	mg/kg-day	1.4E-02
				Bis(2-ethylhexyl) Phthalat	5.50E-03	mg/L	5.2E-05	mg/kg-day	1.4E-02	1/(mg/kg-day)	7.2E-07	1.5E-04	mg/kg-day	2.0E-02	mg/kg-day	7.5E-03
				Carbazole	1.01E-02	mg/L	9.5E-05	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.9E-06	2.8E-04	mg/kg-day	NA	--	--
				Dibenzofuran	1.31E-02	mg/L	1.2E-04	mg/kg-day	NA	--	--	3.6E-04	mg/kg-day	2.0E-03	mg/kg-day	1.8E-01
				Fluorene	1.07E-02	mg/L	1.0E-04	mg/kg-day	NA	--	--	2.9E-04	mg/kg-day	4.0E-02	mg/kg-day	7.3E-03
				Naphthalene	1.65E-01	mg/L	1.5E-03	mg/kg-day	NA	--	--	4.5E-03	mg/kg-day	2.0E-02	mg/kg-day	2.3E-01
			Ingestion Total								**1.4E-03**					**3.1E+01**

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Shallow Groundwater (Cont)	Shallow Groundwater (Cont)	Tap (Cont)	Dermal	1,1-Dichloroethene	3.68E-03	mg/L	4.8E-06	mg/kg-day	NA	--	--	1.4E-05	mg/kg-day	5.0E-02	mg/kg-day	2.8E-04
				1,2,3-Trichlorobenzene	2.40E-03	mg/L	3.2E-05	mg/kg-day	NA	--	--	9.4E-05	mg/kg-day	1.0E-02	mg/kg-day	9.4E-03
				1,2,4-Trimethylbenzene	3.74E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				1,2-Dichloroethene (cis)	1.20E-01	mg/L	1.0E-04	mg/kg-day	NA	--	--	2.9E-04	mg/kg-day	1.0E-02	mg/kg-day	2.9E-02
				1,2-Dichloroethene (total)	1.75E-01	mg/L	1.5E-04	mg/kg-day	NA	--	--	4.3E-04	mg/kg-day	1.0E-02	mg/kg-day	4.3E-02
				1,2-Dichloroethene (trans)	3.09E-03	mg/L	3.6E-06	mg/kg-day	NA	--	--	1.1E-05	mg/kg-day	2.0E-02	mg/kg-day	5.3E-04
				1,2-Dichloropropane	3.00E-04	mg/L	2.8E-07	mg/kg-day	6.8E-02	1/(mg/kg-day)	1.9E-08	8.2E-07	mg/kg-day	1.1E-03	mg/kg-day	7.5E-04
				1,3,5-Trimethylbenzene	2.73E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				1,4-Dichlorobenzene (p-)	2.00E-03	mg/L	1.3E-05	mg/kg-day	2.4E-02	1/(mg/kg-day)	3.0E-07	3.7E-05	mg/kg-day	3.0E-02	mg/kg-day	1.2E-03
				2-Chlorotoluene	2.25E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	2.0E-02	mg/kg-day	--
				4-Isopropyltoluene	5.47E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	NA	--	--
				Benzene	9.82E-03	mg/L	1.4E-05	mg/kg-day	5.5E-02	1/(mg/kg-day)	7.8E-07	4.1E-05	mg/kg-day	4.0E-03	mg/kg-day	1.0E-02
				Bromodichloromethane	2.00E-03	mg/L	1.5E-06	mg/kg-day	6.2E-02	1/(mg/kg-day)	9.5E-08	4.5E-06	mg/kg-day	2.0E-02	mg/kg-day	2.2E-04
				Bromoform	2.77E-03	mg/L	1.8E-06	mg/kg-day	7.9E-03	1/(mg/kg-day)	1.4E-08	5.3E-06	mg/kg-day	2.0E-02	mg/kg-day	2.6E-04
				Chloroform	4.40E-04	mg/L	3.8E-07	mg/kg-day	NA	--	--	1.1E-06	mg/kg-day	1.0E-02	mg/kg-day	1.1E-04
				Ethylbenzene	7.07E-03	mg/L	4.0E-05	mg/kg-day	NA	--	--	1.2E-04	mg/kg-day	1.0E-01	mg/kg-day	1.2E-03
				Isopropylbenzene (Cumen	4.33E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	1.0E-01	mg/kg-day	--
				Naphthalene	1.65E-01	mg/L	1.0E-03	mg/kg-day	NA	--	--	3.0E-03	mg/kg-day	2.0E-02	mg/kg-day	1.5E-01
				n-Butylbenzene	4.20E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	4.0E-02	mg/kg-day	--
				Tetrachloroethene (PCE)	2.64E-03	mg/L	1.5E-05	mg/kg-day	5.4E-01	1/(mg/kg-day)	8.0E-06	4.3E-05	mg/kg-day	1.0E-02	mg/kg-day	4.3E-03
				Toluene	1.11E-02	mg/L	0.0E+00	mg/kg-day	NA	--	--	0.0E+00	mg/kg-day	2.0E-01	mg/kg-day	0.0E+00
				Trichloroethene (TCE)	3.18E-01	mg/L	5.2E-04	mg/kg-day	4.0E-01	1/(mg/kg-day)	**2.1E-04**	1.5E-03	mg/kg-day	3.0E-04	mg/kg-day	**5.0E+00**
				Vinyl Chloride	1.56E-02	mg/L	7.9E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.2E-05	2.3E-05	mg/kg-day	3.0E-03	mg/kg-day	7.6E-03
				Xylene, m/p-	1.01E-02	mg/L	6.1E-05	mg/kg-day	NA	--	--	1.8E-04	mg/kg-day	2.0E-01	mg/kg-day	8.8E-04
				Xylene, o-	5.34E-03	mg/L	2.8E-05	mg/kg-day	NA	--	--	8.3E-05	mg/kg-day	2.0E-01	mg/kg-day	4.2E-04
				Xylenes, total	9.56E-03	mg/L	3.3E-06	mg/kg-day	NA	--	--	9.6E-06	mg/kg-day	2.0E-01	mg/kg-day	4.8E-05
				1,1'-Biphenyl	8.87E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				2,4-Dimethylphenol	6.38E-02	mg/L	9.0E-05	mg/kg-day	NA	--	--	2.6E-04	mg/kg-day	2.0E-02	mg/kg-day	1.3E-02
				2-Methylnaphthalene	4.57E-02	mg/L	5.3E-04	mg/kg-day	NA	--	--	1.5E-03	mg/kg-day	4.0E-03	mg/kg-day	3.9E-01
				2-Methylphenol (o-Cresol	2.66E-02	mg/L	2.4E-05	mg/kg-day	NA	--	--	7.0E-05	mg/kg-day	5.0E-02	mg/kg-day	1.4E-03
				4-Methylphenol (p-Cresol	1.81E-02	mg/L	1.6E-05	mg/kg-day	NA	--	--	4.8E-05	mg/kg-day	5.0E-03	mg/kg-day	9.5E-03
				Acenaphthene	3.08E-02	mg/L	4.8E-04	mg/kg-day	NA	--	--	1.4E-03	mg/kg-day	6.0E-02	mg/kg-day	2.3E-02
				Bis(2-ethylhexyl) Phthalat	5.50E-03	mg/L	1.0E-04	mg/kg-day	1.4E-02	1/(mg/kg-day)	1.4E-06	2.9E-04	mg/kg-day	2.0E-02	mg/kg-day	1.5E-02
				Carbazole	1.01E-02	mg/L	9.0E-05	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.8E-06	2.6E-04	mg/kg-day	NA	--	--
				Dibenzofuran	1.31E-02	mg/L	2.1E-04	mg/kg-day	NA	--	--	6.2E-04	mg/kg-day	2.0E-03	mg/kg-day	3.1E-01
				Fluorene	1.07E-02	mg/L	2.5E-04	mg/kg-day	NA	--	--	7.2E-04	mg/kg-day	4.0E-02	mg/kg-day	1.8E-02
				Naphthalene	1.65E-01	mg/L	1.0E-03	mg/kg-day	NA	--	--	3.0E-03	mg/kg-day	2.0E-02	mg/kg-day	1.5E-01
			Dermal Total								**2.3E-04**					**6.2E+00**
		Exposure Point Total									**1.7E-03**					**3.7E+01**
	Exposure Medium Total										**1.7E-03**					**3.7E+01**

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Shallow Groundwater (Cont)	Air	Water Vapors from Showerhead	Inhalation	1,1-Dichloroethene	3.68E-03	mg/L	3.5E-05	mg/kg-day	NA	--	--	1.0E-04	mg/kg-day	5.0E-02	mg/kg-day	2.0E-03
				1,2,3-Trichlorobenzene	2.40E-03	mg/L	2.3E-05	mg/kg-day	NA	--	--	6.6E-05	mg/kg-day	1.0E-02	mg/kg-day	6.6E-03
				1,2,4-Trimethylbenzene	3.74E-03	mg/L	3.5E-05	mg/kg-day	NA	--	--	1.0E-04	mg/kg-day	5.0E-02	mg/kg-day	2.1E-03
				1,2-Dichloroethene (cis)	1.20E-01	mg/L	1.1E-03	mg/kg-day	NA	--	--	3.3E-03	mg/kg-day	1.0E-02	mg/kg-day	3.3E-01
				1,2-Dichloroethene (total)	1.75E-01	mg/L	1.6E-03	mg/kg-day	NA	--	--	4.8E-03	mg/kg-day	1.0E-02	mg/kg-day	4.8E-01
				1,2-Dichloroethene (trans)	3.09E-03	mg/L	2.9E-05	mg/kg-day	NA	--	--	8.5E-05	mg/kg-day	2.0E-02	mg/kg-day	4.2E-03
				1,2-Dichloropropane	3.00E-04	mg/L	2.8E-06	mg/kg-day	6.8E-02	1/(mg/kg-day)	1.9E-07	8.2E-06	mg/kg-day	1.1E-03	mg/kg-day	7.5E-03
				1,3,5-Trimethylbenzene	2.73E-03	mg/L	2.6E-05	mg/kg-day	NA	--	--	7.5E-05	mg/kg-day	5.0E-02	mg/kg-day	1.5E-03
				1,4-Dichlorobenzene (p-)	2.00E-03	mg/L	1.9E-05	mg/kg-day	2.4E-02	1/(mg/kg-day)	4.5E-07	5.5E-05	mg/kg-day	3.0E-02	mg/kg-day	1.8E-03
				2-Chlorotoluene	2.25E-03	mg/L	2.1E-05	mg/kg-day	NA	--	--	6.2E-05	mg/kg-day	2.0E-02	mg/kg-day	3.1E-03
				4-Isopropyltoluene	5.47E-03	mg/L	5.1E-05	mg/kg-day	NA	--	--	1.5E-04	mg/kg-day	NA	--	--
				Benzene	9.82E-03	mg/L	9.2E-05	mg/kg-day	5.5E-02	1/(mg/kg-day)	5.1E-06	2.7E-04	mg/kg-day	4.0E-03	mg/kg-day	6.7E-02
				Bromodichloromethane	2.00E-03	mg/L	1.9E-05	mg/kg-day	6.2E-02	1/(mg/kg-day)	1.2E-06	5.5E-05	mg/kg-day	2.0E-02	mg/kg-day	2.7E-03
				Bromoform	2.77E-03	mg/L	2.6E-05	mg/kg-day	7.9E-03	1/(mg/kg-day)	2.1E-07	7.6E-05	mg/kg-day	2.0E-02	mg/kg-day	3.8E-03
				Chloroform	4.40E-04	mg/L	4.1E-06	mg/kg-day	NA	--	--	1.2E-05	mg/kg-day	1.0E-02	mg/kg-day	1.2E-03
				Ethylbenzene	7.07E-03	mg/L	6.6E-05	mg/kg-day	NA	--	--	1.9E-04	mg/kg-day	1.0E-01	mg/kg-day	1.9E-03
				Isopropylbenzene (Cumen	4.33E-03	mg/L	4.1E-05	mg/kg-day	NA	--	--	1.2E-04	mg/kg-day	1.0E-01	mg/kg-day	1.2E-03
				Naphthalene	1.65E-01	mg/L	1.5E-03	mg/kg-day	NA	--	--	4.5E-03	mg/kg-day	2.0E-02	mg/kg-day	2.3E-01
				n-Butylbenzene	4.20E-03	mg/L	3.9E-05	mg/kg-day	NA	--	--	1.2E-04	mg/kg-day	4.0E-02	mg/kg-day	2.9E-03
				Tetrachloroethene (PCE)	2.64E-03	mg/L	2.5E-05	mg/kg-day	5.4E-01	1/(mg/kg-day)	1.3E-05	7.2E-05	mg/kg-day	1.0E-02	mg/kg-day	7.2E-03
				Toluene	1.11E-02	mg/L	1.0E-04	mg/kg-day	NA	--	--	3.1E-04	mg/kg-day	2.0E-01	mg/kg-day	1.5E-03
				Trichloroethene (TCE)	3.18E-01	mg/L	3.0E-03	mg/kg-day	4.0E-01	1/(mg/kg-day)	**1.2E-03**	8.7E-03	mg/kg-day	3.0E-04	mg/kg-day	**2.9E+01**
				Vinyl Chloride	1.56E-02	mg/L	1.5E-04	mg/kg-day	1.5E+00	1/(mg/kg-day)	**2.2E-04**	4.3E-04	mg/kg-day	3.0E-03	mg/kg-day	1.4E-01
				Xylene, m/p-	1.01E-02	mg/L	9.4E-05	mg/kg-day	NA	--	--	2.8E-04	mg/kg-day	2.0E-01	mg/kg-day	1.4E-03
				Xylene, o-	5.34E-03	mg/L	5.0E-05	mg/kg-day	NA	--	--	1.5E-04	mg/kg-day	2.0E-01	mg/kg-day	7.3E-04
				Xylenes, total	9.56E-03	mg/L	9.0E-05	mg/kg-day	NA	--	--	2.6E-04	mg/kg-day	2.0E-01	mg/kg-day	1.3E-03
			Inhalation Total								**1.4E-03**					**3.0E+01**
		Exposure Point Total									**1.4E-03**					**3.0E+01**
	Exposure Medium Total										**1.4E-03**					**3.0E+01**
Shallow Groundwater Total											**3.1E-03**					**6.8E+01**
											Total of Receptor Risks Across All Media	**3.1E-03**		Total of Receptor Hazards Across All Media		**6.8E+01**

TABLE 7.3.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Surface Soil	Ingestion													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	5.7E-08	mg/kg-day	2.4E-02	1/(mg/kg-day)	1.4E-09	5.7E-07	mg/kg-day	3.0E-02	mg/kg-day	1.9E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	4.9E-08	mg/kg-day	NA	--	--	4.9E-07	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.5E-06	mg/kg-day	NA	--	--	1.5E-05	mg/kg-day	2.0E-02	mg/kg-day	7.6E-04
				Acetophenone	1.30E+00	mg/kg	5.9E-08	mg/kg-day	NA	--	--	5.9E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	6.2E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.5E-08	6.2E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	6.7E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.9E-07	6.7E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.4E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.0E-07	1.4E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	8.0E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	5.9E-09	8.0E-07	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	1.8E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	3.6E-09	1.8E-06	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	8.0E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	5.8E-10	8.0E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	5.1E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.7E-07	5.1E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	6.5E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.7E-08	6.5E-07	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	6.5E-07	mg/kg-day	NA	--	--	6.5E-06	mg/kg-day	2.0E-02	mg/kg-day	3.2E-04
				Arsenic	2.69E+00	mg/kg	1.2E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.8E-07	1.2E-06	mg/kg-day	3.0E-04	mg/kg-day	4.1E-03
				Cadmium	5.49E+00	mg/kg	2.5E-07	mg/kg-day	NA	--	--	2.5E-06	mg/kg-day	5.0E-04	mg/kg-day	5.0E-03
			Ingestion Total								1.3E-06					1.0E-02
			Dermal													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	6.5E-10	mg/kg-day	2.4E-02	1/(mg/kg-day)	1.6E-11	6.5E-09	mg/kg-day	3.0E-02	mg/kg-day	2.2E-07
				2-Hexanone (MBK)	1.08E+00	mg/kg	5.6E-10	mg/kg-day	NA	--	--	5.6E-09	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.7E-08	mg/kg-day	NA	--	--	1.7E-07	mg/kg-day	2.0E-02	mg/kg-day	8.7E-06
				Acetophenone	1.30E+00	mg/kg	6.8E-09	mg/kg-day	NA	--	--	6.8E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	9.2E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	6.7E-09	9.2E-08	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	1.0E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.3E-08	1.0E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	2.0E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.5E-08	2.0E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	1.2E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.7E-10	1.2E-07	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	2.7E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	5.4E-10	2.7E-07	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	1.2E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	8.6E-11	1.2E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	7.6E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	5.5E-08	7.6E-08	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	9.6E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.0E-09	9.6E-08	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	7.4E-09	mg/kg-day	NA	--	--	7.4E-08	mg/kg-day	2.0E-02	mg/kg-day	3.7E-06
				Arsenic	2.69E+00	mg/kg	4.2E-09	mg/kg-day	1.5E+00	1/(mg/kg-day)	6.3E-09	4.2E-08	mg/kg-day	3.0E-04	mg/kg-day	1.4E-04
				Cadmium	5.49E+00	mg/kg	2.9E-10	mg/kg-day	NA	--	--	2.9E-09	mg/kg-day	2.5E-05	mg/kg-day	1.1E-04
			Dermal Total								1.6E-07					2.7E-04
		Exposure Point Total									1.4E-06					1.1E-02
	Exposure Medium Total										1.4E-06					1.1E-02
	Air	Fugative Dust	Inhalation													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	7.3E-08	mg/kg-day	2.2E-02	1/(mg/kg-day)	1.6E-09	7.3E-07	mg/kg-day	2.3E-01	mg/kg-day	3.2E-06
				2-Hexanone (MBK)	1.08E+00	mg/kg	6.2E-13	mg/kg-day	NA	--	--	6.2E-12	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	5.8E-07	mg/kg-day	NA	--	--	5.8E-06	mg/kg-day	8.6E-04	mg/kg-day	6.8E-03
				Acetophenone	1.30E+00	mg/kg	3.8E-09	mg/kg-day	NA	--	--	3.8E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	5.8E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.2E-11	5.8E-10	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	3.2E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.4E-10	3.2E-10	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.1E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.9E-11	1.1E-09	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	3.0E-11	mg/kg-day	7.3E-02	1/(mg/kg-day)	2.2E-12	3.0E-10	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	8.6E-10	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.7E-11	8.6E-09	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	4.8E-10	mg/kg-day	7.3E-03	1/(mg/kg-day)	3.5E-12	4.8E-09	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	1.0E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.6E-11	1.0E-10	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	1.4E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.0E-11	1.4E-10	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	5.8E-07	mg/kg-day	NA	--	--	2.5E-06	mg/kg-day	8.6E-04	mg/kg-day	2.9E-03
				Arsenic	2.69E+00	mg/kg	1.5E-12	mg/kg-day	1.5E+01	1/(mg/kg-day)	2.3E-11	1.5E-11	mg/kg-day	NA	--	--
				Cadmium	5.49E+00	mg/kg	3.1E-12	mg/kg-day	6.3E+00	1/(mg/kg-day)	2.0E-11	3.1E-11	mg/kg-day	NA	--	--
			Inhalation Total								2.1E-09					9.7E-03
		Exposure Point Total									2.1E-09					9.7E-03
	Exposure Medium Total										2.1E-09					9.7E-03
Surface Soil Total											1.4E-06					2.0E-02

TABLE 7.3.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Subsurface Soil	Ingestion													
				2-Hexanone (MBK)	3.23E-01	mg/kg	1.5E-08	mg/kg-day	NA	--	--	1.5E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	1.1E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	8.3E-09	1.1E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	1.1E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.8E-08	1.1E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	1.2E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	9.0E-09	1.2E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	1.2E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.4E-10	1.2E-07	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	9.7E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.9E-10	9.7E-08	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	9.5E-11	1.3E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	9.7E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.1E-08	9.7E-08	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	1.0E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.4E-09	1.0E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	2.9E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.4E-07	2.9E-06	mg/kg-day	3.0E-04	mg/kg-day	9.7E-03
			Ingestion Total								6.1E-07					9.7E-03
			Dermal													
				2-Hexanone (MBK)	3.23E-01	mg/kg	1.2E-09	mg/kg-day	NA	--	--	1.2E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	1.2E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	8.6E-09	1.2E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	1.1E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	8.1E-08	1.1E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	9.3E-09	1.3E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	1.2E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.7E-10	1.2E-07	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	1.0E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.0E-10	1.0E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	9.9E-11	1.3E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	1.0E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.4E-08	1.0E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	1.0E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.6E-09	1.0E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	7.0E-08	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.0E-07	7.0E-07	mg/kg-day	3.0E-04	mg/kg-day	2.3E-03
			Dermal Total								2.9E-07					2.3E-03
		Exposure Point Total									9.0E-07					1.2E-02
	Exposure Medium Total										9.0E-07					1.2E-02
	Air	Fugative Dust	Inhalation													
				2-Hexanone (MBK)	3.23E-01	mg/kg	1.8E-13	mg/kg-day	NA	--	--	1.8E-12	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	1.1E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.7E-12	1.1E-10	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	5.1E-12	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.8E-11	5.1E-11	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	9.7E-12	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.1E-12	9.7E-11	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	4.4E-12	mg/kg-day	7.3E-02	1/(mg/kg-day)	3.2E-13	4.4E-11	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	4.6E-11	mg/kg-day	2.0E-02	1/(mg/kg-day)	9.3E-13	4.6E-10	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	7.9E-11	mg/kg-day	7.3E-03	1/(mg/kg-day)	5.8E-13	7.9E-10	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	2.0E-12	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.4E-11	2.0E-11	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	2.2E-12	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.6E-12	2.2E-11	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	3.6E-12	mg/kg-day	1.5E+01	1/(mg/kg-day)	5.5E-11	3.6E-11	mg/kg-day	NA	--	--
			Inhalation Total								1.2E-10					--
		Exposure Point Total									1.2E-10					--
	Exposure Medium Total										1.2E-10					--
Subsurface Soil Total											9.0E-07					1.2E-02

TABLE 7.3.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Shallow Groundwater	Shallow Groundwater	Tap	Ingestion													
				1,1-Dichloroethene	3.68E-03	mg/L	4.7E-06	mg/kg-day	NA	--	--	4.7E-05	mg/kg-day	5.0E-02	mg/kg-day	9.4E-04
				1,2,3-Trichlorobenzene	2.40E-03	mg/L	3.1E-06	mg/kg-day	NA	--	--	3.1E-05	mg/kg-day	1.0E-02	mg/kg-day	3.1E-03
				1,2,4-Trimethylbenzene	3.74E-03	mg/L	4.8E-06	mg/kg-day	NA	--	--	4.8E-05	mg/kg-day	5.0E-02	mg/kg-day	9.6E-04
				1,2-Dichloroethene (cis)	1.20E-01	mg/L	1.5E-04	mg/kg-day	NA	--	--	1.5E-03	mg/kg-day	1.0E-02	mg/kg-day	1.5E-01
				1,2-Dichloroethene (total)	1.75E-01	mg/L	2.2E-04	mg/kg-day	NA	--	--	2.2E-03	mg/kg-day	1.0E-02	mg/kg-day	2.2E-01
				1,2-Dichloroethene (trans)	3.09E-03	mg/L	4.0E-06	mg/kg-day	NA	--	--	4.0E-05	mg/kg-day	2.0E-02	mg/kg-day	2.0E-03
				1,2-Dichloropropane	3.00E-04	mg/L	3.8E-07	mg/kg-day	6.8E-02	1/(mg/kg-day)	2.6E-08	3.8E-06	mg/kg-day	1.1E-03	mg/kg-day	3.5E-03
				1,3,5-Trimethylbenzene	2.73E-03	mg/L	3.5E-06	mg/kg-day	NA	--	--	3.5E-05	mg/kg-day	5.0E-02	mg/kg-day	7.0E-04
				1,4-Dichlorobenzene (p-)	2.00E-03	mg/L	2.6E-06	mg/kg-day	2.4E-02	1/(mg/kg-day)	6.2E-08	2.6E-05	mg/kg-day	3.0E-02	mg/kg-day	8.5E-04
				2-Chlorotoluene	2.25E-03	mg/L	2.9E-06	mg/kg-day	NA	--	--	2.9E-05	mg/kg-day	2.0E-02	mg/kg-day	1.4E-03
				4-Isopropyltoluene	5.47E-03	mg/L	7.0E-06	mg/kg-day	NA	--	--	7.0E-05	mg/kg-day	NA	--	--
				Benzene	9.82E-03	mg/L	1.3E-05	mg/kg-day	5.5E-02	1/(mg/kg-day)	6.9E-07	1.3E-04	mg/kg-day	4.0E-03	mg/kg-day	3.1E-02
				Bromodichloromethane	2.00E-03	mg/L	2.6E-06	mg/kg-day	6.2E-02	1/(mg/kg-day)	1.6E-07	2.6E-05	mg/kg-day	2.0E-02	mg/kg-day	1.3E-03
				Bromoform	2.77E-03	mg/L	3.5E-06	mg/kg-day	7.9E-03	1/(mg/kg-day)	2.8E-08	3.5E-05	mg/kg-day	2.0E-02	mg/kg-day	1.8E-03
				Chloroform	4.40E-04	mg/L	5.6E-07	mg/kg-day	NA	--	--	5.6E-06	mg/kg-day	1.0E-02	mg/kg-day	5.6E-04
				Ethylbenzene	7.07E-03	mg/L	9.1E-06	mg/kg-day	NA	--	--	9.1E-05	mg/kg-day	1.0E-01	mg/kg-day	9.1E-04
				Isopropylbenzene (Cumen	4.33E-03	mg/L	5.6E-06	mg/kg-day	NA	--	--	5.6E-05	mg/kg-day	1.0E-01	mg/kg-day	5.6E-04
				Naphthalene	1.65E-01	mg/L	2.1E-04	mg/kg-day	NA	--	--	2.1E-03	mg/kg-day	2.0E-02	mg/kg-day	1.1E-01
				n-Butylbenzene	4.20E-03	mg/L	5.4E-06	mg/kg-day	NA	--	--	5.4E-05	mg/kg-day	4.0E-02	mg/kg-day	1.3E-03
				Tetrachloroethene (PCE)	2.64E-03	mg/L	3.4E-06	mg/kg-day	5.4E-01	1/(mg/kg-day)	1.8E-06	3.4E-05	mg/kg-day	1.0E-02	mg/kg-day	3.4E-03
				Toluene	1.11E-02	mg/L	1.4E-05	mg/kg-day	NA	--	--	1.4E-04	mg/kg-day	2.0E-01	mg/kg-day	7.1E-04
				Trichloroethene (TCE)	3.18E-01	mg/L	4.1E-04	mg/kg-day	4.0E-01	1/(mg/kg-day)	**1.6E-04**	4.1E-03	mg/kg-day	3.0E-04	mg/kg-day	**1.4E+01**
				Vinyl Chloride	1.56E-02	mg/L	2.0E-05	mg/kg-day	1.5E+00	1/(mg/kg-day)	3.0E-05	2.0E-04	mg/kg-day	3.0E-03	mg/kg-day	6.7E-02
				Xylene, m/p-	1.01E-02	mg/L	1.3E-05	mg/kg-day	NA	--	--	1.3E-04	mg/kg-day	2.0E-01	mg/kg-day	6.4E-04
				Xylene, o-	5.34E-03	mg/L	6.8E-06	mg/kg-day	NA	--	--	6.8E-05	mg/kg-day	2.0E-01	mg/kg-day	3.4E-04
				Xylenes, total	9.56E-03	mg/L	1.2E-05	mg/kg-day	NA	--	--	1.2E-04	mg/kg-day	2.0E-01	mg/kg-day	6.1E-04
				1,1'-Biphenyl	8.87E-03	mg/L	1.1E-05	mg/kg-day	NA	--	--	1.1E-04	mg/kg-day	5.0E-02	mg/kg-day	2.3E-03
				2,4-Dimethylphenol	6.38E-02	mg/L	8.2E-05	mg/kg-day	NA	--	--	8.2E-04	mg/kg-day	2.0E-02	mg/kg-day	4.1E-02
				2-Methylnaphthalene	4.57E-02	mg/L	5.9E-05	mg/kg-day	NA	--	--	5.9E-04	mg/kg-day	4.0E-03	mg/kg-day	1.5E-01
				2-Methylphenol (o-Cresol)	2.66E-02	mg/L	3.4E-05	mg/kg-day	NA	--	--	3.4E-04	mg/kg-day	5.0E-02	mg/kg-day	6.8E-03
				4-Methylphenol (p-Cresol)	1.81E-02	mg/L	2.3E-05	mg/kg-day	NA	--	--	2.3E-04	mg/kg-day	5.0E-03	mg/kg-day	4.6E-02
				Acenaphthene	3.08E-02	mg/L	3.9E-05	mg/kg-day	NA	--	--	3.9E-04	mg/kg-day	6.0E-02	mg/kg-day	6.6E-03
				Bis(2-ethylhexyl) Phthalat	5.50E-03	mg/L	7.1E-06	mg/kg-day	1.4E-02	1/(mg/kg-day)	9.9E-08	7.1E-05	mg/kg-day	2.0E-02	mg/kg-day	3.5E-03
				Carbazole	1.01E-02	mg/L	1.3E-05	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.6E-07	1.3E-04	mg/kg-day	NA	--	--
				Dibenzofuran	1.31E-02	mg/L	1.7E-05	mg/kg-day	NA	--	--	1.7E-04	mg/kg-day	2.0E-03	mg/kg-day	8.4E-02
				Fluorene	1.07E-02	mg/L	1.4E-05	mg/kg-day	NA	--	--	1.4E-04	mg/kg-day	4.0E-02	mg/kg-day	3.4E-03
				Naphthalene	1.65E-01	mg/L	2.1E-04	mg/kg-day	NA	--	--	2.1E-03	mg/kg-day	2.0E-02	mg/kg-day	1.1E-01
			Ingestion Total								**2.0E-04**					**1.5E+01**

TABLE 7.3.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Shallow Groundwater (Cont)	Shallow Groundwater (Cont)	Tap (Cont)	Dermal	1,1-Dichloroethene	3.68E-05	mg/L	6.1E-07	mg/kg-day	NA	--	--	6.1E-06	mg/kg-day	5.0E-02	mg/kg-day	1.2E-04
				1,2,3-Trichlorobenzene	2.40E-03	mg/L	4.1E-06	mg/kg-day	NA	--	--	4.1E-05	mg/kg-day	1.0E-02	mg/kg-day	4.1E-03
				1,2,4-Trimethylbenzene	3.74E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				1,2-Dichloroethene (cis)	1.20E-01	mg/L	1.3E-05	mg/kg-day	NA	--	--	1.3E-04	mg/kg-day	1.0E-02	mg/kg-day	1.3E-02
				1,2-Dichloroethene (total)	1.75E-01	mg/L	1.9E-05	mg/kg-day	NA	--	--	1.9E-04	mg/kg-day	1.0E-02	mg/kg-day	1.9E-02
				1,2-Dichloroethene (trans)	3.09E-03	mg/L	4.7E-07	mg/kg-day	NA	--	--	4.7E-06	mg/kg-day	2.0E-02	mg/kg-day	2.3E-04
				1,2-Dichloropropane	3.00E-04	mg/L	3.6E-08	mg/kg-day	6.8E-02	1/(mg/kg-day)	2.5E-09	3.6E-07	mg/kg-day	1.1E-03	mg/kg-day	3.3E-04
				1,3,5-Trimethylbenzene	2.73E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				1,4-Dichlorobenzene (p-)	2.00E-03	mg/L	1.6E-06	mg/kg-day	2.4E-02	1/(mg/kg-day)	3.9E-08	1.6E-05	mg/kg-day	3.0E-02	mg/kg-day	5.4E-04
				2-Chlorotoluene	2.25E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	2.0E-02	mg/kg-day	--
				4-Isopropyltoluene	5.47E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	NA	--	--
				Benzene	9.82E-03	mg/L	1.8E-06	mg/kg-day	5.5E-02	1/(mg/kg-day)	9.9E-08	1.8E-05	mg/kg-day	4.0E-03	mg/kg-day	4.5E-03
				Bromodichloromethane	2.00E-03	mg/L	2.0E-07	mg/kg-day	6.2E-02	1/(mg/kg-day)	1.2E-08	2.0E-06	mg/kg-day	2.0E-02	mg/kg-day	9.8E-05
				Bromoform	2.77E-03	mg/L	2.3E-07	mg/kg-day	7.9E-03	1/(mg/kg-day)	1.8E-09	2.3E-06	mg/kg-day	2.0E-02	mg/kg-day	1.2E-04
				Chloroform	4.40E-04	mg/L	4.8E-08	mg/kg-day	NA	--	--	4.8E-07	mg/kg-day	1.0E-02	mg/kg-day	4.8E-05
				Ethylbenzene	7.07E-03	mg/L	5.1E-06	mg/kg-day	NA	--	--	5.1E-05	mg/kg-day	1.0E-01	mg/kg-day	5.1E-04
				Isopropylbenzene (Cumen	4.33E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	1.0E-01	mg/kg-day	--
				Naphthalene	1.65E-01	mg/L	1.3E-04	mg/kg-day	NA	--	--	1.3E-03	mg/kg-day	2.0E-02	mg/kg-day	6.6E-02
				n-Butylbenzene	4.20E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	4.0E-02	mg/kg-day	--
				Tetrachloroethene (PCE)	2.64E-03	mg/L	1.9E-06	mg/kg-day	5.4E-01	1/(mg/kg-day)	1.0E-06	1.9E-05	mg/kg-day	1.0E-02	mg/kg-day	1.9E-03
				Toluene	1.11E-02	mg/L	0.0E+00	mg/kg-day	NA	--	--	0.0E+00	mg/kg-day	2.0E-01	mg/kg-day	0.0E+00
				Trichloroethene (TCE)	3.18E-01	mg/L	6.6E-05	mg/kg-day	4.0E-01	1/(mg/kg-day)	2.6E-05	6.6E-04	mg/kg-day	3.0E-04	mg/kg-day	**2.2E+00**
				Vinyl Chloride	1.56E-02	mg/L	9.8E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.5E-06	9.8E-06	mg/kg-day	3.0E-03	mg/kg-day	3.3E-03
				Xylene, m/p-	1.01E-02	mg/L	7.7E-06	mg/kg-day	NA	--	--	7.7E-05	mg/kg-day	2.0E-01	mg/kg-day	3.9E-04
				Xylene, o-	5.34E-03	mg/L	3.6E-06	mg/kg-day	NA	--	--	3.6E-05	mg/kg-day	2.0E-01	mg/kg-day	1.8E-04
				Xylenes, total	9.56E-03	mg/L	4.2E-07	mg/kg-day	NA	--	--	4.2E-06	mg/kg-day	2.0E-01	mg/kg-day	2.1E-05
				1,1'-Biphenyl	8.87E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				2,4-Dimethylphenol	6.38E-02	mg/L	1.2E-05	mg/kg-day	NA	--	--	1.2E-04	mg/kg-day	2.0E-02	mg/kg-day	5.8E-03
				2-Methylnaphthalene	4.57E-02	mg/L	6.8E-05	mg/kg-day	NA	--	--	6.8E-04	mg/kg-day	4.0E-03	mg/kg-day	1.7E-01
				2-Methylphenol (o-Cresol)	2.66E-02	mg/L	3.1E-06	mg/kg-day	NA	--	--	3.1E-05	mg/kg-day	5.0E-02	mg/kg-day	6.1E-04
				4-Methylphenol (p-Cresol)	1.81E-02	mg/L	2.1E-06	mg/kg-day	NA	--	--	2.1E-05	mg/kg-day	5.0E-03	mg/kg-day	4.2E-03
				Acenaphthene	3.08E-02	mg/L	6.2E-05	mg/kg-day	NA	--	--	6.2E-04	mg/kg-day	6.0E-02	mg/kg-day	1.0E-02
				Bis(2-ethylhexyl) Phthalat	5.50E-03	mg/L	1.3E-05	mg/kg-day	1.4E-02	1/(mg/kg-day)	1.8E-07	1.3E-04	mg/kg-day	2.0E-02	mg/kg-day	6.4E-03
				Carbazole	1.01E-02	mg/L	1.2E-05	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.3E-07	1.2E-04	mg/kg-day	NA	--	--
				Dibenzofuran	1.31E-02	mg/L	2.7E-05	mg/kg-day	NA	--	--	2.7E-04	mg/kg-day	2.0E-03	mg/kg-day	1.4E-01
				Fluorene	1.07E-02	mg/L	3.2E-05	mg/kg-day	NA	--	--	3.2E-04	mg/kg-day	4.0E-02	mg/kg-day	7.9E-03
				Naphthalene	1.65E-01	mg/L	1.3E-04	mg/kg-day	NA	--	--	1.3E-03	mg/kg-day	2.0E-02	mg/kg-day	6.6E-02
			Dermal Total								3.0E-05					**2.7E+00**
		Exposure Point Total									**2.3E-04**					**1.7E+01**
	Exposure Medium Total										**2.3E-04**					**1.7E+01**

TABLE 7.3.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Shallow Groundwater (Cont)	Air	Water Vapors from Showerhead	Inhalation	1,1-Dichloroethene	3.68E-03	mg/L	4.7E-06	mg/kg-day	NA	--	--	4.7E-05	mg/kg-day	5.0E-02	mg/kg-day	9.4E-04
				1,2,3-Trichlorobenzene	2.40E-03	mg/L	3.1E-06	mg/kg-day	NA	--	--	3.1E-05	mg/kg-day	1.0E-02	mg/kg-day	3.1E-03
				1,2,4-Trimethylbenzene	3.74E-03	mg/L	4.8E-06	mg/kg-day	NA	--	--	4.8E-05	mg/kg-day	5.0E-02	mg/kg-day	9.6E-04
				1,2-Dichloroethene (cis)	1.20E-01	mg/L	1.5E-04	mg/kg-day	NA	--	--	1.5E-03	mg/kg-day	1.0E-02	mg/kg-day	1.5E-01
				1,2-Dichloroethene (total)	1.75E-01	mg/L	2.2E-04	mg/kg-day	NA	--	--	2.2E-03	mg/kg-day	1.0E-02	mg/kg-day	2.2E-01
				1,2-Dichloroethene (trans)	3.09E-03	mg/L	4.0E-06	mg/kg-day	NA	--	--	4.0E-05	mg/kg-day	2.0E-02	mg/kg-day	2.0E-03
				1,2-Dichloropropane	3.00E-04	mg/L	3.8E-07	mg/kg-day	6.8E-02	1/(mg/kg-day)	2.6E-08	3.8E-06	mg/kg-day	1.1E-03	mg/kg-day	3.5E-03
				1,3,5-Trimethylbenzene	2.73E-03	mg/L	3.5E-06	mg/kg-day	NA	--	--	3.5E-05	mg/kg-day	5.0E-02	mg/kg-day	7.0E-04
				1,4-Dichlorobenzene (p-)	2.00E-03	mg/L	2.6E-06	mg/kg-day	2.4E-02	1/(mg/kg-day)	6.2E-08	2.6E-05	mg/kg-day	3.0E-02	mg/kg-day	8.5E-04
				2-Chlorotoluene	2.25E-03	mg/L	2.9E-06	mg/kg-day	NA	--	--	2.9E-05	mg/kg-day	2.0E-02	mg/kg-day	1.4E-03
				4-Isopropyltoluene	5.47E-03	mg/L	7.0E-06	mg/kg-day	NA	--	--	7.0E-05	mg/kg-day	NA	--	--
				Benzene	9.82E-03	mg/L	1.3E-05	mg/kg-day	5.5E-02	1/(mg/kg-day)	6.9E-07	1.3E-04	mg/kg-day	4.0E-03	mg/kg-day	3.1E-02
				Bromodichloromethane	2.00E-03	mg/L	2.6E-06	mg/kg-day	6.2E-02	1/(mg/kg-day)	1.6E-07	2.6E-05	mg/kg-day	2.0E-02	mg/kg-day	1.3E-03
				Bromoform	2.77E-03	mg/L	3.5E-06	mg/kg-day	7.9E-03	1/(mg/kg-day)	2.8E-08	3.5E-05	mg/kg-day	2.0E-02	mg/kg-day	1.8E-03
				Chloroform	4.40E-04	mg/L	5.6E-07	mg/kg-day	NA	--	--	5.6E-06	mg/kg-day	1.0E-02	mg/kg-day	5.6E-04
				Ethylbenzene	7.07E-03	mg/L	9.1E-06	mg/kg-day	NA	--	--	9.1E-05	mg/kg-day	1.0E-01	mg/kg-day	9.1E-04
				Isopropylbenzene (Cumen	4.33E-03	mg/L	5.6E-06	mg/kg-day	NA	--	--	5.6E-05	mg/kg-day	1.0E-01	mg/kg-day	5.6E-04
				Naphthalene	1.65E-01	mg/L	2.1E-04	mg/kg-day	NA	--	--	2.1E-03	mg/kg-day	2.0E-02	mg/kg-day	1.1E-01
				n-Butylbenzene	4.20E-03	mg/L	5.4E-06	mg/kg-day	NA	--	--	5.4E-05	mg/kg-day	4.0E-02	mg/kg-day	1.3E-03
				Tetrachloroethene (PCE)	2.64E-03	mg/L	3.4E-06	mg/kg-day	5.4E-01	1/(mg/kg-day)	1.8E-06	3.4E-05	mg/kg-day	1.0E-02	mg/kg-day	3.4E-03
				Toluene	1.11E-02	mg/L	1.4E-05	mg/kg-day	NA	--	--	1.4E-04	mg/kg-day	2.0E-01	mg/kg-day	7.1E-04
				Trichloroethene (TCE)	3.18E-01	mg/L	4.1E-04	mg/kg-day	4.0E-01	1/(mg/kg-day)	**1.6E-04**	4.1E-03	mg/kg-day	3.0E-04	mg/kg-day	**1.4E+01**
				Vinyl Chloride	1.56E-02	mg/L	2.0E-05	mg/kg-day	1.5E+00	1/(mg/kg-day)	3.0E-05	2.0E-04	mg/kg-day	3.0E-03	mg/kg-day	6.7E-02
				Xylene, m/p-	1.01E-02	mg/L	1.3E-05	mg/kg-day	NA	--	--	1.3E-04	mg/kg-day	2.0E-01	mg/kg-day	6.4E-04
				Xylene, o-	5.34E-03	mg/L	6.8E-06	mg/kg-day	NA	--	--	6.8E-05	mg/kg-day	2.0E-01	mg/kg-day	3.4E-04
				Xylenes, total	9.56E-03	mg/L	1.2E-05	mg/kg-day	NA	--	--	1.2E-04	mg/kg-day	2.0E-01	mg/kg-day	6.1E-04
			Inhalation Total								**2.0E-04**					**1.4E+01**
		Exposure Point Total									**2.0E-04**					**1.4E+01**
	Exposure Medium Total										**2.0E-04**					**1.4E+01**
Shallow Groundwater Total											**4.2E-04**					**3.2E+01**
											Total of Receptor Risks Across All Media	**4.2E-04**		Total of Receptor Hazards Across All Media		**3.2E+01**

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Surface Soil	Ingestion													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	1.4E-06	mg/kg-day	2.4E-02	1/(mg/kg-day)	3.3E-08	1.6E-05	mg/kg-day	3.0E-02	mg/kg-day	5.3E-04
				2-Hexanone (MBK)	1.08E+00	mg/kg	1.2E-06	mg/kg-day	NA	--	--	1.4E-05	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	3.7E-05	mg/kg-day	NA	--	--	4.3E-04	mg/kg-day	2.0E-02	mg/kg-day	2.1E-02
				Acetophenone	1.30E+00	mg/kg	1.4E-06	mg/kg-day	NA	--	--	1.7E-05	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	1.5E-06	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.1E-06	1.7E-05	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	1.6E-06	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.2E-05	1.9E-05	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	3.3E-06	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.4E-06	3.8E-05	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	1.9E-06	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.4E-07	2.2E-05	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	4.3E-06	mg/kg-day	2.0E-02	1/(mg/kg-day)	8.7E-08	5.1E-05	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	1.9E-06	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.4E-08	2.2E-05	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	1.2E-06	mg/kg-day	7.3E+00	1/(mg/kg-day)	8.9E-06	1.4E-05	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	1.5E-06	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.1E-06	1.8E-05	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.5E-05	mg/kg-day	NA	--	--	1.8E-04	mg/kg-day	2.0E-02	mg/kg-day	9.0E-03
				Arsenic	2.69E+00	mg/kg	2.9E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.4E-06	3.4E-05	mg/kg-day	3.0E-04	mg/kg-day	1.1E-01
				Cadmium	5.49E+00	mg/kg	6.0E-06	mg/kg-day	NA	--	--	7.0E-05	mg/kg-day	5.0E-04	mg/kg-day	1.4E-01
			Ingestion Total								3.0E-05					2.9E-01
			Dermal													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	3.8E-08	mg/kg-day	2.4E-02	1/(mg/kg-day)	9.2E-10	4.5E-07	mg/kg-day	3.0E-02	mg/kg-day	1.5E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	3.3E-08	mg/kg-day	NA	--	--	3.9E-07	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.0E-06	mg/kg-day	NA	--	--	1.2E-05	mg/kg-day	2.0E-02	mg/kg-day	6.0E-04
				Acetophenone	1.30E+00	mg/kg	4.0E-07	mg/kg-day	NA	--	--	4.6E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	5.4E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.0E-07	6.3E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	5.9E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.3E-06	6.8E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.2E-06	mg/kg-day	7.3E-01	1/(mg/kg-day)	8.7E-07	1.4E-05	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	7.0E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	5.1E-08	8.2E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	1.6E-06	mg/kg-day	2.0E-02	1/(mg/kg-day)	3.2E-08	1.8E-05	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	6.9E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	5.1E-09	8.1E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	4.4E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.2E-06	5.2E-06	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	5.6E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.1E-07	6.6E-06	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	4.3E-07	mg/kg-day	NA	--	--	5.1E-06	mg/kg-day	2.0E-02	mg/kg-day	2.5E-04
				Arsenic	2.69E+00	mg/kg	2.5E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	3.7E-07	2.9E-06	mg/kg-day	3.0E-04	mg/kg-day	9.6E-03
				Cadmium	5.49E+00	mg/kg	1.7E-08	mg/kg-day	NA	--	--	2.0E-07	mg/kg-day	2.5E-05	mg/kg-day	7.9E-03
			Dermal Total								9.7E-06					1.8E-02
		Exposure Point Total									4.0E-05					3.0E-01
	Exposure Medium Total										4.0E-05					3.0E-01
	Air	Fugative Dust	Inhalation													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	9.1E-07	mg/kg-day	2.2E-02	1/(mg/kg-day)	2.0E-08	1.1E-05	mg/kg-day	2.3E-01	mg/kg-day	4.6E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	7.7E-12	mg/kg-day	NA	--	--	9.0E-11	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	7.3E-06	mg/kg-day	NA	--	--	8.5E-05	mg/kg-day	8.6E-04	mg/kg-day	9.9E-02
				Acetophenone	1.30E+00	mg/kg	4.7E-08	mg/kg-day	NA	--	--	5.5E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	7.2E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	5.2E-10	8.3E-09	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	4.0E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.9E-09	4.7E-09	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.3E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	9.8E-10	1.6E-08	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	3.8E-10	mg/kg-day	7.3E-02	1/(mg/kg-day)	2.8E-11	4.4E-09	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	1.1E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.1E-10	1.3E-07	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	6.0E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	4.4E-11	7.0E-08	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	1.3E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	9.4E-10	1.5E-09	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	1.7E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.3E-10	2.0E-09	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	7.3E-06	mg/kg-day	NA	--	--	3.6E-05	mg/kg-day	8.6E-04	mg/kg-day	4.2E-02
				Arsenic	2.69E+00	mg/kg	1.9E-11	mg/kg-day	1.5E+01	1/(mg/kg-day)	2.9E-10	2.2E-10	mg/kg-day	NA	--	--
				Cadmium	5.49E+00	mg/kg	3.9E-11	mg/kg-day	6.3E+00	1/(mg/kg-day)	2.5E-10	4.6E-10	mg/kg-day	NA	--	--
			Inhalation Total								2.6E-08					1.4E-01
		Exposure Point Total									2.6E-08					1.4E-01
	Exposure Medium Total										2.6E-08					1.4E-01
Surface Soil Total											4.0E-05					4.4E-01

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Subsurface Soil	Ingestion													
				2-Hexanone (MBK)	3.23E-01	mg/kg	3.5E-07	mg/kg-day	NA	--	--	4.1E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	2.7E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.0E-07	3.2E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	2.6E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.9E-06	3.0E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	2.9E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.1E-07	3.4E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	2.8E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	2.0E-08	3.2E-06	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	2.3E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	4.7E-09	2.7E-06	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	3.1E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	2.3E-09	3.6E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	2.3E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.7E-06	2.7E-06	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	2.4E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.8E-07	2.8E-06	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	7.0E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.0E-05	8.1E-05	mg/kg-day	3.0E-04	mg/kg-day	2.7E-01
			Ingestion Total								1.5E-05					2.7E-01
			Dermal													
				2-Hexanone (MBK)	3.23E-01	mg/kg	9.9E-09	mg/kg-day	NA	--	--	1.2E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	9.9E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.3E-08	1.2E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	9.3E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	6.8E-07	1.1E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	1.1E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.8E-08	1.2E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	1.0E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	7.3E-09	1.2E-06	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	8.5E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.7E-09	9.9E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	1.1E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	8.3E-10	1.3E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	8.5E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	6.2E-07	9.9E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	8.8E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	6.4E-08	1.0E-06	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	5.8E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	8.8E-07	6.8E-06	mg/kg-day	3.0E-04	mg/kg-day	2.3E-02
			Dermal Total								2.4E-06					2.3E-02
		Exposure Point Total									1.7E-05					2.9E-01
	Exposure Medium Total										1.7E-05					2.9E-01
	Air	Fugative Dust	Inhalation													
				2-Hexanone (MBK)	3.23E-01	mg/kg	2.3E-12	mg/kg-day	NA	--	--	2.7E-11	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	1.3E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	9.6E-11	1.5E-09	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	6.4E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.7E-10	7.5E-10	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	1.2E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	8.8E-11	1.4E-09	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	5.4E-11	mg/kg-day	7.3E-02	1/(mg/kg-day)	4.0E-12	6.3E-10	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	5.8E-10	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.2E-11	6.7E-09	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	9.8E-10	mg/kg-day	7.3E-03	1/(mg/kg-day)	7.2E-12	1.1E-08	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	2.5E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.8E-10	2.9E-10	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	2.7E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.0E-11	3.1E-10	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	4.5E-11	mg/kg-day	1.5E+01	1/(mg/kg-day)	6.8E-10	5.3E-10	mg/kg-day	NA	--	--
			Inhalation Total								1.6E-09					--
		Exposure Point Total									1.6E-09					--
	Exposure Medium Total										1.6E-09					--
Subsurface Soil Total											1.7E-05					2.9E-01

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater	Groundwater	Tap	Ingestion													
				1,1-Dichloroethene	3.68E-03	mg/L	2.0E-05	mg/kg-day	NA	--	--	2.3E-04	mg/kg-day	5.0E-02	mg/kg-day	4.7E-03
				1,2,3-Trichlorobenzene	2.40E-03	mg/L	1.3E-05	mg/kg-day	NA	--	--	1.5E-04	mg/kg-day	1.0E-02	mg/kg-day	1.5E-02
				1,2,4-Trimethylbenzene	3.74E-03	mg/L	2.1E-05	mg/kg-day	NA	--	--	2.4E-04	mg/kg-day	5.0E-02	mg/kg-day	4.8E-03
				1,2-Dichloroethene (cis)	1.20E-01	mg/L	6.6E-04	mg/kg-day	NA	--	--	7.7E-03	mg/kg-day	1.0E-02	mg/kg-day	7.7E-01
				1,2-Dichloroethene (total)	1.75E-01	mg/L	9.6E-04	mg/kg-day	NA	--	--	1.1E-02	mg/kg-day	1.0E-02	mg/kg-day	**1.1E+00**
				1,2-Dichloroethene (trans)	3.09E-03	mg/L	1.7E-05	mg/kg-day	NA	--	--	2.0E-04	mg/kg-day	2.0E-02	mg/kg-day	9.9E-03
				1,2-Dichloropropane	3.00E-04	mg/L	1.6E-06	mg/kg-day	6.8E-02	1/(mg/kg-day)	1.1E-07	1.9E-05	mg/kg-day	1.1E-03	mg/kg-day	1.7E-02
				1,3,5-Trimethylbenzene	2.73E-03	mg/L	1.5E-05	mg/kg-day	NA	--	--	1.7E-04	mg/kg-day	5.0E-02	mg/kg-day	3.5E-03
				1,4-Dichlorobenzene (p-)	2.00E-03	mg/L	1.1E-05	mg/kg-day	2.4E-02	1/(mg/kg-day)	2.6E-07	1.3E-04	mg/kg-day	3.0E-02	mg/kg-day	4.3E-03
				2-Chlorotoluene	2.25E-03	mg/L	1.2E-05	mg/kg-day	NA	--	--	1.4E-04	mg/kg-day	2.0E-02	mg/kg-day	7.2E-03
				4-Isopropyltoluene	5.47E-03	mg/L	3.0E-05	mg/kg-day	NA	--	--	3.5E-04	mg/kg-day	NA	--	--
				Benzene	9.82E-03	mg/L	5.4E-05	mg/kg-day	5.5E-02	1/(mg/kg-day)	3.0E-06	6.3E-04	mg/kg-day	4.0E-03	mg/kg-day	1.6E-01
				Bromodichloromethane	2.00E-03	mg/L	1.1E-05	mg/kg-day	6.2E-02	1/(mg/kg-day)	6.8E-07	1.3E-04	mg/kg-day	2.0E-02	mg/kg-day	6.4E-03
				Bromoform	2.77E-03	mg/L	1.5E-05	mg/kg-day	7.9E-03	1/(mg/kg-day)	1.2E-07	1.8E-04	mg/kg-day	2.0E-02	mg/kg-day	8.8E-03
				Chloroform	4.40E-04	mg/L	2.4E-06	mg/kg-day	NA	--	--	2.8E-05	mg/kg-day	1.0E-02	mg/kg-day	2.8E-03
				Ethylbenzene	7.07E-03	mg/L	3.9E-05	mg/kg-day	NA	--	--	4.5E-04	mg/kg-day	1.0E-01	mg/kg-day	4.5E-03
				Isopropylbenzene (Cumen	4.33E-03	mg/L	2.4E-05	mg/kg-day	NA	--	--	2.8E-04	mg/kg-day	1.0E-01	mg/kg-day	2.8E-03
				Naphthalene	1.65E-01	mg/L	9.0E-04	mg/kg-day	NA	--	--	1.1E-02	mg/kg-day	2.0E-02	mg/kg-day	5.3E-01
				n-Butylbenzene	4.20E-03	mg/L	2.3E-05	mg/kg-day	NA	--	--	2.7E-04	mg/kg-day	4.0E-02	mg/kg-day	6.7E-03
				Tetrachloroethene (PCE)	2.64E-03	mg/L	1.4E-05	mg/kg-day	5.4E-01	1/(mg/kg-day)	7.8E-06	1.7E-04	mg/kg-day	1.0E-02	mg/kg-day	1.7E-02
				Toluene	1.11E-02	mg/L	6.1E-05	mg/kg-day	NA	--	--	7.1E-04	mg/kg-day	2.0E-01	mg/kg-day	3.6E-03
				Trichloroethene (TCE)	3.18E-01	mg/L	1.7E-03	mg/kg-day	4.0E-01	1/(mg/kg-day)	**7.0E-04**	2.0E-02	mg/kg-day	3.0E-04	mg/kg-day	**6.8E+01**
				Vinyl Chloride	1.56E-02	mg/L	8.6E-05	mg/kg-day	1.5E+00	1/(mg/kg-day)	**1.3E-04**	1.0E-03	mg/kg-day	3.0E-03	mg/kg-day	3.3E-01
				Xylene, m/p-	1.01E-02	mg/L	5.5E-05	mg/kg-day	NA	--	--	6.4E-04	mg/kg-day	2.0E-01	mg/kg-day	3.2E-03
				Xylene, o-	5.34E-03	mg/L	2.9E-05	mg/kg-day	NA	--	--	3.4E-04	mg/kg-day	2.0E-01	mg/kg-day	1.7E-03
				Xylenes, total	9.56E-03	mg/L	5.2E-05	mg/kg-day	NA	--	--	6.1E-04	mg/kg-day	2.0E-01	mg/kg-day	3.1E-03
				1,1'-Biphenyl	8.87E-03	mg/L	4.9E-05	mg/kg-day	NA	--	--	5.7E-04	mg/kg-day	5.0E-02	mg/kg-day	1.1E-02
				2,4-Dimethylphenol	6.38E-02	mg/L	3.5E-04	mg/kg-day	NA	--	--	4.1E-03	mg/kg-day	2.0E-02	mg/kg-day	2.0E-01
				2-Methylnaphthalene	4.57E-02	mg/L	2.5E-04	mg/kg-day	NA	--	--	2.9E-03	mg/kg-day	4.0E-03	mg/kg-day	7.3E-01
				2-Methylphenol (o-Cresol)	2.66E-02	mg/L	1.5E-04	mg/kg-day	NA	--	--	1.7E-03	mg/kg-day	5.0E-02	mg/kg-day	3.4E-02
				4-Methylphenol (p-Cresol)	1.81E-02	mg/L	9.9E-05	mg/kg-day	NA	--	--	1.2E-03	mg/kg-day	5.0E-03	mg/kg-day	2.3E-01
				Acenaphthene	3.08E-02	mg/L	1.7E-04	mg/kg-day	NA	--	--	2.0E-03	mg/kg-day	6.0E-02	mg/kg-day	3.3E-02
				Bis(2-ethylhexyl) Phthalat	5.50E-03	mg/L	3.0E-05	mg/kg-day	1.4E-02	1/(mg/kg-day)	4.2E-07	3.5E-04	mg/kg-day	2.0E-02	mg/kg-day	1.8E-02
				Carbazole	1.01E-02	mg/L	5.5E-05	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.1E-06	6.4E-04	mg/kg-day	NA	--	--
				Dibenzofuran	1.31E-02	mg/L	7.2E-05	mg/kg-day	NA	--	--	8.4E-04	mg/kg-day	2.0E-03	mg/kg-day	4.2E-01
				Fluorene	1.07E-02	mg/L	5.8E-05	mg/kg-day	NA	--	--	6.8E-04	mg/kg-day	4.0E-02	mg/kg-day	1.7E-02
				Naphthalene	1.65E-01	mg/L	9.0E-04	mg/kg-day	NA	--	--	1.1E-02	mg/kg-day	2.0E-02	mg/kg-day	5.3E-01
			Ingestion Total								**8.4E-04**					**7.3E+01**

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater (Cont)	Groundwater (Cont)	Tap (Cont)	Dermal	1,1-Dichloroethene	3.68E-03	mg/L	2.8E-06	mg/kg-day	NA	--	--	3.2E-05	mg/kg-day	5.0E-02	mg/kg-day	6.5E-04
				1,2,3-Trichlorobenzene	2.40E-03	mg/L	1.8E-05	mg/kg-day	NA	--	--	2.1E-04	mg/kg-day	1.0E-02	mg/kg-day	2.1E-02
				1,2,4-Trimethylbenzene	3.74E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				1,2-Dichloroethene (cis)	1.20E-01	mg/L	5.8E-05	mg/kg-day	NA	--	--	6.8E-04	mg/kg-day	1.0E-02	mg/kg-day	6.8E-02
				1,2-Dichloroethene (total)	1.75E-01	mg/L	8.5E-05	mg/kg-day	NA	--	--	9.9E-04	mg/kg-day	1.0E-02	mg/kg-day	9.9E-02
				1,2-Dichloroethene (trans)	3.09E-03	mg/L	2.1E-06	mg/kg-day	NA	--	--	2.5E-05	mg/kg-day	2.0E-02	mg/kg-day	1.2E-03
				1,2-Dichloropropane	3.00E-04	mg/L	1.6E-07	mg/kg-day	6.8E-02	1/(mg/kg-day)	1.1E-08	1.9E-06	mg/kg-day	1.1E-03	mg/kg-day	1.7E-03
				1,3,5-Trimethylbenzene	2.73E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				1,4-Dichlorobenzene (p-)	2.00E-03	mg/L	7.1E-06	mg/kg-day	2.4E-02	1/(mg/kg-day)	1.7E-07	8.3E-05	mg/kg-day	3.0E-02	mg/kg-day	2.8E-03
				2-Chlorotoluene	2.25E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	2.0E-02	mg/kg-day	--
				4-Isopropyltoluene	5.47E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	NA	--	--
				Benzene	9.82E-03	mg/L	8.5E-06	mg/kg-day	5.5E-02	1/(mg/kg-day)	4.7E-07	9.9E-05	mg/kg-day	4.0E-03	mg/kg-day	2.5E-02
				Bromodichloromethane	2.00E-03	mg/L	8.6E-07	mg/kg-day	6.2E-02	1/(mg/kg-day)	5.3E-08	1.0E-05	mg/kg-day	2.0E-02	mg/kg-day	5.0E-04
				Bromoform	2.77E-03	mg/L	1.0E-06	mg/kg-day	7.9E-03	1/(mg/kg-day)	8.0E-09	1.2E-05	mg/kg-day	2.0E-02	mg/kg-day	5.9E-04
				Chloroform	4.40E-04	mg/L	2.1E-07	mg/kg-day	NA	--	--	2.5E-06	mg/kg-day	1.0E-02	mg/kg-day	2.5E-04
				Ethylbenzene	7.07E-01	mg/L	2.2E-05	mg/kg-day	NA	--	--	2.6E-04	mg/kg-day	1.0E-01	mg/kg-day	2.6E-03
				Isopropylbenzene (Cumen	4.33E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	1.0E-01	mg/kg-day	--
				Naphthalene	1.65E-01	mg/L	5.8E-04	mg/kg-day	NA	--	--	6.8E-03	mg/kg-day	2.0E-02	mg/kg-day	3.4E-01
				n-Butylbenzene	4.20E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	4.0E-02	mg/kg-day	--
				Tetrachloroethene (PCE)	2.64E-03	mg/L	8.3E-06	mg/kg-day	5.4E-01	1/(mg/kg-day)	4.5E-06	9.7E-05	mg/kg-day	1.0E-02	mg/kg-day	9.7E-03
				Toluene	1.11E-02	mg/L	0.0E+00	mg/kg-day	NA	--	--	0.0E+00	mg/kg-day	2.0E-01	mg/kg-day	0.0E+00
				Trichloroethene (TCE)	3.18E-01	mg/L	2.9E-04	mg/kg-day	4.0E-01	1/(mg/kg-day)	**1.2E-04**	3.4E-03	mg/kg-day	3.0E-04	mg/kg-day	**1.1E+01**
				Vinyl Chloride	1.56E-02	mg/L	4.7E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	7.0E-06	5.5E-05	mg/kg-day	3.0E-03	mg/kg-day	1.8E-02
				Xylene, m/p-	1.01E-02	mg/L	3.4E-05	mg/kg-day	NA	--	--	4.0E-04	mg/kg-day	2.0E-01	mg/kg-day	2.0E-03
				Xylene, o-	5.34E-03	mg/L	1.6E-05	mg/kg-day	NA	--	--	1.9E-04	mg/kg-day	2.0E-01	mg/kg-day	9.3E-04
				Xylenes, total	9.56E-03	mg/L	1.9E-06	mg/kg-day	NA	--	--	2.2E-05	mg/kg-day	2.0E-01	mg/kg-day	1.1E-04
				1,1'-Biphenyl	8.87E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				2,4-Dimethylphenol	6.38E-02	mg/L	5.1E-05	mg/kg-day	NA	--	--	5.9E-04	mg/kg-day	2.0E-02	mg/kg-day	3.0E-02
				2-Methylnaphthalene	4.57E-02	mg/L	3.0E-04	mg/kg-day	NA	--	--	3.5E-03	mg/kg-day	4.0E-03	mg/kg-day	8.7E-01
				2-Methylphenol (o-Cresol)	2.66E-02	mg/L	1.3E-05	mg/kg-day	NA	--	--	1.6E-04	mg/kg-day	5.0E-02	mg/kg-day	3.1E-03
				4-Methylphenol (p-Cresol)	1.81E-02	mg/L	9.2E-06	mg/kg-day	NA	--	--	1.1E-04	mg/kg-day	5.0E-03	mg/kg-day	2.1E-02
				Acenaphthene	3.08E-02	mg/L	2.7E-04	mg/kg-day	NA	--	--	3.2E-03	mg/kg-day	6.0E-02	mg/kg-day	5.3E-02
				Bis(2-ethylhexyl) Phthalat	5.50E-03	mg/L	5.6E-05	mg/kg-day	1.4E-02	1/(mg/kg-day)	7.8E-07	6.5E-04	mg/kg-day	2.0E-02	mg/kg-day	3.3E-02
				Carbazole	1.01E-02	mg/L	5.0E-05	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.0E-06	5.9E-04	mg/kg-day	NA	--	--
				Dibenzofuran	1.31E-02	mg/L	1.2E-04	mg/kg-day	NA	--	--	1.4E-03	mg/kg-day	2.0E-03	mg/kg-day	7.0E-01
				Fluorene	1.07E-02	mg/L	1.4E-04	mg/kg-day	NA	--	--	1.6E-03	mg/kg-day	4.0E-02	mg/kg-day	4.1E-02
				Naphthalene	1.65E-01	mg/L	5.8E-04	mg/kg-day	NA	--	--	6.8E-03	mg/kg-day	2.0E-02	mg/kg-day	3.4E-01
			Dermal Total								**1.3E-04**					**1.4E+01**
		Exposure Point Total									**9.7E-04**					**8.7E+01**
	Exposure Medium Total										**9.7E-04**					**8.7E+01**
Groundwater Total											**9.7E-04**					**8.7E+01**
											Total of Receptor Risks Across All Media	**1.0E-03**		Total of Receptor Hazards Across All Media		**8.8E+01**

TABLE 7.4.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Surface Soil	Ingestion													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	1.5E-07	mg/kg-day	2.4E-02	1/(mg/kg-day)	3.7E-09	5.3E-06	mg/kg-day	3.0E-02	mg/kg-day	1.8E-04
				2-Hexanone (MBK)	1.08E+00	mg/kg	1.3E-07	mg/kg-day	NA	--	--	4.6E-06	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	4.1E-06	mg/kg-day	NA	--	--	1.4E-04	mg/kg-day	2.0E-02	mg/kg-day	7.1E-03
				Acetophenone	1.30E+00	mg/kg	1.6E-07	mg/kg-day	NA	--	--	5.5E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	1.7E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.2E-07	5.8E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	1.8E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.3E-06	6.3E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	3.6E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.7E-07	1.3E-05	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	2.1E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.6E-08	7.5E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	4.8E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	9.7E-09	1.7E-05	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	2.1E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.6E-09	7.4E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	1.4E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	9.9E-07	4.8E-06	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	1.7E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.3E-07	6.0E-06	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.7E-06	mg/kg-day	NA	--	--	6.0E-05	mg/kg-day	2.0E-02	mg/kg-day	3.0E-03
				Arsenic	2.69E+00	mg/kg	3.3E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.9E-07	1.1E-05	mg/kg-day	3.0E-04	mg/kg-day	3.8E-02
				Cadmium	5.49E+00	mg/kg	6.7E-07	mg/kg-day	NA	--	--	2.3E-05	mg/kg-day	5.0E-04	mg/kg-day	4.7E-02
			Ingestion Total								3.3E-06					9.6E-02
			Dermal													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	1.7E-09	mg/kg-day	2.4E-02	1/(mg/kg-day)	4.1E-11	6.0E-08	mg/kg-day	3.0E-02	mg/kg-day	2.0E-06
				2-Hexanone (MBK)	1.08E+00	mg/kg	1.5E-09	mg/kg-day	NA	--	--	5.2E-08	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	4.6E-08	mg/kg-day	NA	--	--	1.6E-06	mg/kg-day	2.0E-02	mg/kg-day	8.0E-05
				Acetophenone	1.30E+00	mg/kg	1.8E-08	mg/kg-day	NA	--	--	6.2E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	2.4E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.8E-08	8.5E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	2.6E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.9E-07	9.1E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	5.3E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.9E-08	1.9E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	3.1E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	2.3E-09	1.1E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	7.0E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.4E-09	2.5E-06	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	3.1E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	2.3E-10	1.1E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	2.0E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.4E-07	6.9E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	2.5E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.8E-08	8.8E-07	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.9E-08	mg/kg-day	NA	--	--	6.8E-07	mg/kg-day	2.0E-02	mg/kg-day	3.4E-05
				Arsenic	2.69E+00	mg/kg	1.1E-08	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.7E-08	3.9E-07	mg/kg-day	3.0E-04	mg/kg-day	1.3E-03
				Cadmium	5.49E+00	mg/kg	7.5E-10	mg/kg-day	NA	--	--	2.6E-08	mg/kg-day	2.5E-05	mg/kg-day	1.1E-03
			Dermal Total								4.3E-07					2.5E-03
		Exposure Point Total									3.8E-06					9.8E-02
	Exposure Medium Total										3.8E-06					9.8E-02
	Air	Fugative Dust	Inhalation													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	2.0E-07	mg/kg-day	2.2E-02	1/(mg/kg-day)	4.5E-09	7.1E-06	mg/kg-day	2.3E-01	mg/kg-day	3.1E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	1.7E-12	mg/kg-day	NA	--	--	6.0E-11	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.6E-06	mg/kg-day	NA	--	--	5.7E-05	mg/kg-day	8.6E-04	mg/kg-day	6.6E-02
				Acetophenone	1.30E+00	mg/kg	1.1E-08	mg/kg-day	NA	--	--	3.7E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	1.6E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.2E-10	5.6E-09	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	9.0E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	6.6E-10	3.1E-09	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	3.0E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.2E-10	1.1E-08	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	8.4E-11	mg/kg-day	7.3E-02	1/(mg/kg-day)	6.1E-12	2.9E-09	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	2.4E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	4.8E-11	8.4E-08	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	1.3E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	9.8E-12	4.7E-08	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	2.9E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.1E-10	1.0E-09	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	3.8E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.8E-11	1.3E-09	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.6E-06	mg/kg-day	NA	--	--	2.4E-05	mg/kg-day	8.6E-04	mg/kg-day	2.8E-02
				Arsenic	2.69E+00	mg/kg	4.3E-12	mg/kg-day	1.5E+01	1/(mg/kg-day)	6.4E-11	1.5E-10	mg/kg-day	NA	--	--
				Cadmium	5.49E+00	mg/kg	8.7E-12	mg/kg-day	6.3E+00	1/(mg/kg-day)	5.5E-11	3.0E-10	mg/kg-day	NA	--	--
			Inhalation Total								5.9E-09					9.4E-02
		Exposure Point Total									5.9E-09					9.4E-02
	Exposure Medium Total										5.9E-09					9.4E-02
Surface Soil Total											3.8E-06					1.9E-01

TABLE 7.4.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Subsurface Soil	Ingestion													
				2-Hexanone (MBK)	3.23E-01	mg/kg	3.9E-08	mg/kg-day	NA	--	--	1.4E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	3.0E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.2E-08	1.1E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	2.9E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.1E-07	1.0E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	3.3E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.4E-08	1.1E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	3.1E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	2.2E-09	1.1E-06	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	2.6E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	5.2E-10	9.1E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	3.5E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	2.5E-10	1.2E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	2.6E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.9E-07	9.1E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	2.7E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.0E-08	9.4E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	7.7E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.2E-06	2.7E-05	mg/kg-day	3.0E-04	mg/kg-day	9.0E-02
			Ingestion Total								1.6E-06					9.0E-02
			Dermal													
				2-Hexanone (MBK)	3.23E-01	mg/kg	4.4E-10	mg/kg-day	NA	--	--	1.5E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	4.4E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.2E-09	1.6E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	4.2E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.0E-08	1.5E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	4.8E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.5E-09	1.7E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	4.5E-09	mg/kg-day	7.3E-02	1/(mg/kg-day)	3.3E-10	1.6E-07	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	3.8E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	7.6E-11	1.3E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	5.1E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	3.7E-11	1.8E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	3.8E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.8E-08	1.3E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	3.9E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.9E-09	1.4E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	2.6E-08	mg/kg-day	1.5E+00	1/(mg/kg-day)	3.9E-08	9.1E-07	mg/kg-day	3.0E-04	mg/kg-day	3.0E-03
			Dermal Total								1.1E-07					3.0E-03
		Exposure Point Total									1.7E-06					9.3E-02
	Exposure Medium Total										1.7E-06					9.3E-02
	Air	Fugative Dust	Inhalation													
				2-Hexanone (MBK)	3.23E-01	mg/kg	5.1E-13	mg/kg-day	NA	--	--	1.8E-11	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	2.9E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.1E-11	1.0E-09	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	1.4E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.0E-10	5.0E-10	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	2.7E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.0E-11	9.4E-10	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	1.2E-11	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.8E-13	4.2E-10	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	1.3E-10	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.6E-12	4.5E-09	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	2.2E-10	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.6E-12	7.7E-09	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	5.5E-12	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.0E-11	1.9E-10	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	6.0E-12	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.4E-12	2.1E-10	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	1.0E-11	mg/kg-day	1.5E+01	1/(mg/kg-day)	1.5E-10	3.5E-10	mg/kg-day	NA	--	--
			Inhalation Total								3.5E-10					--
		Exposure Point Total									3.5E-10					--
	Exposure Medium Total										3.5E-10					--
Subsurface Soil Total											1.7E-06					9.3E-02

TABLE 7.4.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater	Groundwater	Tap	Ingestion													
				1,1-Dichloroethene	3.68E-03	mg/L	4.5E-06	mg/kg-day	NA	--	--	1.6E-04	mg/kg-day	5.0E-02	mg/kg-day	3.1E-03
				1,2,3-Trichlorobenzene	2.40E-03	mg/L	2.9E-06	mg/kg-day	NA	--	--	1.0E-04	mg/kg-day	1.0E-02	mg/kg-day	1.0E-02
				1,2,4-Trimethylbenzene	3.74E-03	mg/L	4.6E-06	mg/kg-day	NA	--	--	1.6E-04	mg/kg-day	5.0E-02	mg/kg-day	3.2E-03
				1,2-Dichloroethene (cis)	1.20E-01	mg/L	1.5E-04	mg/kg-day	NA	--	--	5.1E-03	mg/kg-day	1.0E-02	mg/kg-day	5.1E-01
				1,2-Dichloroethene (total)	1.75E-01	mg/L	2.1E-04	mg/kg-day	NA	--	--	7.5E-03	mg/kg-day	1.0E-02	mg/kg-day	7.5E-01
				1,2-Dichloroethene (trans)	3.09E-03	mg/L	3.8E-06	mg/kg-day	NA	--	--	1.3E-04	mg/kg-day	2.0E-02	mg/kg-day	6.6E-03
				1,2-Dichloropropane	3.00E-04	mg/L	3.7E-07	mg/kg-day	6.8E-02	1/(mg/kg-day)	2.5E-08	1.3E-05	mg/kg-day	1.1E-03	mg/kg-day	1.2E-02
				1,3,5-Trimethylbenzene	2.73E-03	mg/L	3.3E-06	mg/kg-day	NA	--	--	1.2E-04	mg/kg-day	5.0E-02	mg/kg-day	2.3E-03
				1,4-Dichlorobenzene (p-)	2.00E-03	mg/L	2.4E-06	mg/kg-day	2.4E-02	1/(mg/kg-day)	5.9E-08	8.5E-05	mg/kg-day	3.0E-02	mg/kg-day	2.8E-03
				2-Chlorotoluene	2.25E-03	mg/L	2.7E-06	mg/kg-day	NA	--	--	9.6E-05	mg/kg-day	2.0E-02	mg/kg-day	4.8E-03
				4-Isopropyltoluene	5.47E-03	mg/L	6.7E-06	mg/kg-day	NA	--	--	2.3E-04	mg/kg-day	NA	--	--
				Benzene	9.82E-03	mg/L	1.2E-05	mg/kg-day	5.5E-02	1/(mg/kg-day)	6.6E-07	4.2E-04	mg/kg-day	4.0E-03	mg/kg-day	1.0E-01
				Bromodichloromethane	2.00E-03	mg/L	2.4E-06	mg/kg-day	6.2E-02	1/(mg/kg-day)	1.5E-07	8.5E-05	mg/kg-day	2.0E-02	mg/kg-day	4.3E-03
				Bromoform	2.77E-03	mg/L	3.4E-06	mg/kg-day	7.9E-03	1/(mg/kg-day)	2.7E-08	1.2E-04	mg/kg-day	2.0E-02	mg/kg-day	5.9E-03
				Chloroform	4.40E-04	mg/L	5.4E-07	mg/kg-day	NA	--	--	1.9E-05	mg/kg-day	1.0E-02	mg/kg-day	1.9E-03
				Ethylbenzene	7.07E-03	mg/L	8.6E-06	mg/kg-day	NA	--	--	3.0E-04	mg/kg-day	1.0E-01	mg/kg-day	3.0E-03
				Isopropylbenzene (Cumen	4.33E-03	mg/L	5.3E-06	mg/kg-day	NA	--	--	1.9E-04	mg/kg-day	1.0E-01	mg/kg-day	1.9E-03
				Naphthalene	1.65E-01	mg/L	2.0E-04	mg/kg-day	NA	--	--	7.1E-03	mg/kg-day	2.0E-02	mg/kg-day	3.5E-01
				n-Butylbenzene	4.20E-03	mg/L	5.1E-06	mg/kg-day	NA	--	--	1.8E-04	mg/kg-day	4.0E-02	mg/kg-day	4.5E-03
				Tetrachloroethene (PCE)	2.64E-03	mg/L	3.2E-06	mg/kg-day	5.4E-01	1/(mg/kg-day)	1.7E-06	1.1E-04	mg/kg-day	1.0E-02	mg/kg-day	1.1E-02
				Toluene	1.11E-02	mg/L	1.4E-05	mg/kg-day	NA	--	--	4.8E-04	mg/kg-day	2.0E-01	mg/kg-day	2.4E-03
				Trichloroethene (TCE)	3.18E-01	mg/L	3.9E-04	mg/kg-day	4.0E-01	1/(mg/kg-day)	**1.6E-04**	1.4E-02	mg/kg-day	3.0E-04	mg/kg-day	**4.5E+01**
				Vinyl Chloride	1.56E-02	mg/L	1.9E-05	mg/kg-day	1.5E+00	1/(mg/kg-day)	2.9E-05	6.7E-04	mg/kg-day	3.0E-03	mg/kg-day	2.2E-01
				Xylene, m/p-	1.01E-02	mg/L	1.2E-05	mg/kg-day	NA	--	--	4.3E-04	mg/kg-day	2.0E-01	mg/kg-day	2.1E-03
				Xylene, o-	5.34E-03	mg/L	6.5E-06	mg/kg-day	NA	--	--	2.3E-04	mg/kg-day	2.0E-01	mg/kg-day	1.1E-03
				Xylenes, total	9.56E-03	mg/L	1.2E-05	mg/kg-day	NA	--	--	4.1E-04	mg/kg-day	2.0E-01	mg/kg-day	2.0E-03
				1,1'-Biphenyl	8.87E-03	mg/L	1.1E-05	mg/kg-day	NA	--	--	3.8E-04	mg/kg-day	5.0E-02	mg/kg-day	7.6E-03
				2,4-Dimethylphenol	6.38E-02	mg/L	7.8E-05	mg/kg-day	NA	--	--	2.7E-03	mg/kg-day	2.0E-02	mg/kg-day	1.4E-01
				2-Methylnaphthalene	4.57E-02	mg/L	5.6E-05	mg/kg-day	NA	--	--	2.0E-03	mg/kg-day	4.0E-03	mg/kg-day	4.9E-01
				2-Methylphenol (o-Cresol)	2.66E-02	mg/L	3.2E-05	mg/kg-day	NA	--	--	1.1E-03	mg/kg-day	5.0E-02	mg/kg-day	2.3E-02
				4-Methylphenol (p-Cresol)	1.81E-02	mg/L	2.2E-05	mg/kg-day	NA	--	--	7.7E-04	mg/kg-day	5.0E-03	mg/kg-day	1.5E-01
				Acenaphthene	3.08E-02	mg/L	3.8E-05	mg/kg-day	NA	--	--	1.3E-03	mg/kg-day	6.0E-02	mg/kg-day	2.2E-02
				Bis(2-ethylhexyl) Phthalat	5.50E-03	mg/L	6.7E-06	mg/kg-day	1.4E-02	1/(mg/kg-day)	9.4E-08	2.4E-04	mg/kg-day	2.0E-02	mg/kg-day	1.2E-02
				Carbazole	1.01E-02	mg/L	1.2E-05	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.5E-07	4.3E-04	mg/kg-day	NA	--	--
				Dibenzofuran	1.31E-02	mg/L	1.6E-05	mg/kg-day	NA	--	--	5.6E-04	mg/kg-day	2.0E-03	mg/kg-day	2.8E-01
				Fluorene	1.07E-02	mg/L	1.3E-05	mg/kg-day	NA	--	--	4.6E-04	mg/kg-day	4.0E-02	mg/kg-day	1.1E-02
				Naphthalene	1.65E-01	mg/L	2.0E-04	mg/kg-day	NA	--	--	7.1E-03	mg/kg-day	2.0E-02	mg/kg-day	3.5E-01
			Ingestion Total								**1.9E-04**					**4.9E+01**

TABLE 7.4.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater (Cont)	Groundwater (Cont)	Tap (Cont)	Dermal	1,1-Dichloroethene	3.68E-03	mg/L	3.4E-07	mg/kg-day	NA	--	--	1.2E-05	mg/kg-day	5.0E-02	mg/kg-day	2.4E-04
				1,2,3-Trichlorobenzene	2.40E-03	mg/L	2.3E-06	mg/kg-day	NA	--	--	8.1E-05	mg/kg-day	1.0E-02	mg/kg-day	8.1E-03
				1,2,4-Trimethylbenzene	3.74E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				1,2-Dichloroethene (cis)	1.20E-01	mg/L	7.2E-06	mg/kg-day	NA	--	--	2.5E-04	mg/kg-day	1.0E-02	mg/kg-day	2.5E-02
				1,2-Dichloroethene (total)	1.75E-01	mg/L	1.0E-05	mg/kg-day	NA	--	--	3.7E-04	mg/kg-day	1.0E-02	mg/kg-day	3.7E-02
				1,2-Dichloroethene (trans)	3.09E-03	mg/L	2.6E-07	mg/kg-day	NA	--	--	9.1E-06	mg/kg-day	2.0E-02	mg/kg-day	4.6E-04
				1,2-Dichloropropane	3.00E-04	mg/L	2.0E-08	mg/kg-day	6.8E-02	1/(mg/kg-day)	1.4E-09	7.1E-07	mg/kg-day	1.1E-03	mg/kg-day	6.5E-04
				1,3,5-Trimethylbenzene	2.73E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				1,4-Dichlorobenzene (p-)	2.00E-03	mg/L	9.1E-07	mg/kg-day	2.4E-02	1/(mg/kg-day)	2.2E-08	3.2E-05	mg/kg-day	3.0E-02	mg/kg-day	1.1E-03
				2-Chlorotoluene	2.25E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	2.0E-02	mg/kg-day	--
				4-Isopropyltoluene	5.47E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	NA	--	--
				Benzene	9.82E-03	mg/L	1.0E-06	mg/kg-day	5.5E-02	1/(mg/kg-day)	5.6E-08	3.6E-05	mg/kg-day	4.0E-03	mg/kg-day	8.9E-03
				Bromodichloromethane	2.00E-03	mg/L	1.1E-07	mg/kg-day	6.2E-02	1/(mg/kg-day)	6.8E-09	3.9E-06	mg/kg-day	2.0E-02	mg/kg-day	1.9E-04
				Bromoform	2.77E-03	mg/L	1.3E-07	mg/kg-day	7.9E-03	1/(mg/kg-day)	1.0E-09	4.6E-06	mg/kg-day	2.0E-02	mg/kg-day	2.3E-04
				Chloroform	4.40E-04	mg/L	2.7E-08	mg/kg-day	NA	--	--	9.5E-07	mg/kg-day	1.0E-02	mg/kg-day	9.5E-05
				Ethylbenzene	7.07E-03	mg/L	2.9E-06	mg/kg-day	NA	--	--	1.0E-04	mg/kg-day	1.0E-01	mg/kg-day	1.0E-03
				Isopropylbenzene (Cumen	4.33E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	1.0E-01	mg/kg-day	--
				Naphthalene	1.65E-01	mg/L	7.4E-05	mg/kg-day	NA	--	--	2.6E-03	mg/kg-day	2.0E-02	mg/kg-day	1.3E-01
				n-Butylbenzene	4.20E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	4.0E-02	mg/kg-day	--
				Tetrachloroethene (PCE)	2.64E-03	mg/L	1.1E-06	mg/kg-day	5.4E-01	1/(mg/kg-day)	5.7E-07	3.7E-05	mg/kg-day	1.0E-02	mg/kg-day	3.7E-03
				Toluene	1.11E-02	mg/L	0.0E+00	mg/kg-day	NA	--	--	0.0E+00	mg/kg-day	2.0E-01	mg/kg-day	0.0E+00
				Trichloroethene (TCE)	3.18E-01	mg/L	3.7E-05	mg/kg-day	4.0E-01	1/(mg/kg-day)	1.5E-05	1.3E-03	mg/kg-day	3.0E-04	mg/kg-day	**4.3E+00**
				Vinyl Chloride	1.56E-02	mg/L	5.5E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	8.2E-07	1.9E-05	mg/kg-day	3.0E-03	mg/kg-day	6.4E-03
				Xylene, m/p-	1.01E-02	mg/L	4.4E-06	mg/kg-day	NA	--	--	1.5E-04	mg/kg-day	2.0E-01	mg/kg-day	7.6E-04
				Xylene, o-	5.34E-03	mg/L	2.0E-06	mg/kg-day	NA	--	--	7.2E-05	mg/kg-day	2.0E-01	mg/kg-day	3.6E-04
				Xylenes, total	9.56E-03	mg/L	2.4E-07	mg/kg-day	NA	--	--	8.3E-06	mg/kg-day	2.0E-01	mg/kg-day	4.1E-05
				1,1'-Biphenyl	8.87E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				2,4-Dimethylphenol	6.38E-02	mg/L	6.5E-06	mg/kg-day	NA	--	--	2.3E-04	mg/kg-day	2.0E-02	mg/kg-day	1.1E-02
				2-Methylnaphthalene	4.57E-02	mg/L	3.8E-05	mg/kg-day	NA	--	--	1.3E-03	mg/kg-day	4.0E-03	mg/kg-day	3.3E-01
				2-Methylphenol (o-Cresol)	2.66E-02	mg/L	1.7E-06	mg/kg-day	NA	--	--	6.0E-05	mg/kg-day	5.0E-02	mg/kg-day	1.2E-03
				4-Methylphenol (p-Cresol)	1.81E-02	mg/L	1.2E-06	mg/kg-day	NA	--	--	4.1E-05	mg/kg-day	5.0E-03	mg/kg-day	8.2E-03
				Acenaphthene	3.08E-02	mg/L	3.5E-05	mg/kg-day	NA	--	--	1.2E-03	mg/kg-day	6.0E-02	mg/kg-day	2.0E-02
				Bis(2-ethylhexyl) Phthalat	5.50E-03	mg/L	7.2E-06	mg/kg-day	1.4E-02	1/(mg/kg-day)	1.0E-07	2.5E-04	mg/kg-day	2.0E-02	mg/kg-day	1.3E-02
				Carbazole	1.01E-02	mg/L	6.5E-06	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.3E-07	2.3E-04	mg/kg-day	NA	--	--
				Dibenzofuran	1.31E-02	mg/L	1.5E-05	mg/kg-day	NA	--	--	5.4E-04	mg/kg-day	2.0E-03	mg/kg-day	2.7E-01
				Fluorene	1.07E-02	mg/L	1.8E-05	mg/kg-day	NA	--	--	6.2E-04	mg/kg-day	4.0E-02	mg/kg-day	1.6E-02
				Naphthalene	1.65E-01	mg/L	7.4E-05	mg/kg-day	NA	--	--	2.6E-03	mg/kg-day	2.0E-02	mg/kg-day	1.3E-01
			Dermal Total								1.7E-05					**5.4E+00**
		Exposure Point Total									**2.0E-04**					**5.4E+01**
	Exposure Medium Total										**2.0E-04**					**5.4E+01**
Groundwater Total											**2.0E-04**					**5.4E+01**
											Total of Receptor Risks Across All Media	**2.1E-04**		Total of Receptor Hazards Across All Media		**5.4E+01**

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Surface Soil	Ingestion													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	5.9E-07	mg/kg-day	2.4E-02	1/(mg/kg-day)	1.4E-08	1.7E-06	mg/kg-day	3.0E-02	mg/kg-day	5.7E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	5.1E-07	mg/kg-day	NA	--	--	1.5E-06	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.6E-05	mg/kg-day	NA	--	--	4.6E-05	mg/kg-day	2.0E-02	mg/kg-day	2.3E-03
				Acetophenone	1.30E+00	mg/kg	6.1E-07	mg/kg-day	NA	--	--	1.8E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	6.4E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.7E-07	1.9E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	6.9E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	5.0E-06	2.0E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.4E-06	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.0E-06	4.1E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	8.2E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	6.0E-08	2.4E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	1.9E-06	mg/kg-day	2.0E-02	1/(mg/kg-day)	3.7E-08	5.4E-06	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	8.2E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	6.0E-09	2.4E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	5.2E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.8E-06	1.5E-06	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	6.6E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.8E-07	1.9E-06	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	6.6E-06	mg/kg-day	NA	--	--	1.9E-05	mg/kg-day	2.0E-02	mg/kg-day	9.7E-04
				Arsenic	2.69E+00	mg/kg	1.3E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.9E-06	3.7E-06	mg/kg-day	3.0E-04	mg/kg-day	1.2E-02
				Cadmium	5.49E+00	mg/kg	2.6E-06	mg/kg-day	NA	--	--	7.5E-06	mg/kg-day	5.0E-04	mg/kg-day	1.5E-02
			Ingestion Total								1.3E-05					3.1E-02
			Dermal													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	2.3E-08	mg/kg-day	2.4E-02	1/(mg/kg-day)	5.6E-10	6.8E-08	mg/kg-day	3.0E-02	mg/kg-day	2.3E-06
				2-Hexanone (MBK)	1.08E+00	mg/kg	2.0E-08	mg/kg-day	NA	--	--	5.9E-08	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	6.3E-07	mg/kg-day	NA	--	--	1.8E-06	mg/kg-day	2.0E-02	mg/kg-day	9.1E-05
				Acetophenone	1.30E+00	mg/kg	2.4E-07	mg/kg-day	NA	--	--	7.1E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	3.3E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.4E-07	9.7E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	3.6E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.6E-06	1.0E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	7.3E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	5.3E-07	2.1E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	4.3E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	3.1E-08	1.2E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	9.6E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.9E-08	2.8E-06	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	4.2E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	3.1E-09	1.2E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	2.7E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.0E-06	7.9E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	3.4E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.5E-07	1.0E-06	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	2.6E-07	mg/kg-day	NA	--	--	7.7E-07	mg/kg-day	2.0E-02	mg/kg-day	3.9E-05
				Arsenic	2.69E+00	mg/kg	1.5E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	2.3E-07	4.4E-07	mg/kg-day	3.0E-04	mg/kg-day	1.5E-03
				Cadmium	5.49E+00	mg/kg	1.0E-08	mg/kg-day	NA	--	--	3.0E-08	mg/kg-day	2.5E-05	mg/kg-day	1.2E-03
			Dermal Total								5.9E-06					2.8E-03
		Exposure Point Total									1.9E-05					3.3E-02
	Exposure Medium Total										1.9E-05					3.3E-02
	Air	Fugative Dust	Inhalation													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	3.7E-07	mg/kg-day	2.2E-02	1/(mg/kg-day)	8.2E-09	1.1E-06	mg/kg-day	2.3E-01	mg/kg-day	4.7E-06
				2-Hexanone (MBK)	1.08E+00	mg/kg	3.2E-12	mg/kg-day	NA	--	--	9.3E-12	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	3.0E-06	mg/kg-day	NA	--	--	8.7E-06	mg/kg-day	8.6E-04	mg/kg-day	1.0E-02
				Acetophenone	1.30E+00	mg/kg	2.0E-08	mg/kg-day	NA	--	--	5.7E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	2.9E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.2E-10	8.6E-10	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	1.7E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.2E-09	4.8E-10	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	5.6E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.1E-10	1.6E-09	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	1.6E-10	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.1E-11	4.5E-10	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	4.4E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	8.8E-11	1.3E-08	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	2.5E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.8E-11	7.2E-09	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	5.3E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.9E-10	1.6E-10	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	7.1E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	5.2E-11	2.1E-10	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.3E-06	mg/kg-day	NA	--	--	3.7E-06	mg/kg-day	8.6E-04	mg/kg-day	4.3E-03
				Arsenic	2.69E+00	mg/kg	7.9E-12	mg/kg-day	1.5E+01	1/(mg/kg-day)	1.2E-10	2.3E-11	mg/kg-day	NA	--	--
				Cadmium	5.49E+00	mg/kg	1.6E-11	mg/kg-day	6.3E+00	1/(mg/kg-day)	1.0E-10	4.7E-11	mg/kg-day	NA	--	--
			Inhalation Total								1.1E-08					1.4E-02
		Exposure Point Total									1.1E-08					1.4E-02
	Exposure Medium Total										1.1E-08					1.4E-02
Surface Soil Total											1.9E-05					4.8E-02

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Subsurface Soil	Ingestion													
				2-Hexanone (MBK)	3.23E-01	mg/kg	1.5E-07	mg/kg-day	NA	--	--	4.4E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	1.2E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	8.5E-08	3.4E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	1.1E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	8.0E-07	3.2E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	1.3E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	9.2E-08	3.7E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	1.2E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.6E-09	3.5E-07	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	1.0E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.0E-09	2.9E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	1.3E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	9.7E-10	3.9E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	1.0E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.3E-07	2.9E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	1.0E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.6E-08	3.0E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	3.0E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.5E-06	8.7E-06	mg/kg-day	3.0E-04	mg/kg-day	2.9E-02
			Ingestion Total								6.3E-06					2.9E-02
			Dermal													
				2-Hexanone (MBK)	3.23E-01	mg/kg	6.1E-09	mg/kg-day	NA	--	--	1.8E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	6.1E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.4E-08	1.8E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	5.7E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.2E-07	1.7E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	6.5E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.8E-08	1.9E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	6.1E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	4.5E-09	1.8E-07	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	5.2E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.0E-09	1.5E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	6.9E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	5.1E-10	2.0E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	5.2E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.8E-07	1.5E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	5.4E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.9E-08	1.6E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	3.6E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	5.3E-07	1.0E-06	mg/kg-day	3.0E-04	mg/kg-day	3.5E-03
			Dermal Total								1.5E-06					3.5E-03
		Exposure Point Total									7.7E-06					3.2E-02
	Exposure Medium Total										7.7E-06					3.2E-02
	Air	Fugative Dust	Inhalation													
				2-Hexanone (MBK)	3.23E-01	mg/kg	9.5E-13	mg/kg-day	NA	--	--	2.8E-12	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	5.4E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.9E-11	1.6E-10	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	2.6E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.9E-10	7.7E-11	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	5.0E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.6E-11	1.5E-10	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	2.2E-11	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.6E-12	6.5E-11	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	2.4E-10	mg/kg-day	2.0E-02	1/(mg/kg-day)	4.8E-12	6.9E-10	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	4.0E-10	mg/kg-day	7.3E-03	1/(mg/kg-day)	3.0E-12	1.2E-09	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	1.0E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.4E-11	3.0E-11	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	1.1E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	8.1E-12	3.2E-11	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	1.9E-11	mg/kg-day	1.5E+01	1/(mg/kg-day)	2.8E-10	5.4E-11	mg/kg-day	NA	--	--
			Inhalation Total								6.4E-10					--
		Exposure Point Total									6.4E-10					--
	Exposure Medium Total										6.4E-10					--
Subsurface Soil Total											7.7E-06					3.2E-02

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Deep Groundwater	Deep Groundwater	Tap	Ingestion													
				1,2-Dichloroethene (cis)	5.84E-02	mg/L	5.5E-04	mg/kg-day	NA	--	--	1.6E-03	mg/kg-day	1.0E-02	mg/kg-day	1.6E-01
				1,2-Dichloroethene (trans)	4.15E-03	mg/L	3.9E-05	mg/kg-day	NA	--	--	1.1E-04	mg/kg-day	2.0E-02	mg/kg-day	5.7E-03
				Benzene	1.21E-03	mg/L	1.1E-05	mg/kg-day	5.5E-02	1/(mg/kg-day)	6.3E-07	3.3E-05	mg/kg-day	4.0E-03	mg/kg-day	8.3E-03
				Naphthalene	1.00E-03	mg/L	9.4E-06	mg/kg-day	NA	--	--	2.7E-05	mg/kg-day	2.0E-02	mg/kg-day	1.4E-03
				Trichloroethene (TCE)	4.55E-02	mg/L	4.3E-04	mg/kg-day	4.0E-01	1/(mg/kg-day)	**1.7E-04**	1.2E-03	mg/kg-day	3.0E-04	mg/kg-day	**4.2E+00**
				Vinyl Chloride	5.30E-02	mg/L	5.0E-04	mg/kg-day	1.5E+00	1/(mg/kg-day)	**7.5E-04**	1.5E-03	mg/kg-day	3.0E-03	mg/kg-day	4.8E-01
			Ingestion Total								**9.2E-04**					**4.8E+00**
			Dermal													
				1,2-Dichloroethene (cis)	5.84E-02	mg/L	4.8E-05	mg/kg-day	NA	--	--	1.4E-04	mg/kg-day	1.0E-02	mg/kg-day	1.4E-02
				1,2-Dichloroethene (trans)	4.15E-03	mg/L	4.9E-06	mg/kg-day	NA	--	--	1.4E-05	mg/kg-day	2.0E-02	mg/kg-day	7.1E-04
				Benzene	1.21E-03	mg/L	1.7E-06	mg/kg-day	5.5E-02	1/(mg/kg-day)	9.6E-08	5.1E-06	mg/kg-day	4.0E-03	mg/kg-day	1.3E-03
				Naphthalene	1.00E-03	mg/L	6.3E-06	mg/kg-day	NA	--	--	1.8E-05	mg/kg-day	2.0E-02	mg/kg-day	9.1E-04
				Trichloroethene (TCE)	4.55E-02	mg/L	7.4E-05	mg/kg-day	4.0E-01	1/(mg/kg-day)	3.0E-05	2.2E-04	mg/kg-day	3.0E-04	mg/kg-day	7.2E-01
				Vinyl Chloride	5.30E-02	mg/L	2.7E-05	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.0E-05	7.8E-05	mg/kg-day	3.0E-03	mg/kg-day	2.6E-02
			Dermal Total								7.0E-05					7.6E-01
		Exposure Point Total									**9.9E-04**					**5.6E+00**
	Exposure Medium Total										**9.9E-04**					**5.6E+00**
	Air	Water Vapors from Showerhead	Inhalation													
				1,2-Dichloroethene (cis)	5.84E-02	mg/L	5.5E-04	mg/kg-day	NA	--	--	1.6E-03	mg/kg-day	1.0E-02	mg/kg-day	1.6E-01
				1,2-Dichloroethene (trans)	4.15E-03	mg/L	3.9E-05	mg/kg-day	NA	--	--	1.1E-04	mg/kg-day	2.0E-02	mg/kg-day	5.7E-03
				Benzene	1.21E-03	mg/L	1.1E-05	mg/kg-day	5.5E-02	1/(mg/kg-day)	6.3E-07	3.3E-05	mg/kg-day	4.0E-03	mg/kg-day	8.3E-03
				Naphthalene	1.00E-03	mg/L	9.4E-06	mg/kg-day	NA	--	--	2.7E-05	mg/kg-day	2.0E-02	mg/kg-day	1.4E-03
				Trichloroethene (TCE)	4.55E-02	mg/L	4.3E-04	mg/kg-day	4.0E-01	1/(mg/kg-day)	**1.7E-04**	1.2E-03	mg/kg-day	3.0E-04	mg/kg-day	**4.2E+00**
				Vinyl Chloride	5.30E-02	mg/L	5.0E-04	mg/kg-day	1.5E+00	1/(mg/kg-day)	**7.5E-04**	1.5E-03	mg/kg-day	3.0E-03	mg/kg-day	4.8E-01
			Inhalation Total								**9.2E-04**					**4.8E+00**
		Exposure Point Total									**9.2E-04**					**4.8E+00**
	Exposure Medium Total										**9.2E-04**					**4.8E+00**
Deep Groundwater Total											**1.9E-03**					**1.0E+01**
											Total of Receptor Risks Across All Media	**1.9E-03**		Total of Receptor Hazards Across All Media		**1.0E+01**

TABLE 7.5.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Surface Soil	Ingestion													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	5.7E-08	mg/kg-day	2.4E-02	1/(mg/kg-day)	1.4E-09	5.7E-07	mg/kg-day	3.0E-02	mg/kg-day	1.9E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	4.9E-08	mg/kg-day	NA	--	--	4.9E-07	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.5E-06	mg/kg-day	NA	--	--	1.5E-05	mg/kg-day	2.0E-02	mg/kg-day	7.6E-04
				Acetophenone	1.30E+00	mg/kg	5.9E-08	mg/kg-day	NA	--	--	5.9E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	6.2E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.5E-08	6.2E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	6.7E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.9E-07	6.7E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.4E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.0E-07	1.4E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	8.0E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	5.9E-09	8.0E-07	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	1.8E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	3.6E-09	1.8E-06	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	8.0E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	5.8E-10	8.0E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	5.1E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.7E-07	5.1E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	6.5E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.7E-08	6.5E-07	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	6.5E-07	mg/kg-day	NA	--	--	6.5E-06	mg/kg-day	2.0E-02	mg/kg-day	3.2E-04
				Arsenic	2.69E+00	mg/kg	1.2E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.8E-07	1.2E-06	mg/kg-day	3.0E-04	mg/kg-day	4.1E-03
				Cadmium	5.49E+00	mg/kg	2.5E-07	mg/kg-day	NA	--	--	2.5E-06	mg/kg-day	5.0E-04	mg/kg-day	5.0E-03
			Ingestion Total								1.3E-06					1.0E-02
			Dermal													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	6.5E-10	mg/kg-day	2.4E-02	1/(mg/kg-day)	1.6E-11	6.5E-09	mg/kg-day	3.0E-02	mg/kg-day	2.2E-07
				2-Hexanone (MBK)	1.08E+00	mg/kg	5.6E-10	mg/kg-day	NA	--	--	5.6E-09	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.7E-08	mg/kg-day	NA	--	--	1.7E-07	mg/kg-day	2.0E-02	mg/kg-day	8.7E-06
				Acetophenone	1.30E+00	mg/kg	6.8E-09	mg/kg-day	NA	--	--	6.8E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	9.2E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	6.7E-09	9.2E-08	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	1.0E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.3E-08	1.0E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	2.0E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.5E-08	2.0E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	1.2E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.7E-10	1.2E-07	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	2.7E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	5.4E-10	2.7E-07	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	1.2E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	8.6E-11	1.2E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	7.6E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	5.5E-08	7.6E-08	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	9.6E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.0E-09	9.6E-08	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	7.4E-09	mg/kg-day	NA	--	--	7.4E-08	mg/kg-day	2.0E-02	mg/kg-day	3.7E-06
				Arsenic	2.69E+00	mg/kg	4.2E-09	mg/kg-day	1.5E+00	1/(mg/kg-day)	6.3E-09	4.2E-08	mg/kg-day	3.0E-04	mg/kg-day	1.4E-04
				Cadmium	5.49E+00	mg/kg	2.9E-10	mg/kg-day	NA	--	--	2.9E-09	mg/kg-day	2.5E-05	mg/kg-day	1.1E-04
			Dermal Total								1.6E-07					2.7E-04
		Exposure Point Total									1.4E-06					1.1E-02
	Exposure Medium Total										1.4E-06					1.1E-02
	Air	Fugative Dust	Inhalation													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	7.3E-08	mg/kg-day	2.2E-02	1/(mg/kg-day)	1.6E-09	7.3E-07	mg/kg-day	2.3E-01	mg/kg-day	3.2E-06
				2-Hexanone (MBK)	1.08E+00	mg/kg	6.2E-13	mg/kg-day	NA	--	--	6.2E-12	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	5.8E-07	mg/kg-day	NA	--	--	5.8E-06	mg/kg-day	8.6E-04	mg/kg-day	6.8E-03
				Acetophenone	1.30E+00	mg/kg	3.8E-09	mg/kg-day	NA	--	--	3.8E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	5.8E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.2E-11	5.8E-10	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	3.2E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.4E-10	3.2E-10	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.1E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.9E-11	1.1E-09	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	3.0E-11	mg/kg-day	7.3E-02	1/(mg/kg-day)	2.2E-12	3.0E-10	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	8.6E-10	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.7E-11	8.6E-09	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	4.8E-10	mg/kg-day	7.3E-03	1/(mg/kg-day)	3.5E-12	4.8E-09	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	1.0E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.6E-11	1.0E-10	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	1.4E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.0E-11	1.4E-10	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	5.8E-07	mg/kg-day	NA	--	--	2.5E-06	mg/kg-day	8.6E-04	mg/kg-day	2.9E-03
				Arsenic	2.69E+00	mg/kg	1.5E-12	mg/kg-day	1.5E+01	1/(mg/kg-day)	2.3E-11	1.5E-11	mg/kg-day	NA	--	--
				Cadmium	5.49E+00	mg/kg	3.1E-12	mg/kg-day	6.3E+00	1/(mg/kg-day)	2.0E-11	3.1E-11	mg/kg-day	NA	--	--
			Inhalation Total								2.1E-09					9.7E-03
		Exposure Point Total									2.1E-09					9.7E-03
	Exposure Medium Total										2.1E-09					9.7E-03
Surface Soil Total											1.4E-06					2.0E-02

TABLE 7.5.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Subsurface Soil	Ingestion													
				2-Hexanone (MBK)	3.23E-01	mg/kg	1.5E-08	mg/kg-day	NA	--	--	1.5E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	1.1E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	8.3E-09	1.1E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	1.1E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.8E-08	1.1E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	1.2E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	9.0E-09	1.2E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	1.2E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.4E-10	1.2E-07	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	9.7E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.9E-10	9.7E-08	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	9.5E-11	1.3E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	9.7E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.1E-08	9.7E-08	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	1.0E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.4E-09	1.0E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	2.9E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.4E-07	2.9E-06	mg/kg-day	3.0E-04	mg/kg-day	9.7E-03
			Ingestion Total								6.1E-07					9.7E-03
			Dermal													
				2-Hexanone (MBK)	3.23E-01	mg/kg	1.2E-09	mg/kg-day	NA	--	--	1.2E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	1.2E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	8.6E-09	1.2E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	1.1E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	8.1E-08	1.1E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	9.3E-09	1.3E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	1.2E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.7E-10	1.2E-07	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	1.0E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.0E-10	1.0E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	1.3E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	9.9E-11	1.3E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	1.0E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.4E-08	1.0E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	1.0E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.6E-09	1.0E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	7.0E-08	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.0E-07	7.0E-07	mg/kg-day	3.0E-04	mg/kg-day	2.3E-03
			Dermal Total								2.9E-07					2.3E-03
		Exposure Point Total									9.0E-07					1.2E-02
	Exposure Medium Total										9.0E-07					1.2E-02
	Air	Fugative Dust	Inhalation													
				2-Hexanone (MBK)	3.23E-01	mg/kg	1.8E-13	mg/kg-day	NA	--	--	1.8E-12	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	1.1E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.7E-12	1.1E-10	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	5.1E-12	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.8E-11	5.1E-11	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	9.7E-12	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.1E-12	9.7E-11	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	4.4E-12	mg/kg-day	7.3E-02	1/(mg/kg-day)	3.2E-13	4.4E-11	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	4.6E-11	mg/kg-day	2.0E-02	1/(mg/kg-day)	9.3E-13	4.6E-10	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	7.9E-11	mg/kg-day	7.3E-03	1/(mg/kg-day)	5.8E-13	7.9E-10	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	2.0E-12	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.4E-11	2.0E-11	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	2.2E-12	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.6E-12	2.2E-11	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	3.6E-12	mg/kg-day	1.5E+01	1/(mg/kg-day)	5.5E-11	3.6E-11	mg/kg-day	NA	--	--
			Inhalation Total								1.2E-10					--
		Exposure Point Total									1.2E-10					--
	Exposure Medium Total										1.2E-10					--
Subsurface Soil Total											9.0E-07					1.2E-02

TABLE 7.5.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Deep Groundwater	Deep Groundwater	Tap	Ingestion													
				1,2-Dichloroethene (cis)	5.84E-02	mg/L	7.5E-05	mg/kg-day	NA	--	--	7.5E-04	mg/kg-day	1.0E-02	mg/kg-day	7.5E-02
				1,2-Dichloroethene (trans)	4.15E-03	mg/L	5.3E-06	mg/kg-day	NA	--	--	5.3E-05	mg/kg-day	2.0E-02	mg/kg-day	2.7E-03
				Benzene	1.21E-03	mg/L	1.6E-06	mg/kg-day	5.5E-02	1/(mg/kg-day)	8.5E-08	1.6E-05	mg/kg-day	4.0E-03	mg/kg-day	3.9E-03
				Naphthalene	1.00E-03	mg/L	1.3E-06	mg/kg-day	NA	--	--	1.3E-05	mg/kg-day	2.0E-02	mg/kg-day	6.4E-04
				Trichloroethene (TCE)	4.55E-02	mg/L	5.8E-05	mg/kg-day	4.0E-01	1/(mg/kg-day)	2.3E-05	5.8E-04	mg/kg-day	3.0E-04	mg/kg-day	**1.9E+00**
				Vinyl Chloride	5.30E-02	mg/L	6.8E-05	mg/kg-day	1.5E+00	1/(mg/kg-day)	**1.0E-04**	6.8E-04	mg/kg-day	3.0E-03	mg/kg-day	2.3E-01
			Ingestion Total								**1.3E-04**					**2.3E+00**
			Dermal													
				1,2-Dichloroethene (cis)	5.84E-02	mg/L	6.2E-06	mg/kg-day	NA	--	--	6.2E-05	mg/kg-day	1.0E-02	mg/kg-day	6.2E-03
				1,2-Dichloroethene (trans)	4.15E-03	mg/L	6.3E-07	mg/kg-day	NA	--	--	6.3E-06	mg/kg-day	2.0E-02	mg/kg-day	3.1E-04
				Benzene	1.21E-03	mg/L	2.2E-07	mg/kg-day	5.5E-02	1/(mg/kg-day)	1.2E-08	2.2E-06	mg/kg-day	4.0E-03	mg/kg-day	5.6E-04
				Naphthalene	1.00E-03	mg/L	8.0E-07	mg/kg-day	NA	--	--	8.0E-06	mg/kg-day	2.0E-02	mg/kg-day	4.0E-04
				Trichloroethene (TCE)	4.55E-02	mg/L	9.5E-06	mg/kg-day	4.0E-01	1/(mg/kg-day)	3.8E-06	9.5E-05	mg/kg-day	3.0E-04	mg/kg-day	3.2E-01
				Vinyl Chloride	5.30E-02	mg/L	3.3E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	5.0E-06	3.3E-05	mg/kg-day	3.0E-03	mg/kg-day	1.1E-02
			Dermal Total								8.8E-06					3.3E-01
		Exposure Point Total									**1.3E-04**					**2.6E+00**
	Exposure Medium Total										**1.3E-04**					**2.6E+00**
	Air	Water Vapors from Showerhead	Inhalation													
				1,2-Dichloroethene (cis)	5.84E-02	mg/L	7.5E-05	mg/kg-day	NA	--	--	7.5E-04	mg/kg-day	1.0E-02	mg/kg-day	7.5E-02
				1,2-Dichloroethene (trans)	4.15E-03	mg/L	5.3E-06	mg/kg-day	NA	--	--	5.3E-05	mg/kg-day	2.0E-02	mg/kg-day	2.7E-03
				Benzene	1.21E-03	mg/L	1.6E-06	mg/kg-day	5.5E-02	1/(mg/kg-day)	8.5E-08	1.6E-05	mg/kg-day	4.0E-03	mg/kg-day	3.9E-03
				Naphthalene	1.00E-03	mg/L	1.3E-06	mg/kg-day	NA	--	--	1.3E-05	mg/kg-day	2.0E-02	mg/kg-day	6.4E-04
				Trichloroethene (TCE)	4.55E-02	mg/L	5.8E-05	mg/kg-day	4.0E-01	1/(mg/kg-day)	2.3E-05	5.8E-04	mg/kg-day	3.0E-04	mg/kg-day	**1.9E+00**
				Vinyl Chloride	5.30E-02	mg/L	6.8E-05	mg/kg-day	1.5E+00	1/(mg/kg-day)	**1.0E-04**	6.8E-04	mg/kg-day	3.0E-03	mg/kg-day	2.3E-01
			Inhalation Total								**1.3E-04**					**2.3E+00**
		Exposure Point Total									**1.3E-04**					**2.3E+00**
	Exposure Medium Total										**1.3E-04**					**2.3E+00**
Deep Groundwater Total											**2.6E-04**					**4.8E+00**
											Total of Receptor Risks Across All Media	**2.6E-04**		Total of Receptor Hazards Across All Media		**4.9E+00**

TABLE 7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Surface Soil	Ingestion													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	1.4E-06	mg/kg-day	2.4E-02	1/(mg/kg-day)	3.3E-08	1.6E-05	mg/kg-day	3.0E-02	mg/kg-day	5.3E-04
				2-Hexanone (MBK)	1.08E+00	mg/kg	1.2E-06	mg/kg-day	NA	--	--	1.4E-05	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	3.7E-05	mg/kg-day	NA	--	--	4.3E-04	mg/kg-day	2.0E-02	mg/kg-day	2.1E-02
				Acetophenone	1.30E+00	mg/kg	1.4E-06	mg/kg-day	NA	--	--	1.7E-05	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	1.5E-06	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.1E-06	1.7E-05	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	1.6E-06	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.2E-05	1.9E-05	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	3.3E-06	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.4E-06	3.8E-05	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	1.9E-06	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.4E-07	2.2E-05	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	4.3E-06	mg/kg-day	2.0E-02	1/(mg/kg-day)	8.7E-08	5.1E-05	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	1.9E-06	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.4E-08	2.2E-05	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	1.2E-06	mg/kg-day	7.3E+00	1/(mg/kg-day)	8.9E-06	1.4E-05	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	1.5E-06	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.1E-06	1.8E-05	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.5E-05	mg/kg-day	NA	--	--	1.8E-04	mg/kg-day	2.0E-02	mg/kg-day	9.0E-03
				Arsenic	2.69E+00	mg/kg	2.9E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.4E-06	3.4E-05	mg/kg-day	3.0E-04	mg/kg-day	1.1E-01
				Cadmium	5.49E+00	mg/kg	6.0E-06	mg/kg-day	NA	--	--	7.0E-05	mg/kg-day	5.0E-04	mg/kg-day	1.4E-01
			Ingestion Total								3.0E-05					2.9E-01
			Dermal													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	3.8E-08	mg/kg-day	2.4E-02	1/(mg/kg-day)	9.2E-10	4.5E-07	mg/kg-day	3.0E-02	mg/kg-day	1.5E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	3.3E-08	mg/kg-day	NA	--	--	3.9E-07	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.0E-06	mg/kg-day	NA	--	--	1.2E-05	mg/kg-day	2.0E-02	mg/kg-day	6.0E-04
				Acetophenone	1.30E+00	mg/kg	4.0E-07	mg/kg-day	NA	--	--	4.6E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	5.4E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.0E-07	6.3E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	5.9E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.3E-06	6.8E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.2E-06	mg/kg-day	7.3E-01	1/(mg/kg-day)	8.7E-07	1.4E-05	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	7.0E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	5.1E-08	8.2E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	1.6E-06	mg/kg-day	2.0E-02	1/(mg/kg-day)	3.2E-08	1.8E-05	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	6.9E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	5.1E-09	8.1E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	4.4E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.2E-06	5.2E-06	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	5.6E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.1E-07	6.6E-06	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	4.3E-07	mg/kg-day	NA	--	--	5.1E-06	mg/kg-day	2.0E-02	mg/kg-day	2.5E-04
				Arsenic	2.69E+00	mg/kg	2.5E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	3.7E-07	2.9E-06	mg/kg-day	3.0E-04	mg/kg-day	9.6E-03
				Cadmium	5.49E+00	mg/kg	1.7E-08	mg/kg-day	NA	--	--	2.0E-07	mg/kg-day	2.5E-05	mg/kg-day	7.9E-03
			Dermal Total								9.7E-06					1.8E-02
		Exposure Point Total									4.0E-05					3.0E-01
	Exposure Medium Total										4.0E-05					3.0E-01
	Air	Fugative Dust	Inhalation													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	9.1E-07	mg/kg-day	2.2E-02	1/(mg/kg-day)	2.0E-08	1.1E-05	mg/kg-day	2.3E-01	mg/kg-day	4.6E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	7.7E-12	mg/kg-day	NA	--	--	9.0E-11	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	7.3E-06	mg/kg-day	NA	--	--	8.5E-05	mg/kg-day	8.6E-04	mg/kg-day	9.9E-02
				Acetophenone	1.30E+00	mg/kg	4.7E-08	mg/kg-day	NA	--	--	5.5E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	7.2E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	5.2E-10	8.3E-09	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	4.0E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.9E-09	4.7E-09	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	1.3E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	9.8E-10	1.6E-08	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	3.8E-10	mg/kg-day	7.3E-02	1/(mg/kg-day)	2.8E-11	4.4E-09	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	1.1E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.1E-10	1.3E-07	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	6.0E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	4.4E-11	7.0E-08	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	1.3E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	9.4E-10	1.5E-09	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	1.7E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.3E-10	2.0E-09	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	3.1E-06	mg/kg-day	NA	--	--	3.6E-05	mg/kg-day	8.6E-04	mg/kg-day	4.2E-02
				Arsenic	2.69E+00	mg/kg	1.9E-11	mg/kg-day	1.5E+01	1/(mg/kg-day)	2.9E-10	2.2E-10	mg/kg-day	NA	--	--
				Cadmium	5.49E+00	mg/kg	3.9E-11	mg/kg-day	6.3E+00	1/(mg/kg-day)	2.5E-10	4.6E-10	mg/kg-day	NA	--	--
			Inhalation Total								2.6E-08					1.4E-01
		Exposure Point Total									2.6E-08					1.4E-01
	Exposure Medium Total										2.6E-08					1.4E-01
Surface Soil Total											4.0E-05					4.4E-01

TABLE 7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Subsurface Soil	Ingestion													
				2-Hexanone (MBK)	3.23E-01	mg/kg	3.5E-07	mg/kg-day	NA	--	--	4.1E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	2.7E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.0E-07	3.2E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	2.6E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.9E-06	3.0E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	2.9E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.1E-07	3.4E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	2.8E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	2.0E-08	3.2E-06	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	2.3E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	4.7E-09	2.7E-06	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	3.1E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	2.3E-09	3.6E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	2.3E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.7E-06	2.7E-06	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	2.4E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.8E-07	2.8E-06	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	7.0E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.0E-05	8.1E-05	mg/kg-day	3.0E-04	mg/kg-day	2.7E-01
			Ingestion Total								1.5E-05					2.7E-01
			Dermal													
				2-Hexanone (MBK)	3.23E-01	mg/kg	9.9E-09	mg/kg-day	NA	--	--	1.2E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	9.9E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.3E-08	1.2E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	9.3E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	6.8E-07	1.1E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	1.1E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.8E-08	1.2E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	1.0E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	7.3E-09	1.2E-06	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	8.5E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.7E-09	9.9E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	1.1E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	8.3E-10	1.3E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	8.5E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	6.2E-07	9.9E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	8.8E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	6.4E-08	1.0E-06	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	5.8E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	8.8E-07	6.8E-06	mg/kg-day	3.0E-04	mg/kg-day	2.3E-02
			Dermal Total								2.4E-06					2.3E-02
		Exposure Point Total									1.7E-05					2.9E-01
	Exposure Medium Total										1.7E-05					2.9E-01
	Air	Fugative Dust	Inhalation													
				2-Hexanone (MBK)	3.23E-01	mg/kg	2.3E-12	mg/kg-day	NA	--	--	2.7E-11	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	1.3E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	9.6E-11	1.5E-09	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	6.4E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.7E-10	7.5E-10	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	1.2E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	8.8E-11	1.4E-09	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	5.4E-11	mg/kg-day	7.3E-02	1/(mg/kg-day)	4.0E-12	6.3E-10	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	5.8E-10	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.2E-11	6.7E-09	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	9.8E-10	mg/kg-day	7.3E-03	1/(mg/kg-day)	7.2E-12	1.1E-08	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	2.5E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.8E-10	2.9E-10	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	2.7E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.0E-11	3.1E-10	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	4.5E-11	mg/kg-day	1.5E+01	1/(mg/kg-day)	6.8E-10	5.3E-10	mg/kg-day	NA	--	--
			Inhalation Total								1.6E-09					--
		Exposure Point Total									1.6E-09					--
	Exposure Medium Total										1.6E-09					--
Subsurface Soil Total											1.7E-05					2.9E-01

TABLE 7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Deep Groundwater	Deep Groundwater	Tap	Ingestion													
				1,2-Dichloroethene (cis)	5.84E-02	mg/L	3.2E-04	mg/kg-day	NA	--	--	3.7E-03	mg/kg-day	1.0E-02	mg/kg-day	3.7E-01
				1,2-Dichloroethene (trans)	4.15E-03	mg/L	2.3E-05	mg/kg-day	NA	--	--	2.7E-04	mg/kg-day	2.0E-02	mg/kg-day	1.3E-02
				Benzene	1.21E-03	mg/L	6.6E-06	mg/kg-day	5.5E-02	1/(mg/kg-day)	3.6E-07	7.7E-05	mg/kg-day	4.0E-03	mg/kg-day	1.9E-02
				Naphthalene	1.00E-03	mg/L	5.5E-06	mg/kg-day	NA	--	--	6.4E-05	mg/kg-day	2.0E-02	mg/kg-day	3.2E-03
				Trichloroethene (TCE)	4.55E-02	mg/L	2.5E-04	mg/kg-day	4.0E-01	1/(mg/kg-day)	1.0E-04	2.9E-03	mg/kg-day	3.0E-04	mg/kg-day	**9.7E+00**
				Vinyl Chloride	5.30E-02	mg/L	2.9E-04	mg/kg-day	1.5E+00	1/(mg/kg-day)	**4.4E-04**	3.4E-03	mg/kg-day	3.0E-03	mg/kg-day	**1.1E+00**
			Ingestion Total								**5.4E-04**					**1.1E+01**
			Dermal													
				1,2-Dichloroethene (cis)	5.84E-02	mg/L	2.8E-05	mg/kg-day	NA	--	--	3.3E-04	mg/kg-day	1.0E-02	mg/kg-day	3.3E-02
				1,2-Dichloroethene (trans)	4.15E-03	mg/L	2.8E-06	mg/kg-day	NA	--	--	3.3E-05	mg/kg-day	2.0E-02	mg/kg-day	1.7E-03
				Benzene	1.21E-03	mg/L	1.0E-06	mg/kg-day	5.5E-02	1/(mg/kg-day)	5.8E-08	1.2E-05	mg/kg-day	4.0E-03	mg/kg-day	3.1E-03
				Naphthalene	1.00E-03	mg/L	3.5E-06	mg/kg-day	NA	--	--	4.1E-05	mg/kg-day	2.0E-02	mg/kg-day	2.1E-03
				Trichloroethene (TCE)	4.55E-02	mg/L	4.2E-05	mg/kg-day	4.0E-01	1/(mg/kg-day)	1.7E-05	4.8E-04	mg/kg-day	3.0E-04	mg/kg-day	**1.6E+00**
				Vinyl Chloride	5.30E-02	mg/L	1.6E-05	mg/kg-day	1.5E+00	1/(mg/kg-day)	2.4E-05	1.9E-04	mg/kg-day	3.0E-03	mg/kg-day	6.2E-02
			Dermal Total								4.0E-05					**1.7E+00**
		Exposure Point Total									**5.8E-04**					**1.3E+01**
	Exposure Medium Total										**5.8E-04**					**1.3E+01**
Deep Groundwater Total											**5.8E-04**					**1.3E+01**
											Total of Receptor Risks Across All Media	**6.3E-04**		Total of Receptor Hazards Across All Media		**1.4E+01**

TABLE 7.6.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Surface Soil	Ingestion													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	1.5E-07	mg/kg-day	2.4E-02	1/(mg/kg-day)	3.7E-09	5.3E-06	mg/kg-day	3.0E-02	mg/kg-day	1.8E-04
				2-Hexanone (MBK)	1.08E+00	mg/kg	1.3E-07	mg/kg-day	NA	--	--	4.6E-06	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	4.1E-06	mg/kg-day	NA	--	--	1.4E-04	mg/kg-day	2.0E-02	mg/kg-day	7.1E-03
				Acetophenone	1.30E+00	mg/kg	1.6E-07	mg/kg-day	NA	--	--	5.5E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	1.7E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.2E-07	5.8E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	1.8E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.3E-06	6.3E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	3.6E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.7E-07	1.3E-05	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	2.1E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.6E-08	7.5E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	4.8E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	9.7E-09	1.7E-05	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	2.1E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.6E-09	7.4E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	1.4E-07	mg/kg-day	7.3E+00	1/(mg/kg-day)	9.9E-07	4.8E-06	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	1.7E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.3E-07	6.0E-06	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.7E-06	mg/kg-day	NA	--	--	6.0E-05	mg/kg-day	2.0E-02	mg/kg-day	3.0E-03
				Arsenic	2.69E+00	mg/kg	3.3E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	4.9E-07	1.1E-05	mg/kg-day	3.0E-04	mg/kg-day	3.8E-02
				Cadmium	5.49E+00	mg/kg	6.7E-07	mg/kg-day	NA	--	--	2.3E-05	mg/kg-day	5.0E-04	mg/kg-day	4.7E-02
			Ingestion Total								3.3E-06					9.6E-02
			Dermal													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	1.7E-09	mg/kg-day	2.4E-02	1/(mg/kg-day)	4.1E-11	6.0E-08	mg/kg-day	3.0E-02	mg/kg-day	2.0E-06
				2-Hexanone (MBK)	1.08E+00	mg/kg	1.5E-09	mg/kg-day	NA	--	--	5.2E-08	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	4.6E-08	mg/kg-day	NA	--	--	1.6E-06	mg/kg-day	2.0E-02	mg/kg-day	8.0E-05
				Acetophenone	1.30E+00	mg/kg	1.8E-08	mg/kg-day	NA	--	--	6.2E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	2.4E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.8E-08	8.5E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	2.6E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.9E-07	9.1E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	5.3E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.9E-08	1.9E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	3.1E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	2.3E-09	1.1E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	7.0E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.4E-09	2.5E-06	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	3.1E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	2.3E-10	1.1E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	2.0E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.4E-07	6.9E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	2.5E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.8E-08	8.8E-07	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.9E-08	mg/kg-day	NA	--	--	6.8E-07	mg/kg-day	2.0E-02	mg/kg-day	3.4E-05
				Arsenic	2.69E+00	mg/kg	1.1E-08	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.7E-08	3.9E-07	mg/kg-day	3.0E-04	mg/kg-day	1.3E-03
				Cadmium	5.49E+00	mg/kg	7.5E-10	mg/kg-day	NA	--	--	2.6E-08	mg/kg-day	2.5E-05	mg/kg-day	1.1E-03
			Dermal Total								4.3E-07					2.5E-03
		Exposure Point Total									3.8E-06					9.8E-02
	Exposure Medium Total										3.8E-06					9.8E-02
	Air	Fugative Dust	Inhalation													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	2.0E-07	mg/kg-day	2.2E-02	1/(mg/kg-day)	4.5E-09	7.1E-06	mg/kg-day	2.3E-01	mg/kg-day	3.1E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	1.7E-12	mg/kg-day	NA	--	--	6.0E-11	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.6E-06	mg/kg-day	NA	--	--	5.7E-05	mg/kg-day	8.6E-04	mg/kg-day	6.6E-02
				Acetophenone	1.30E+00	mg/kg	1.1E-08	mg/kg-day	NA	--	--	3.7E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	1.6E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.2E-10	5.6E-09	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	9.0E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	6.6E-10	3.1E-09	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	3.0E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.2E-10	1.1E-08	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	8.4E-11	mg/kg-day	7.3E-02	1/(mg/kg-day)	6.1E-12	2.9E-09	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	2.4E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	4.8E-11	8.4E-08	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	1.3E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	9.8E-12	4.7E-08	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	2.9E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.1E-10	1.0E-09	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	3.8E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.8E-11	1.3E-09	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.6E-06	mg/kg-day	NA	--	--	2.4E-05	mg/kg-day	8.6E-04	mg/kg-day	2.8E-02
				Arsenic	2.69E+00	mg/kg	4.3E-12	mg/kg-day	1.5E+01	1/(mg/kg-day)	6.4E-11	1.5E-10	mg/kg-day	NA	--	--
				Cadmium	5.49E+00	mg/kg	8.7E-12	mg/kg-day	6.3E+00	1/(mg/kg-day)	5.5E-11	3.0E-10	mg/kg-day	NA	--	--
			Inhalation Total								5.9E-09					9.4E-02
		Exposure Point Total									5.9E-09					9.4E-02
	Exposure Medium Total										5.9E-09					9.4E-02
Surface Soil Total											3.8E-06					1.9E-01

TABLE 7.6.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Subsurface Soil	Ingestion													
				2-Hexanone (MBK)	3.23E-01	mg/kg	3.9E-08	mg/kg-day	NA	--	--	1.4E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	3.0E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.2E-08	1.1E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	2.9E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.1E-07	1.0E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	3.3E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.4E-08	1.1E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	3.1E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	2.2E-09	1.1E-06	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	2.6E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	5.2E-10	9.1E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	3.5E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	2.5E-10	1.2E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	2.6E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.9E-07	9.1E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	2.7E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.0E-08	9.4E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	7.7E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.2E-06	2.7E-05	mg/kg-day	3.0E-04	mg/kg-day	9.0E-02
			Ingestion Total								1.6E-06					9.0E-02
			Dermal													
				2-Hexanone (MBK)	3.23E-01	mg/kg	4.4E-10	mg/kg-day	NA	--	--	1.5E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	4.4E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.2E-09	1.6E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	4.2E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.0E-08	1.5E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	4.8E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.5E-09	1.7E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	4.5E-09	mg/kg-day	7.3E-02	1/(mg/kg-day)	3.3E-10	1.6E-07	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	3.8E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	7.6E-11	1.3E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	5.1E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	3.7E-11	1.8E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	3.8E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.8E-08	1.3E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	3.9E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.9E-09	1.4E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	2.6E-08	mg/kg-day	1.5E+00	1/(mg/kg-day)	3.9E-08	9.1E-07	mg/kg-day	3.0E-04	mg/kg-day	3.0E-03
			Dermal Total								1.1E-07					3.0E-03
		Exposure Point Total									1.7E-06					9.3E-02
	Exposure Medium Total										1.7E-06					9.3E-02
	Air	Fugative Dust	Inhalation													
				2-Hexanone (MBK)	3.23E-01	mg/kg	5.1E-13	mg/kg-day	NA	--	--	1.8E-11	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	2.9E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.1E-11	1.0E-09	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	1.4E-11	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.0E-10	5.0E-10	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	2.7E-11	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.0E-11	9.4E-10	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	1.2E-11	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.8E-13	4.2E-10	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	1.3E-10	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.6E-12	4.5E-09	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	2.2E-10	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.6E-12	7.7E-09	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	5.5E-12	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.0E-11	1.9E-10	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	6.0E-12	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.4E-12	2.1E-10	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	1.0E-11	mg/kg-day	1.5E+01	1/(mg/kg-day)	1.5E-10	3.5E-10	mg/kg-day	NA	--	--
			Inhalation Total								3.5E-10					--
		Exposure Point Total									3.5E-10					--
	Exposure Medium Total										3.5E-10					--
Subsurface Soil Total											1.7E-06					9.3E-02

TABLE 7.6.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Deep Groundwater	Deep Groundwater	Tap	Ingestion													
				1,2-Dichloroethene (cis)	5.84E-02	mg/L	7.1E-05	mg/kg-day	NA	--	--	2.5E-03	mg/kg-day	1.0E-02	mg/kg-day	2.5E-01
				1,2-Dichloroethene (trans)	4.15E-03	mg/L	5.1E-06	mg/kg-day	NA	--	--	1.8E-04	mg/kg-day	2.0E-02	mg/kg-day	8.9E-03
				Benzene	1.21E-03	mg/L	1.5E-06	mg/kg-day	5.5E-02	1/(mg/kg-day)	8.1E-08	5.2E-05	mg/kg-day	4.0E-03	mg/kg-day	1.3E-02
				Naphthalene	1.00E-03	mg/L	1.2E-06	mg/kg-day	NA	--	--	4.3E-05	mg/kg-day	2.0E-02	mg/kg-day	2.1E-03
				Trichloroethene (TCE)	4.55E-02	mg/L	5.6E-05	mg/kg-day	4.0E-01	1/(mg/kg-day)	2.2E-05	1.9E-03	mg/kg-day	3.0E-04	mg/kg-day	**6.5E+00**
				Vinyl Chloride	5.30E-02	mg/L	6.5E-05	mg/kg-day	1.5E+00	1/(mg/kg-day)	9.7E-05	2.3E-03	mg/kg-day	3.0E-03	mg/kg-day	7.5E-01
			Ingestion Total								**1.2E-04**					**7.5E+00**
			Dermal													
				1,2-Dichloroethene (cis)	5.84E-02	mg/L	3.5E-06	mg/kg-day	NA	--	--	1.2E-04	mg/kg-day	1.0E-02	mg/kg-day	1.2E-02
				1,2-Dichloroethene (trans)	4.15E-03	mg/L	3.5E-07	mg/kg-day	NA	--	--	1.2E-05	mg/kg-day	2.0E-02	mg/kg-day	6.1E-04
				Benzene	1.21E-03	mg/L	1.3E-07	mg/kg-day	5.5E-02	1/(mg/kg-day)	6.9E-09	4.4E-06	mg/kg-day	4.0E-03	mg/kg-day	1.1E-03
				Naphthalene	1.00E-03	mg/L	4.5E-07	mg/kg-day	NA	--	--	1.6E-05	mg/kg-day	2.0E-02	mg/kg-day	7.9E-04
				Trichloroethene (TCE)	4.55E-02	mg/L	5.3E-06	mg/kg-day	4.0E-01	1/(mg/kg-day)	2.1E-06	1.9E-04	mg/kg-day	3.0E-04	mg/kg-day	6.2E-01
				Vinyl Chloride	5.30E-02	mg/L	1.9E-06	mg/kg-day	1.5E+00	1/(mg/kg-day)	2.8E-06	6.5E-05	mg/kg-day	3.0E-03	mg/kg-day	2.2E-02
			Dermal Total								4.9E-06					6.6E-01
		Exposure Point Total									**1.2E-04**					**8.2E+00**
	Exposure Medium Total										**1.2E-04**					**8.2E+00**
Deep Groundwater Total											**1.2E-04**					**8.2E+00**
										Total of Receptor Risks Across All Media	**1.3E-04**			Total of Receptor Hazards Across All Media		**8.4E+00**

TABLE 7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Surface Soil	Ingestion													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	8.4E-08	mg/kg-day	2.4E-02	1/(mg/kg-day)	2.0E-09	5.9E-06	mg/kg-day	3.0E-02	mg/kg-day	2.0E-04
				2-Hexanone (MBK)	1.08E+00	mg/kg	7.3E-08	mg/kg-day	NA	--	--	5.1E-06	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	2.2E-06	mg/kg-day	NA	--	--	1.6E-04	mg/kg-day	2.0E-02	mg/kg-day	7.8E-03
				Acetophenone	1.30E+00	mg/kg	8.7E-08	mg/kg-day	NA	--	--	6.1E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	9.1E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	6.7E-08	6.4E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	9.9E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.2E-07	6.9E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	2.0E-07	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.5E-07	1.4E-05	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	1.2E-07	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.6E-09	8.2E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	2.7E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	5.3E-09	1.9E-05	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	1.2E-07	mg/kg-day	7.3E-03	1/(mg/kg-day)	8.5E-10	8.2E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	7.5E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	5.5E-07	5.2E-06	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	9.5E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	6.9E-08	6.6E-06	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	9.5E-07	mg/kg-day	NA	--	--	6.6E-05	mg/kg-day	2.0E-02	mg/kg-day	3.3E-03
				Arsenic	2.69E+00	mg/kg	1.8E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	2.7E-07	1.3E-05	mg/kg-day	3.0E-04	mg/kg-day	4.2E-02
				Cadmium	5.49E+00	mg/kg	3.7E-07	mg/kg-day	NA	--	--	2.6E-05	mg/kg-day	5.0E-04	mg/kg-day	5.2E-02
			Ingestion Total								1.8E-06					1.0E-01
			Dermal													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	1.2E-09	mg/kg-day	2.4E-02	1/(mg/kg-day)	2.8E-11	8.1E-08	mg/kg-day	3.0E-02	mg/kg-day	2.7E-06
				2-Hexanone (MBK)	1.08E+00	mg/kg	1.0E-09	mg/kg-day	NA	--	--	7.0E-08	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	3.1E-08	mg/kg-day	NA	--	--	2.2E-06	mg/kg-day	2.0E-02	mg/kg-day	1.1E-04
				Acetophenone	1.30E+00	mg/kg	1.2E-08	mg/kg-day	NA	--	--	8.4E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	1.6E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.2E-08	1.1E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	1.8E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.3E-07	1.2E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	3.6E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.6E-08	2.5E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	2.1E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.5E-09	1.5E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	4.7E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	9.5E-10	3.3E-06	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	2.1E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.5E-10	1.5E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	1.3E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	9.8E-08	9.4E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	1.7E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.2E-08	1.2E-06	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.3E-08	mg/kg-day	NA	--	--	9.1E-07	mg/kg-day	2.0E-02	mg/kg-day	4.6E-05
				Arsenic	2.69E+00	mg/kg	7.4E-09	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.1E-08	5.2E-07	mg/kg-day	3.0E-04	mg/kg-day	1.7E-03
				Cadmium	5.49E+00	mg/kg	5.1E-10	mg/kg-day	NA	--	--	3.5E-08	mg/kg-day	2.5E-05	mg/kg-day	1.4E-03
			Dermal Total								2.9E-07					3.3E-03
		Exposure Point Total									2.1E-06					1.1E-01
	Exposure Medium Total										2.1E-06					1.1E-01
	Air	Fugative Dust	Inhalation													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	3.6E-07	mg/kg-day	2.2E-02	1/(mg/kg-day)	7.9E-09	2.5E-05	mg/kg-day	2.3E-01	mg/kg-day	1.1E-04
				2-Hexanone (MBK)	1.08E+00	mg/kg	2.0E-09	mg/kg-day	NA	--	--	1.4E-07	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	2.9E-06	mg/kg-day	NA	--	--	2.0E-04	mg/kg-day	8.6E-04	mg/kg-day	2.4E-01
				Acetophenone	1.30E+00	mg/kg	2.1E-08	mg/kg-day	NA	--	--	1.5E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	2.8E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.0E-09	2.0E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	2.9E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.1E-08	2.0E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	6.0E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.4E-09	4.2E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	3.4E-09	mg/kg-day	7.3E-02	1/(mg/kg-day)	2.5E-10	2.4E-07	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	1.2E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.3E-10	8.1E-07	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	5.6E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	4.1E-11	3.9E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	2.1E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.5E-08	1.5E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	2.7E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.9E-09	1.9E-07	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	2.9E-06	mg/kg-day	NA	--	--	8.6E-05	mg/kg-day	8.6E-04	mg/kg-day	1.0E-01
				Arsenic	2.69E+00	mg/kg	5.0E-09	mg/kg-day	1.5E+01	1/(mg/kg-day)	7.5E-08	3.5E-07	mg/kg-day	NA	--	--
				Cadmium	5.49E+00	mg/kg	1.0E-08	mg/kg-day	6.3E+00	1/(mg/kg-day)	6.4E-08	7.1E-07	mg/kg-day	NA	--	--
			Inhalation Total								1.9E-07					3.4E-01
		Exposure Point Total									1.9E-07					3.4E-01
	Exposure Medium Total										1.9E-07					3.4E-01
Surface Soil Total											2.3E-06					4.5E-01

TABLE 7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Subsurface Soil	Ingestion													
				2-Hexanone (MBK)	3.23E-01	mg/kg	2.2E-08	mg/kg-day	NA	--	--	1.5E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	1.7E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.2E-08	1.2E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	1.6E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.1E-07	1.1E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	1.8E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.3E-08	1.3E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	1.7E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.2E-09	1.2E-06	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	1.4E-08	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.9E-10	1.0E-06	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	1.9E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.4E-10	1.3E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	1.4E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.0E-07	1.0E-06	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	1.5E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.1E-08	1.0E-06	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	4.3E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	6.4E-07	3.0E-05	mg/kg-day	3.0E-04	mg/kg-day	9.9E-02
			Ingestion Total								8.9E-07					9.9E-02
			Dermal													
				2-Hexanone (MBK)	3.23E-01	mg/kg	3.0E-10	mg/kg-day	NA	--	--	2.1E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	3.0E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.2E-09	2.1E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	2.8E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.0E-08	2.0E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	3.2E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.3E-09	2.2E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	3.0E-09	mg/kg-day	7.3E-02	1/(mg/kg-day)	2.2E-10	2.1E-07	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	2.6E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	5.1E-11	1.8E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	3.4E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	2.5E-11	2.4E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	2.5E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.9E-08	1.8E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	2.6E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.9E-09	1.9E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	1.8E-08	mg/kg-day	1.5E+00	1/(mg/kg-day)	2.6E-08	1.2E-06	mg/kg-day	3.0E-04	mg/kg-day	4.1E-03
			Dermal Total								7.2E-08					4.1E-03
		Exposure Point Total									9.7E-07					1.0E-01
	Exposure Medium Total										9.7E-07					1.0E-01
	Air	Fugative Dust	Inhalation													
				2-Hexanone (MBK)	3.23E-01	mg/kg	6.0E-10	mg/kg-day	NA	--	--	4.2E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	5.1E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.7E-10	3.6E-08	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	4.6E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.3E-09	3.2E-08	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	5.4E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.0E-10	3.8E-08	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	4.9E-10	mg/kg-day	7.3E-02	1/(mg/kg-day)	3.6E-11	3.4E-08	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	6.2E-10	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.2E-11	4.3E-08	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	9.1E-10	mg/kg-day	7.3E-03	1/(mg/kg-day)	6.6E-12	6.4E-08	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	4.0E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.9E-09	2.8E-08	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	4.2E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.0E-10	2.9E-08	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	1.2E-08	mg/kg-day	1.5E+01	1/(mg/kg-day)	1.8E-07	8.2E-07	mg/kg-day	NA	--	--
			Inhalation Total								1.8E-07					--
		Exposure Point Total									1.8E-07					--
	Exposure Medium Total										1.8E-07					--
Subsurface Soil Total											1.2E-06					1.0E-01

TABLE 7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater	Groundwater	Tap	Dermal													
				1,1-Dichloroethene	3.68E-03	mg/L	6.8E-08	mg/kg-day	NA	--	--	4.7E-06	mg/kg-day	5.0E-02	mg/kg-day	9.5E-05
				1,2,3-Trichlorobenzene	2.40E-03	mg/L	3.7E-07	mg/kg-day	NA	--	--	2.6E-05	mg/kg-day	1.0E-02	mg/kg-day	2.6E-03
				1,2,4-Trimethylbenzene	3.74E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				1,2-Dichloroethene (cis)	1.20E-01	mg/L	1.4E-06	mg/kg-day	NA	--	--	9.9E-05	mg/kg-day	1.0E-02	mg/kg-day	9.9E-03
				1,2-Dichloroethene (total)	1.75E-01	mg/L	2.1E-06	mg/kg-day	NA	--	--	1.4E-04	mg/kg-day	1.0E-02	mg/kg-day	1.4E-02
				1,2-Dichloroethene (trans)	3.09E-03	mg/L	5.2E-08	mg/kg-day	NA	--	--	3.6E-06	mg/kg-day	2.0E-02	mg/kg-day	1.8E-04
				1,2-Dichloropropane	3.00E-04	mg/L	3.8E-09	mg/kg-day	6.8E-02	1/(mg/kg-day)	2.6E-10	2.7E-07	mg/kg-day	1.1E-03	mg/kg-day	2.4E-04
				1,3,5-Trimethylbenzene	2.73E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				1,4-Dichlorobenzene (p-)	2.00E-03	mg/L	1.6E-07	mg/kg-day	2.4E-02	1/(mg/kg-day)	3.8E-09	1.1E-05	mg/kg-day	3.0E-02	mg/kg-day	3.7E-04
				2-Chlorotoluene	2.25E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	2.0E-02	mg/kg-day	--
				4-Isopropyltoluene	5.47E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	NA	--	--
				Benzene	9.82E-03	mg/L	2.1E-07	mg/kg-day	5.5E-02	1/(mg/kg-day)	1.1E-08	1.5E-05	mg/kg-day	4.0E-03	mg/kg-day	3.6E-03
				Bromodichloromethane	2.00E-03	mg/L	1.9E-08	mg/kg-day	6.2E-02	1/(mg/kg-day)	1.2E-09	1.3E-06	mg/kg-day	2.0E-02	mg/kg-day	6.5E-05
				Bromoform	2.77E-03	mg/L	2.1E-08	mg/kg-day	7.9E-03	1/(mg/kg-day)	1.7E-10	1.5E-06	mg/kg-day	2.0E-02	mg/kg-day	7.3E-05
				Chloroform	4.40E-04	mg/L	5.0E-09	mg/kg-day	NA	--	--	3.5E-07	mg/kg-day	1.0E-02	mg/kg-day	3.5E-05
				Ethylbenzene	7.07E-03	mg/L	5.2E-07	mg/kg-day	NA	--	--	3.7E-05	mg/kg-day	1.0E-01	mg/kg-day	3.7E-04
				Isopropylbenzene (Cumen	4.33E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	1.0E-01	mg/kg-day	--
				Naphthalene	1.65E-01	mg/L	1.3E-05	mg/kg-day	NA	--	--	9.2E-04	mg/kg-day	2.0E-02	mg/kg-day	4.6E-02
				n-Butylbenzene	4.20E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	4.0E-02	mg/kg-day	--
				Tetrachloroethene (PCE)	2.64E-03	mg/L	1.8E-07	mg/kg-day	5.4E-01	1/(mg/kg-day)	1.0E-07	1.3E-05	mg/kg-day	1.0E-02	mg/kg-day	1.3E-03
				Toluene	1.11E-02	mg/L	0.0E+00	mg/kg-day	NA	--	--	0.0E+00	mg/kg-day	2.0E-01	mg/kg-day	0.0E+00
				Trichloroethene (TCE)	3.18E-01	mg/L	6.6E-06	mg/kg-day	4.0E-01	1/(mg/kg-day)	2.6E-06	4.6E-04	mg/kg-day	3.0E-04	mg/kg-day	**1.5E+00**
				Vinyl Chloride	1.56E-02	mg/L	1.2E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.9E-07	8.7E-06	mg/kg-day	3.0E-03	mg/kg-day	2.9E-03
				Xylene, m/p-	1.01E-02	mg/L	8.0E-07	mg/kg-day	NA	--	--	5.6E-05	mg/kg-day	2.0E-01	mg/kg-day	2.8E-04
				Xylene, o-	5.34E-03	mg/L	3.7E-07	mg/kg-day	NA	--	--	2.6E-05	mg/kg-day	2.0E-01	mg/kg-day	1.3E-04
				Xylenes, total	9.56E-03	mg/L	4.3E-08	mg/kg-day	NA	--	--	3.0E-06	mg/kg-day	2.0E-01	mg/kg-day	1.5E-05
				1,1'-Biphenyl	8.87E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				2,4-Dimethylphenol	6.38E-02	mg/L	1.2E-06	mg/kg-day	NA	--	--	8.2E-05	mg/kg-day	2.0E-02	mg/kg-day	4.1E-03
				2-Methylnaphthalene	4.57E-02	mg/L	6.7E-06	mg/kg-day	NA	--	--	4.7E-04	mg/kg-day	4.0E-03	mg/kg-day	1.2E-01
				2-Methylphenol (o-Cresol)	2.66E-02	mg/L	3.3E-07	mg/kg-day	NA	--	--	2.3E-05	mg/kg-day	5.0E-02	mg/kg-day	4.6E-04
				4-Methylphenol (p-Cresol)	1.81E-02	mg/L	2.2E-07	mg/kg-day	NA	--	--	1.6E-05	mg/kg-day	5.0E-03	mg/kg-day	3.1E-03
				Acenaphthene	3.08E-02	mg/L	5.6E-06	mg/kg-day	NA	--	--	3.9E-04	mg/kg-day	6.0E-02	mg/kg-day	6.5E-03
				Bis(2-ethylhexyl) Phthalat	5.50E-03	mg/L	1.2E-06	mg/kg-day	1.4E-02	1/(mg/kg-day)	1.6E-08	8.1E-05	mg/kg-day	2.0E-02	mg/kg-day	4.0E-03
				Carbazole	1.01E-02	mg/L	1.0E-06	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.1E-08	7.3E-05	mg/kg-day	NA	--	--
				Dibenzofuran	1.31E-02	mg/L	2.5E-06	mg/kg-day	NA	--	--	1.7E-04	mg/kg-day	2.0E-03	mg/kg-day	8.6E-02
				Fluorene	1.07E-02	mg/L	2.9E-06	mg/kg-day	NA	--	--	2.0E-04	mg/kg-day	4.0E-02	mg/kg-day	5.0E-03
				Naphthalene	1.65E-01	mg/L	1.3E-05	mg/kg-day	NA	--	--	9.2E-04	mg/kg-day	2.0E-02	mg/kg-day	4.6E-02
			Dermal Total								3.0E-06					**1.9E+00**
		Exposure Point Total									3.0E-06					**1.9E+00**
	Exposure Medium Total										3.0E-06					**1.9E+00**
Groundwater Total											3.0E-06					**1.9E+00**
											Total of Receptor Risks Across All Media	6.4E-06		Total of Receptor Hazards Across All Media		**2.4E+00**

TABLE 7.7.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Surface Soil	Ingestion													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	3.7E-08	mg/kg-day	2.4E-02	1/(mg/kg-day)	8.8E-10	2.6E-06	mg/kg-day	3.0E-02	mg/kg-day	8.6E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	3.2E-08	mg/kg-day	NA	--	--	2.2E-06	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	9.8E-07	mg/kg-day	NA	--	--	6.9E-05	mg/kg-day	2.0E-02	mg/kg-day	3.4E-03
				Acetophenone	1.30E+00	mg/kg	3.8E-08	mg/kg-day	NA	--	--	2.7E-06	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	4.0E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.9E-08	2.8E-06	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	4.3E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	3.2E-07	3.0E-06	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	8.8E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	6.4E-08	6.1E-06	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	5.2E-08	mg/kg-day	7.3E-02	1/(mg/kg-day)	3.8E-09	3.6E-06	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	1.2E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	2.3E-09	8.1E-06	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	5.1E-08	mg/kg-day	7.3E-03	1/(mg/kg-day)	3.7E-10	3.6E-06	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	3.3E-08	mg/kg-day	7.3E+00	1/(mg/kg-day)	2.4E-07	2.3E-06	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	4.1E-08	mg/kg-day	7.3E-01	1/(mg/kg-day)	3.0E-08	2.9E-06	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	4.1E-07	mg/kg-day	NA	--	--	2.9E-05	mg/kg-day	2.0E-02	mg/kg-day	1.5E-03
				Arsenic	2.69E+00	mg/kg	7.9E-08	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.2E-07	5.5E-06	mg/kg-day	3.0E-04	mg/kg-day	1.8E-02
				Cadmium	5.49E+00	mg/kg	1.6E-07	mg/kg-day	NA	--	--	1.1E-05	mg/kg-day	5.0E-04	mg/kg-day	2.3E-02
			Ingestion Total								8.0E-07					4.6E-02
			Dermal													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	1.0E-10	mg/kg-day	2.4E-02	1/(mg/kg-day)	2.4E-12	7.1E-09	mg/kg-day	3.0E-02	mg/kg-day	2.4E-07
				2-Hexanone (MBK)	1.08E+00	mg/kg	8.7E-11	mg/kg-day	NA	--	--	6.1E-09	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	2.7E-09	mg/kg-day	NA	--	--	1.9E-07	mg/kg-day	2.0E-02	mg/kg-day	9.4E-06
				Acetophenone	1.30E+00	mg/kg	1.0E-09	mg/kg-day	NA	--	--	7.3E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	1.4E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.0E-09	1.0E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	1.5E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.1E-08	1.1E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	3.1E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.3E-09	2.2E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	1.8E-09	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.3E-10	1.3E-07	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	4.2E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	8.3E-11	2.9E-07	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	1.8E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.3E-11	1.3E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	1.2E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	8.6E-09	8.2E-08	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	1.5E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.1E-09	1.0E-07	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.1E-09	mg/kg-day	NA	--	--	8.0E-08	mg/kg-day	2.0E-02	mg/kg-day	4.0E-06
				Arsenic	2.69E+00	mg/kg	6.5E-10	mg/kg-day	1.5E+00	1/(mg/kg-day)	9.8E-10	4.6E-08	mg/kg-day	3.0E-04	mg/kg-day	1.5E-04
				Cadmium	5.49E+00	mg/kg	4.4E-11	mg/kg-day	NA	--	--	3.1E-09	mg/kg-day	2.5E-05	mg/kg-day	1.2E-04
			Dermal Total								2.5E-08					2.9E-04
		Exposure Point Total									8.3E-07					4.6E-02
	Exposure Medium Total										8.3E-07					4.6E-02
	Air	Fugative Dust	Inhalation													
				1,4-Dichlorobenzene (p-)	1.25E+00	mg/kg	1.2E-07	mg/kg-day	2.2E-02	1/(mg/kg-day)	2.7E-09	8.7E-06	mg/kg-day	2.3E-01	mg/kg-day	3.8E-05
				2-Hexanone (MBK)	1.08E+00	mg/kg	6.9E-10	mg/kg-day	NA	--	--	4.8E-08	mg/kg-day	NA	--	--
				Naphthalene	3.34E+01	mg/kg	1.0E-06	mg/kg-day	NA	--	--	7.0E-05	mg/kg-day	8.6E-04	mg/kg-day	8.2E-02
				Acetophenone	1.30E+00	mg/kg	7.2E-09	mg/kg-day	NA	--	--	5.1E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	1.36E+00	mg/kg	9.6E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	7.0E-10	6.7E-08	mg/kg-day	NA	--	--
				Benzo(a)pyrene	1.47E+00	mg/kg	9.9E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	7.2E-09	6.9E-08	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.98E+00	mg/kg	2.1E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.5E-09	1.5E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	1.75E+00	mg/kg	1.2E-09	mg/kg-day	7.3E-02	1/(mg/kg-day)	8.5E-11	8.2E-08	mg/kg-day	NA	--	--
				Carbazole	3.96E+00	mg/kg	4.0E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	8.0E-11	2.8E-07	mg/kg-day	NA	--	--
				Chrysene	1.74E+00	mg/kg	1.9E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	1.4E-11	1.3E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	1.12E+00	mg/kg	7.3E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	5.3E-09	5.1E-08	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	1.41E+00	mg/kg	9.2E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	6.7E-10	6.5E-08	mg/kg-day	NA	--	--
				Naphthalene	1.41E+01	mg/kg	1.0E-06	mg/kg-day	NA	--	--	3.0E-05	mg/kg-day	8.6E-04	mg/kg-day	3.5E-02
				Arsenic	2.69E+00	mg/kg	1.7E-09	mg/kg-day	1.5E+01	1/(mg/kg-day)	2.6E-08	1.2E-07	mg/kg-day	NA	--	--
				Cadmium	5.49E+00	mg/kg	3.5E-09	mg/kg-day	6.3E+00	1/(mg/kg-day)	2.2E-08	2.5E-07	mg/kg-day	NA	--	--
			Inhalation Total								6.6E-08					1.2E-01
		Exposure Point Total									6.6E-08					1.2E-01
	Exposure Medium Total										6.6E-08					1.2E-01
Surface Soil Total											9.0E-07					1.6E-01

TABLE 7.7.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Subsurface Soil	Ingestion													
				2-Hexanone (MBK)	3.23E-01	mg/kg	9.5E-09	mg/kg-day	NA	--	--	6.6E-07	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	7.3E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	5.3E-09	5.1E-07	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	6.9E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	5.0E-08	4.8E-07	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	7.9E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	5.7E-09	5.5E-07	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	7.4E-09	mg/kg-day	7.3E-02	1/(mg/kg-day)	5.4E-10	5.2E-07	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	6.3E-09	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.3E-10	4.4E-07	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	8.3E-09	mg/kg-day	7.3E-03	1/(mg/kg-day)	6.1E-11	5.8E-07	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	6.2E-09	mg/kg-day	7.3E+00	1/(mg/kg-day)	4.6E-08	4.4E-07	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	6.5E-09	mg/kg-day	7.3E-01	1/(mg/kg-day)	4.7E-09	4.5E-07	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	1.9E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	2.8E-07	1.3E-05	mg/kg-day	3.0E-04	mg/kg-day	4.3E-02
			Ingestion Total								3.9E-07					4.3E-02
			Dermal													
				2-Hexanone (MBK)	3.23E-01	mg/kg	2.6E-11	mg/kg-day	NA	--	--	1.8E-09	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	2.6E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.9E-10	1.8E-08	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	2.5E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.8E-09	1.7E-08	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	2.8E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	2.1E-10	2.0E-08	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	2.6E-10	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.9E-11	1.9E-08	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	2.2E-10	mg/kg-day	2.0E-02	1/(mg/kg-day)	4.5E-12	1.6E-08	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	3.0E-10	mg/kg-day	7.3E-03	1/(mg/kg-day)	2.2E-12	2.1E-08	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	2.2E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.6E-09	1.6E-08	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	2.3E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.7E-10	1.6E-08	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	1.5E-09	mg/kg-day	1.5E+00	1/(mg/kg-day)	2.3E-09	1.1E-07	mg/kg-day	3.0E-04	mg/kg-day	3.6E-04
			Dermal Total								6.3E-09					3.6E-04
		Exposure Point Total									4.0E-07					4.4E-02
	Exposure Medium Total										4.0E-07					4.4E-02
	Air	Fugative Dust	Inhalation													
				2-Hexanone (MBK)	3.23E-01	mg/kg	2.1E-10	mg/kg-day	NA	--	--	1.4E-08	mg/kg-day	NA	--	--
				Benzo(a)anthracene	2.49E-01	mg/kg	1.8E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.3E-10	1.2E-08	mg/kg-day	NA	--	--
				Benzo(a)pyrene	2.34E-01	mg/kg	1.6E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.1E-09	1.1E-08	mg/kg-day	NA	--	--
				Benzo(b)fluoranthene	2.68E-01	mg/kg	1.9E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.4E-10	1.3E-08	mg/kg-day	NA	--	--
				Benzo(k)fluoranthene	2.52E-01	mg/kg	1.7E-10	mg/kg-day	7.3E-02	1/(mg/kg-day)	1.2E-11	1.2E-08	mg/kg-day	NA	--	--
				Carbazole	2.13E-01	mg/kg	2.1E-10	mg/kg-day	2.0E-02	1/(mg/kg-day)	4.3E-12	1.5E-08	mg/kg-day	NA	--	--
				Chrysene	2.84E-01	mg/kg	3.1E-10	mg/kg-day	7.3E-03	1/(mg/kg-day)	2.3E-12	2.2E-08	mg/kg-day	NA	--	--
				Dibenz(a,h)anthracene	2.13E-01	mg/kg	1.4E-10	mg/kg-day	7.3E+00	1/(mg/kg-day)	1.0E-09	9.7E-09	mg/kg-day	NA	--	--
				Indeno(1,2,3-cd)pyrene	2.20E-01	mg/kg	1.4E-10	mg/kg-day	7.3E-01	1/(mg/kg-day)	1.1E-10	1.0E-08	mg/kg-day	NA	--	--
				Arsenic	6.34E+00	mg/kg	4.0E-09	mg/kg-day	1.5E+01	1/(mg/kg-day)	6.1E-08	2.8E-07	mg/kg-day	NA	--	--
			Inhalation Total								6.3E-08					--
		Exposure Point Total									6.3E-08					--
	Exposure Medium Total										6.3E-08					--
Subsurface Soil Total											4.6E-07					4.4E-02

TABLE 7.7.CT
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater	Groundwater	Tap	Dermal													
				1,1-Dichloroethene	3.68E-03	mg/L	5.9E-08	mg/kg-day	NA	--	--	4.1E-06	mg/kg-day	5.0E-02	mg/kg-day	8.3E-05
				1,2,3-Trichlorobenzene	2.40E-03	mg/L	3.3E-07	mg/kg-day	NA	--	--	2.3E-05	mg/kg-day	1.0E-02	mg/kg-day	2.3E-03
				1,2,4-Trimethylbenzene	3.74E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				1,2-Dichloroethene (cis)	1.20E-01	mg/L	1.2E-06	mg/kg-day	NA	--	--	8.7E-05	mg/kg-day	1.0E-02	mg/kg-day	8.7E-03
				1,2-Dichloroethene (total)	1.75E-01	mg/L	1.8E-06	mg/kg-day	NA	--	--	1.3E-04	mg/kg-day	1.0E-02	mg/kg-day	1.3E-02
				1,2-Dichloroethene (trans)	3.09E-03	mg/L	4.5E-08	mg/kg-day	NA	--	--	3.2E-06	mg/kg-day	2.0E-02	mg/kg-day	1.6E-04
				1,2-Dichloropropane	3.00E-04	mg/L	3.3E-09	mg/kg-day	6.8E-02	1/(mg/kg-day)	2.3E-10	2.3E-07	mg/kg-day	1.1E-03	mg/kg-day	2.1E-04
				1,3,5-Trimethylbenzene	2.73E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				1,4-Dichlorobenzene (p-)	2.00E-03	mg/L	1.4E-07	mg/kg-day	2.4E-02	1/(mg/kg-day)	3.3E-09	9.6E-06	mg/kg-day	3.0E-02	mg/kg-day	3.2E-04
				2-Chlorotoluene	2.25E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	2.0E-02	mg/kg-day	--
				4-Isopropyltoluene	5.47E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	NA	--	--
				Benzene	9.82E-03	mg/L	1.8E-07	mg/kg-day	5.5E-02	1/(mg/kg-day)	1.0E-08	1.3E-05	mg/kg-day	4.0E-03	mg/kg-day	3.2E-03
				Bromodichloromethane	2.00E-03	mg/L	1.6E-08	mg/kg-day	6.2E-02	1/(mg/kg-day)	1.0E-09	1.1E-06	mg/kg-day	2.0E-02	mg/kg-day	5.7E-05
				Bromoform	2.77E-03	mg/L	1.8E-08	mg/kg-day	7.9E-03	1/(mg/kg-day)	1.4E-10	1.3E-06	mg/kg-day	2.0E-02	mg/kg-day	6.4E-05
				Chloroform	4.40E-04	mg/L	4.3E-09	mg/kg-day	NA	--	--	3.0E-07	mg/kg-day	1.0E-02	mg/kg-day	3.0E-05
				Ethylbenzene	7.07E-03	mg/L	4.6E-07	mg/kg-day	NA	--	--	3.2E-05	mg/kg-day	1.0E-01	mg/kg-day	3.2E-04
				Isopropylbenzene (Cumen	4.33E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	1.0E-01	mg/kg-day	--
				Naphthalene	1.65E-01	mg/L	1.1E-05	mg/kg-day	NA	--	--	8.0E-04	mg/kg-day	2.0E-02	mg/kg-day	4.0E-02
				n-Butylbenzene	4.20E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	4.0E-02	mg/kg-day	--
				Tetrachloroethene (PCE)	2.64E-03	mg/L	1.6E-07	mg/kg-day	5.4E-01	1/(mg/kg-day)	8.7E-08	1.1E-05	mg/kg-day	1.0E-02	mg/kg-day	1.1E-03
				Toluene	1.11E-02	mg/L	0.0E+00	mg/kg-day	NA	--	--	0.0E+00	mg/kg-day	2.0E-01	mg/kg-day	0.0E+00
				Trichloroethene (TCE)	3.18E-01	mg/L	5.8E-06	mg/kg-day	4.0E-01	1/(mg/kg-day)	2.3E-06	4.0E-04	mg/kg-day	3.0E-04	mg/kg-day	**1.3E+00**
				Vinyl Chloride	1.56E-02	mg/L	1.1E-07	mg/kg-day	1.5E+00	1/(mg/kg-day)	1.6E-07	7.6E-06	mg/kg-day	3.0E-03	mg/kg-day	2.5E-03
				Xylene, m/p-	1.01E-02	mg/L	7.0E-07	mg/kg-day	NA	--	--	4.9E-05	mg/kg-day	2.0E-01	mg/kg-day	2.4E-04
				Xylene, o-	5.34E-03	mg/L	3.3E-07	mg/kg-day	NA	--	--	2.3E-05	mg/kg-day	2.0E-01	mg/kg-day	1.1E-04
				Xylenes, total	9.56E-03	mg/L	3.8E-08	mg/kg-day	NA	--	--	2.7E-06	mg/kg-day	2.0E-01	mg/kg-day	1.3E-05
				1,1'-Biphenyl	8.87E-03	mg/L	NA	mg/kg-day	NA	--	--	NA	mg/kg-day	5.0E-02	mg/kg-day	--
				2,4-Dimethylphenol	6.38E-02	mg/L	1.0E-06	mg/kg-day	NA	--	--	7.2E-05	mg/kg-day	2.0E-02	mg/kg-day	3.6E-03
				2-Methylnaphthalene	4.57E-02	mg/L	5.9E-06	mg/kg-day	NA	--	--	4.1E-04	mg/kg-day	4.0E-03	mg/kg-day	1.0E-01
				2-Methylphenol (o-Cresol)	2.66E-02	mg/L	2.9E-07	mg/kg-day	NA	--	--	2.0E-05	mg/kg-day	5.0E-02	mg/kg-day	4.0E-04
				4-Methylphenol (p-Cresol)	1.81E-02	mg/L	1.9E-07	mg/kg-day	NA	--	--	1.4E-05	mg/kg-day	5.0E-03	mg/kg-day	2.7E-03
				Acenaphthene	3.08E-02	mg/L	4.9E-06	mg/kg-day	NA	--	--	3.4E-04	mg/kg-day	6.0E-02	mg/kg-day	5.7E-03
				Bis(2-ethylhexyl) Phthalat	5.50E-03	mg/L	1.0E-06	mg/kg-day	1.4E-02	1/(mg/kg-day)	1.4E-08	7.1E-05	mg/kg-day	2.0E-02	mg/kg-day	3.5E-03
				Carbazole	1.01E-02	mg/L	9.1E-07	mg/kg-day	2.0E-02	1/(mg/kg-day)	1.8E-08	6.4E-05	mg/kg-day	NA	--	--
				Dibenzofuran	1.31E-02	mg/L	2.2E-06	mg/kg-day	NA	--	--	1.5E-04	mg/kg-day	2.0E-03	mg/kg-day	7.5E-02
				Fluorene	1.07E-02	mg/L	2.5E-06	mg/kg-day	NA	--	--	1.8E-04	mg/kg-day	4.0E-02	mg/kg-day	4.4E-03
				Naphthalene	1.65E-01	mg/L	1.1E-05	mg/kg-day	NA	--	--	8.0E-04	mg/kg-day	2.0E-02	mg/kg-day	4.0E-02
			Dermal Total								2.6E-06					**1.7E+00**
		Exposure Point Total									2.6E-06					**1.7E+00**
	Exposure Medium Total										2.6E-06					**1.7E+00**
Groundwater Total											2.6E-06					**1.7E+00**
											Total of Receptor Risks Across All Media	4.0E-06		Total of Receptor Hazards Across All Media		**1.9E+00**

TABLE 8.1.RME
CALCULATION OF RADIATION CANCER RISKS
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe:
Receptor Population:
Receptor Age:

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF / Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD / RfC		Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
			Total													
NOT APPLICABLE																
			Total													
		Exposure Point Total														
	Exposure Medium Total															
			Total													
		Exposure Point Total														
	Exposure Medium Total															
Total																
											Total of Receptor Risks Across All Media					Total of Receptor Hazards Across All Media

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current
Receptor Population: Military Base Personnel
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	1,4-Dichlorobenzene (p-)	2.1E-09	--	1.4E-10	--	2.25E-09	(o) Lookup, (i) Liver	5.12E-05	--	3.38E-06	5.46E-05
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	4.3E-08	--	3.7E-08	--	8.05E-08	NA	--	--	--	--
			Benzo(a)pyrene	5.0E-07	--	4.3E-07	--	9.32E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	5.9E-08	--	5.0E-08	--	1.09E-07	NA	--	--	--	--
			Benzo(k)fluoranthene	6.7E-09	--	5.7E-09	--	1.24E-08	NA	--	--	--	--
			Carbazole	2.3E-09	--	2.0E-09	--	4.32E-09	NA	--	--	--	--
			Chrysene	6.6E-10	--	5.6E-10	--	1.22E-09	ImS	--	--	--	--
			Dibenz(a,h)anthracene	2.6E-07	--	2.2E-07	--	4.84E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4.7E-08	--	4.0E-08	--	8.72E-08	NA	--	--	--	--
			Arsenic	2.6E-07	--	5.1E-08	--	3.11E-07	(o) Skin / CVS	1.01E-02	--	2.00E-03	1.21E-02
			Cadmium	--	--	--	--	--	Kidney	9.74E-03	--	1.29E-03	1.10E-02
			Chemical Total	1.2E-06	--	8.4E-07		2.02E-06		1.99E-02	--	3.29E-03	0.02
		Exposure Point Total						2.02E-06					0.02
	Exposure Medium Total							2.02E-06					0.02

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Current
Receptor Population: Military Base Personnel
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Air	Fugative Dust	1,4-Dichlorobenzene (p-)	--	6.6E-09	--	--	6.57E-09	(o) Lookup, (i) Liver	--	2.27E-05	--	2.27E-05
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	--	1.1E-10	--	--	1.07E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	6.4E-10	--	--	6.43E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	1.2E-10	--	--	1.24E-10	NA	--	--	--	--
			Benzo(k)fluoranthene	--	6.7E-12	--	--	6.70E-12	NA	--	--	--	--
			Carbazole	--	3.0E-11	--	--	2.95E-11	NA	--	--	--	--
			Chrysene	--	1.1E-11	--	--	1.06E-11	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	1.4E-10	--	--	1.41E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2.7E-11	--	--	2.68E-11	NA	--	--	--	--
			Arsenic	--	8.7E-11	--	--	8.67E-11	(o) Skin / CVS	--	--	--	--
			Cadmium	--	5.8E-11	--	--	5.84E-11	Kidney	--	--	--	--
			Chemical Total	--	7.8E-09	--		7.80E-09		--	2.27E-05	--	2.27E-05
		Exposure Point Total						7.80E-09					2.27E-05
	Exposure Medium Total							7.80E-09					2.27E-05
Surface Soil Total								**2.03E-06**					**0.02**
Military Base Personnel Total								**2.03E-06**					**0.02**

Notes:
Target Organ Abbreviations:
CVS = Cardiovascular System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	2.0E-06
Total Risk Across All Media and All Exposure Routes	2.0E-06

All Exposure Routes:
Total Kidney HI = 0.01

Inhalation Exposure Routes:
Inhalation Liver HI = 2.27E-05

Hazard Index Across Surface Soil	0.02
All Media and All Exposure Routes	0.02

Oral and Dermal Exposure Routes:
Oral / Dermal Whole Body HI = 0.00
Oral / Dermal Cardiovascular System HI = 0.01
Oral / Dermal Skin HI = 0.01

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	1,4-Dichlorobenzene (p-)	1.4E-09	--	1.4E-10	--	1.50E-09	(o) Lookup, (i) Liver	1.32E-05	--	1.40E-06	1.46E-05
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	5.28E-04	--	5.60E-05	5.84E-04
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	4.5E-08	--	6.2E-08	--	1.07E-07	NA	--	--	--	--
			Benzo(a)pyrene	4.9E-07	--	6.7E-07	--	1.15E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	9.8E-08	--	1.4E-07	--	2.34E-07	NA	--	--	--	--
			Benzo(k)fluoranthene	5.8E-09	--	8.0E-09	--	1.38E-08	NA	--	--	--	--
			Carbazole	3.6E-09	--	4.9E-09	--	8.52E-09	NA	--	--	--	--
			Chrysene	5.7E-10	--	7.9E-10	--	1.37E-09	ImS	--	--	--	--
			Dibenz(a,h)anthracene	3.7E-07	--	5.1E-07	--	8.76E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4.7E-08	--	6.4E-08	--	1.11E-07	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	2.23E-04	--	2.37E-05	2.47E-04
			Arsenic	1.8E-07	--	5.8E-08	--	2.41E-07	(o) Skin / CVS	2.84E-03	--	9.03E-04	3.74E-03
			Cadmium	--	--	--	--	--	Kidney	3.47E-03	--	7.36E-04	4.21E-03
			Chemical Total	1.2E-06	--	1.5E-06		2.75E-06		7.08E-03	--	1.72E-03	8.80E-03
		Exposure Point Total						2.75E-06					8.80E-03
	Exposure Medium Total							2.75E-06					8.80E-03

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Air	Fugative Dust	1,4-Dichlorobenzene (p-)	--	2.2E-09	--	--	2.24E-09	(o) Lookup, (i) Liver	--	3.09E-06	--	3.09E-06
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	6.63E-03	--	6.63E-03
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	--	5.8E-11	--	--	5.85E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	3.3E-10	--	--	3.29E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	1.1E-10	--	--	1.10E-10	NA	--	--	--	--
			Benzo(k)fluoranthene	--	3.1E-12	--	--	3.08E-12	NA	--	--	--	--
			Carbazole	--	2.4E-11	--	--	2.40E-11	NA	--	--	--	--
			Chrysene	--	4.9E-12	--	--	4.92E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	1.1E-10	--	--	1.05E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1.4E-11	--	--	1.40E-11	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	2.81E-03	--	2.81E-03
			Arsenic	--	3.2E-11	--	--	3.23E-11	(o) Skin / CVS	--	--	--	--
			Cadmium	--	2.8E-11	--	--	2.76E-11	Kidney	--	--	--	--
			Chemical Total	--	2.9E-09	--		2.95E-09		--	9.44E-03	--	9.44E-03
		Exposure Point Total						2.95E-09					9.44E-03
	Exposure Medium Total							2.95E-09					9.44E-03
Surface Soil Total								**2.75E-06**					**0.02**
Adolescent Trespassers Total								**2.75E-06**					**0.02**

Notes:
Target Organ Abbreviations:
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	2.8E-06
Total Risk Across All Media and All Exposure Routes	2.8E-06

All Exposure Routes:

Total Kidney HI =	0.00

Inhalation Exposure Routes:

Inhalation Liver HI =	3.09E-06
Inhalation Respiratory System HI =	9.44E-03

Hazard Index Across Surface Soil	0.02
All Media and All Exposure Routes	0.02

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	0.00
Oral / Dermal Cardiovascular System HI =	0.00
Oral / Dermal Skin HI =	0.00

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	1,4-Dichlorobenzene (p-)	1.4E-08	--	5.6E-10	--	1.47E-08	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	4.7E-07	--	2.4E-07	--	7.09E-07	NA	--	--	--	--
			Benzo(a)pyrene	5.0E-06	--	2.6E-06	--	7.65E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	1.0E-06	--	5.3E-07	--	1.55E-06	NA	--	--	--	--
			Benzo(k)fluoranthene	6.0E-08	--	3.1E-08	--	9.13E-08	NA	--	--	--	--
			Carbazole	3.7E-08	--	1.9E-08	--	5.65E-08	NA	--	--	--	--
			Chrysene	6.0E-09	--	3.1E-09	--	9.07E-09	ImS	--	--	--	--
			Dibenz(a,h)anthracene	3.8E-06	--	2.0E-06	--	5.81E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4.8E-07	--	2.5E-07	--	7.34E-07	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Arsenic	1.9E-06	--	2.3E-07	--	2.12E-06	(o) Skin / CVS	0.01	--	0.00	0.01
			Cadmium	--	--	--	--	--	Kidney	0.02	--	0.00	0.02
			Chemical Total	1.3E-05	--	5.9E-06		1.88E-05		0.03	--	0.00	0.03
		Exposure Point Total						1.88E-05					0.03
	Exposure Medium Total							1.88E-05					0.03
	Air	Fugative Dust	1,4-Dichlorobenzene (p-)	--	8.2E-09	--	--	8.23E-09	(o) Lookup, (i) Liver	--	0.00	--	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.01	--	0.01
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	--	2.2E-10	--	--	2.15E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	1.2E-09	--	--	1.21E-09	NA	--	--	--	--
			Benzo(b)fluoranthene	--	4.1E-10	--	--	4.05E-10	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1.1E-11	--	--	1.14E-11	NA	--	--	--	--
			Carbazole	--	8.8E-11	--	--	8.84E-11	NA	--	--	--	--
			Chrysene	--	1.8E-11	--	--	1.81E-11	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	3.9E-10	--	--	3.88E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	5.2E-11	--	--	5.17E-11	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.00	--	0.00
			Arsenic	--	1.2E-10	--	--	1.19E-10	(o) Skin / CVS	--	--	--	--
			Cadmium	--	1.0E-10	--	--	1.01E-10	Kidney	--	--	--	--
			Chemical Total	--	1.1E-08	--		1.08E-08		--	0.01	--	0.01
		Exposure Point Total						1.08E-08					0.01
	Exposure Medium Total							1.08E-08					0.01
Surface Soil Total								**1.88E-05**					**0.05**

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Subsurface Soil	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	8.5E-08	--	4.4E-08	--	1.30E-07	NA	--	--	--	--
			Benzo(a)pyrene	8.0E-07	--	4.2E-07	--	1.22E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	9.2E-08	--	4.8E-08	--	1.40E-07	NA	--	--	--	--
			Benzo(k)fluoranthene	8.6E-09	--	4.5E-09	--	1.31E-08	NA	--	--	--	--
			Carbazole	2.0E-09	--	1.0E-09	--	3.04E-09	NA	--	--	--	--
			Chrysene	9.7E-10	--	5.1E-10	--	1.48E-09	ImS	--	--	--	--
			Dibenz(a,h)anthracene	7.3E-07	--	3.8E-07	--	1.11E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	7.6E-08	--	3.9E-08	--	1.15E-07	NA	--	--	--	--
			Arsenic	4.5E-06	--	5.3E-07	--	5.00E-06	(o) Skin / CVS	0.03	--	0.00	0.03
			Chemical Total	6.3E-06	--	1.5E-06		7.73E-06		0.03	--	0.00	0.03
		Exposure Point Total						7.73E-06					0.03
	Exposure Medium Total							7.73E-06					0.03
	Air	Fugative Dust	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	--	3.9E-11	--	--	3.94E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	1.9E-10	--	--	1.93E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	3.6E-11	--	--	3.64E-11	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1.6E-12	--	--	1.63E-12	NA	--	--	--	--
			Carbazole	--	4.8E-12	--	--	4.75E-12	NA	--	--	--	--
			Chrysene	--	3.0E-12	--	--	2.95E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	7.4E-11	--	--	7.40E-11	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	8.1E-12	--	--	8.08E-12	NA	--	--	--	--
			Arsenic	--	2.8E-10	--	--	2.80E-10	(o) Skin / CVS	--	--	--	--
			Chemical Total	--	6.4E-10	--		6.40E-10		--	--	--	--
		Exposure Point Total						6.40E-10					--
	Exposure Medium Total							6.40E-10					--
Subsurface Soil Total								**7.73E-06**					**0.03**

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Shallow Groundwater	Shallow Groundwater	Tap	1,1-Dichloroethene	--	--	--	--	--	Liver	0.00	--	0.00	0.00
			1,2,3-Trichlorobenzene	--	--	--	--	--	(o) Kidney, (i) Liver	0.01	--	0.01	0.02
			1,2,4-Trimethylbenzene	--	--	--	--	--	Lookup	0.00	--	--	0.00
			1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	0.33	--	0.03	0.36
			1,2-Dichloroethene (total)	--	--	--	--	--	(o) Liver	0.48	--	0.04	0.52
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	0.00	--	0.00	0.00
			1,2-Dichloropropane	1.9E-07	--	1.9E-08	--	2.11E-07	(i) RsS	0.01	--	0.00	0.01
			1,3,5-Trimethylbenzene	--	--	--	--	--	(o) Whole body / Kidney /	0.00	--	--	0.00
			1,4-Dichlorobenzene (p-)	4.5E-07	--	3.0E-07	--	7.53E-07	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Chlorotoluene	--	--	--	--	--	(o) Whole body	0.00	--	--	0.00
			4-Isopropyltoluene	--	--	--	--	--	NA	--	--	--	--
			Benzene	5.1E-06	--	7.8E-07	--	5.85E-06	CVS	0.07	--	0.01	0.08
			Bromodichloromethane	1.2E-06	--	9.5E-08	--	1.26E-06	(o) Kidney	0.00	--	0.00	0.00
			Bromoform	2.1E-07	--	1.4E-08	--	2.20E-07	(o) Liver	0.00	--	0.00	0.00
			Chloroform	--	--	--	--	--	(o) Liver	0.00	--	0.00	0.00
			Ethylbenzene	--	--	--	--	--	(o) Liver / Kidney, (i) Whole	0.00	--	0.00	0.00
			Isopropylbenzene (Cumene)	--	--	--	--	--	Kidney	0.00	--	--	0.00
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.23	--	0.15	0.38
			n-Butylbenzene	--	--	--	--	--	NA	0.00	--	--	0.00
			Tetrachloroethene (PCE)	1.3E-05	--	8.0E-06	--	2.14E-05	(o) Liver / Whole Body, (i)	0.01	--	0.00	0.01
			Toluene	--	--	--	--	--	(o) Kidney, (i) CNS / RsS	0.00	--	0.00	0.00
			Trichloroethene (TCE)	1.2E-03	--	2.1E-04	--	**1.40E-03**	(o) Kidney / Liver / Fetus, (i)	29.02	--	5.02	**34.04**
			Vinyl Chloride	2.2E-04	--	1.2E-05	--	**2.32E-04**	Liver	0.14	--	0.01	0.15
			Xylene, m/p-	--	--	--	--	--	(o) Whole body, (i) CNS	0.00	--	0.00	0.00
			Xylene, o-	--	--	--	--	--	(o) Whole body, (i) CNS	0.00	--	0.00	0.00
			Xylenes, total	--	--	--	--	--	(o) Whole body, (i) CNS	0.00	--	0.00	0.00
			1,1'-Biphenyl	--	--	--	--	--	(o) Kidney	0.00	--	--	0.00
			2,4-Dimethylphenol	--	--	--	--	--	(o) Whole Body / CVS	0.09	--	0.01	0.10
			2-Methylnaphthalene	--	--	--	--	--	(o) Lung	0.31	--	0.39	0.70
			2-Methylphenol (o-Cresol)	--	--	--	--	--	(o) Whole body / CVS	0.01	--	0.00	0.02
			4-Methylphenol (p-Cresol)	--	--	--	--	--	(o) CNS / RsS / Whole Body	0.10	--	0.01	0.11
			Acenaphthene	--	--	--	--	--	(o) Liver	0.01	--	0.02	0.04
			Bis(2-ethylhexyl) Phthalate (B	7.2E-07	--	1.4E-06	--	2.12E-06	(o) Liver	0.01	--	0.01	0.02
			Carbazole	1.9E-06	--	1.8E-06	--	3.69E-06	NA	--	--	--	--
			Dibenzofuran	--	--	--	--	--	(o) Lookup	0.18	--	0.31	0.49
			Fluorene	--	--	--	--	--	(o) CVS	0.01	--	0.02	0.03
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.23	--	0.15	0.38
			Chemical Total	1.4E-03	--	2.3E-04		**1.67E-03**		31.27	--	6.21	**37.48**
		Exposure Point Total						**1.67E-03**					**37.48**
	Exposure Medium Total							**1.67E-03**					**37.48**

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Shallow Groundwater	Air	Water Vapors from Showerhead	1,1-Dichloroethene	--	--	--	--	--	Liver	--	0.00	--	0.00
			1,2,3-Trichlorobenzene	--	--	--	--	--	(o) Kidney, (i) Liver	--	0.01	--	0.01
			1,2,4-Trimethylbenzene	--	--	--	--	--	Lookup	--	0.00	--	0.00
			1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	--	0.33	--	0.33
			1,2-Dichloroethene (total)	--	--	--	--	--	(o) Liver	--	0.48	--	0.48
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	--	0.00	--	0.00
			1,2-Dichloropropane	--	1.9E-07	--	--	1.92E-07	(i) RsS	--	0.01	--	0.01
			1,3,5-Trimethylbenzene	--	--	--	--	--	(o) Whole body / Kidney /	--	0.00	--	0.00
			1,4-Dichlorobenzene (p-)	--	4.5E-07	--	--	4.51E-07	(o) Lookup, (i) Liver	--	0.00	--	0.00
			2-Chlorotoluene	--	--	--	--	--	(o) Whole body	--	0.00	--	0.00
			4-Isopropyltoluene	--	--	--	--	--	NA	--	--	--	--
			Benzene	--	5.1E-06	--	--	5.07E-06	CVS	--	0.07	--	0.07
			Bromodichloromethane	--	1.2E-06	--	--	1.16E-06	(o) Kidney	--	0.00	--	0.00
			Bromoform	--	2.1E-07	--	--	2.05E-07	(o) Liver	--	0.00	--	0.00
			Chloroform	--	--	--	--	--	(o) Liver	--	0.00	--	0.00
			Ethylbenzene	--	--	--	--	--	(o) Liver / Kidney, (i) Whole	--	0.00	--	0.00
			Isopropylbenzene (Cumene)	--	--	--	--	--	Kidney	--	0.00	--	0.00
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.23	--	0.23
			n-Butylbenzene	--	--	--	--	--	NA	--	0.00	--	0.00
			Tetrachloroethene (PCE)	--	1.3E-05	--	--	1.34E-05	(o) Liver / Whole Body, (i)	--	0.01	--	0.01
			Toluene	--	--	--	--	--	(o) Kidney, (i) CNS / RsS	--	0.00	--	0.00
			Trichloroethene (TCE)	--	1.2E-03	--	--	**1.19E-03**	(o) Kidney / Liver / Fetus, (i)	--	29.02	--	**29.02**
			Vinyl Chloride	--	2.2E-04	--	--	**2.20E-04**	Liver	--	0.14	--	0.14
			Xylene, m/p-	--	--	--	--	--	(o) Whole body, (i) CNS	--	0.00	--	0.00
			Xylene, o-	--	--	--	--	--	(o) Whole body, (i) CNS	--	0.00	--	0.00
			Xylenes, total	--	--	--	--	--	(o) Whole body, (i) CNS	--	0.00	--	0.00
			Chemical Total	--	1.4E-03	--		**1.43E-03**		--	30.32	--	**30.32**
		Exposure Point Total						**1.43E-03**					**30.32**
	Exposure Medium Total							**1.43E-03**					**30.32**
Shallow Groundwater Total								**3.10E-03**					**67.80**

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Adult Residents Total								**3.13E-03**					**67.88**

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	1.9E-05
Total Risk Across Subsurface Soil	7.7E-06
Total Risk Across Groundwater	3.1E-03
Total Risk Across All Media and All Exposure Routes	3.1E-03

otal Hazard Index Across Surface Soil	0.05
Hazard Index Across Subsurface Soil	0.03
tal Hazard Index Across Groundwater	67.80
oss All Media and All Exposure Routes	67.88

All Exposure Routes:

Total Cardiovascular System HI =	0.14
Total Kidney HI =	0.02
Total Liver HI =	0.30

Inhalation Exposure Routes:

Inhalation Whole Body HI =	0.00
Inhalation Central Nervous System HI =	29.02
Inhalation Endocrine System HI =	29.02
Inhalation Kidney HI =	0.01
Inhalation Liver HI =	29.03
Inhalation Respiratory System HI =	0.25
Inhalation Fetus HI =	0.00

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	1.00
Oral / Dermal Central Nervous System HI =	0.11
Oral / Dermal Cardiovascular System HI =	0.55
Oral / Dermal Skin HI =	0.05
Oral / Dermal Kidney HI =	34.07
Oral / Dermal Lung HI =	0.70
Oral / Dermal Liver HI =	34.64
Oral / Dermal Respiratory System HI =	0.11
Oral / Dermal Fetus HI =	34.04

TABLE 9.3.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	1,4-Dichlorobenzene (p-)	1.4E-09	--	1.6E-11	--	1.39E-09	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	4.5E-08	--	6.7E-09	--	5.22E-08	NA	--	--	--	--
			Benzo(a)pyrene	4.9E-07	--	7.3E-08	--	5.64E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	1.0E-07	--	1.5E-08	--	1.15E-07	NA	--	--	--	--
			Benzo(k)fluoranthene	5.9E-09	--	8.7E-10	--	6.73E-09	NA	--	--	--	--
			Carbazole	3.6E-09	--	5.4E-10	--	4.16E-09	NA	--	--	--	--
			Chrysene	5.8E-10	--	8.6E-11	--	6.68E-10	ImS	--	--	--	--
			Dibenz(a,h)anthracene	3.7E-07	--	5.5E-08	--	4.28E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4.7E-08	--	7.0E-09	--	5.41E-08	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Arsenic	1.8E-07	--	6.3E-09	--	1.91E-07	(o) Skin / CVS	0.00	--	0.00	0.00
			Cadmium	--	--	--	--	--	Kidney	0.01	--	0.00	0.01
			Chemical Total	1.3E-06	--	1.6E-07		1.42E-06		0.01	--	0.00	0.01
		Exposure Point Total						1.42E-06					0.01
	Exposure Medium Total							1.42E-06					0.01
	Air	Fugative Dust	1,4-Dichlorobenzene (p-)	--	1.6E-09	--	--	1.61E-09	(o) Lookup, (i) Liver	--	0.00	--	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.01	--	0.01
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	--	4.2E-11	--	--	4.20E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	2.4E-10	--	--	2.36E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	7.9E-11	--	--	7.90E-11	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2.2E-12	--	--	2.21E-12	NA	--	--	--	--
			Carbazole	--	1.7E-11	--	--	1.72E-11	NA	--	--	--	--
			Chrysene	--	3.5E-12	--	--	3.53E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	7.6E-11	--	--	7.57E-11	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1.0E-11	--	--	1.01E-11	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.00	--	0.00
			Arsenic	--	2.3E-11	--	--	2.32E-11	(o) Skin / CVS	--	--	--	--
			Cadmium	--	2.0E-11	--	--	1.98E-11	Kidney	--	--	--	--
			Chemical Total	--	2.1E-09	--		2.11E-09		--	0.01	--	0.01
		Exposure Point Total						2.11E-09					0.01
	Exposure Medium Total							2.11E-09					0.01
Surface Soil Total								**1.42E-06**					**0.02**

TABLE 9.3.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Subsurface Soil	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	8.3E-09	--	8.6E-09	--	1.70E-08	NA	--	--	--	--
			Benzo(a)pyrene	7.8E-08	--	8.1E-08	--	1.59E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	9.0E-09	--	9.3E-09	--	1.83E-08	NA	--	--	--	--
			Benzo(k)fluoranthene	8.4E-10	--	8.7E-10	--	1.72E-09	NA	--	--	--	--
			Carbazole	1.9E-10	--	2.0E-10	--	3.97E-10	NA	--	--	--	--
			Chrysene	9.5E-11	--	9.9E-11	--	1.94E-10	ImS	--	--	--	--
			Dibenz(a,h)anthracene	7.1E-08	--	7.4E-08	--	1.45E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	7.4E-09	--	7.6E-09	--	1.50E-08	NA	--	--	--	--
			Arsenic	4.4E-07	--	1.0E-07	--	5.40E-07	(o) Skin / CVS	0.01	--	0.00	0.01
			Chemical Total	6.1E-07	--	2.9E-07		8.96E-07		0.01	--	0.00	0.01
		Exposure Point Total						8.96E-07					0.01
	Exposure Medium Total							8.96E-07					0.01
	Air	Fugative Dust	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	--	7.7E-12	--	--	7.69E-12	NA	--	--	--	--
			Benzo(a)pyrene	--	3.8E-11	--	--	3.75E-11	NA	--	--	--	--
			Benzo(b)fluoranthene	--	7.1E-12	--	--	7.10E-12	NA	--	--	--	--
			Benzo(k)fluoranthene	--	3.2E-13	--	--	3.18E-13	NA	--	--	--	--
			Carbazole	--	9.3E-13	--	--	9.27E-13	NA	--	--	--	--
			Chrysene	--	5.8E-13	--	--	5.76E-13	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	1.4E-11	--	--	1.44E-11	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1.6E-12	--	--	1.57E-12	NA	--	--	--	--
			Arsenic	--	5.5E-11	--	--	5.46E-11	(o) Skin / CVS	--	--	--	--
			Chemical Total	--	1.2E-10	--		1.25E-10		--	--	--	--
		Exposure Point Total						1.25E-10					--
	Exposure Medium Total							1.25E-10					--
Subsurface Soil Total								**8.97E-07**					**0.01**

TABLE 9.3.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Shallow Groundwater	Shallow Groundwater	Tap	1,1-Dichloroethene	--	--	--	--	--	Liver	0.00	--	0.00	0.00
			1,2,3-Trichlorobenzene	--	--	--	--	--	(o) Kidney, (i) Liver	0.00	--	0.00	0.01
			1,2,4-Trimethylbenzene	--	--	--	--	--	Lookup	0.00	--	--	0.00
			1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	0.15	--	0.01	0.17
			1,2-Dichloroethene (total)	--	--	--	--	--	(o) Liver	0.22	--	0.02	0.24
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	0.00	--	0.00	0.00
			1,2-Dichloropropane	2.6E-08	--	2.5E-09	--	2.86E-08	(i) RsS	0.00	--	0.00	0.00
			1,3,5-Trimethylbenzene	--	--	--	--	--	(o) Whole body / Kidney /	0.00	--	--	0.00
			1,4-Dichlorobenzene (p-)	6.2E-08	--	3.9E-08	--	1.00E-07	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Chlorotoluene	--	--	--	--	--	(o) Whole body	0.00	--	--	0.00
			4-Isopropyltoluene	--	--	--	--	--	NA	--	--	--	--
			Benzene	6.9E-07	--	9.9E-08	--	7.92E-07	CVS	0.03	--	0.00	0.04
			Bromodichloromethane	1.6E-07	--	1.2E-08	--	1.71E-07	(o) Kidney	0.00	--	0.00	0.00
			Bromoform	2.8E-08	--	1.8E-09	--	2.99E-08	(o) Liver	0.00	--	0.00	0.00
			Chloroform	--	--	--	--	--	(o) Liver	0.00	--	0.00	0.00
			Ethylbenzene	--	--	--	--	--	(o) Liver / Kidney, (i) Whole	0.00	--	0.00	0.00
			Isopropylbenzene (Cumene)	--	--	--	--	--	Kidney	0.00	--	--	0.00
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.11	--	0.07	0.17
			n-Butylbenzene	--	--	--	--	--	NA	0.00	--	--	0.00
			Tetrachloroethene (PCE)	1.8E-06	--	1.0E-06	--	2.85E-06	(o) Liver / Whole Body, (i)	0.00	--	0.00	0.01
			Toluene	--	--	--	--	--	(o) Kidney, (i) CNS / RsS	0.00	--	0.00	0.00
			Trichloroethene (TCE)	1.6E-04	--	2.6E-05	--	**1.89E-04**	(o) Kidney / Liver / Fetus, (i)	13.58	--	2.21	**15.79**
			Vinyl Chloride	3.0E-05	--	1.5E-06	--	3.15E-05	Liver	0.07	--	0.00	0.07
			Xylene, m/p-	--	--	--	--	--	(o) Whole body, (i) CNS	0.00	--	0.00	0.00
			Xylene, o-	--	--	--	--	--	(o) Whole body, (i) CNS	0.00	--	0.00	0.00
			Xylenes, total	--	--	--	--	--	(o) Whole body, (i) CNS	0.00	--	0.00	0.00
			1,1'-Biphenyl	--	--	--	--	--	(o) Kidney	0.00	--	--	0.00
			2,4-Dimethylphenol	--	--	--	--	--	(o) Whole Body / CVS	0.04	--	0.01	0.05
			2-Methylnaphthalene	--	--	--	--	--	(o) Lung	0.15	--	0.17	0.32
			2-Methylphenol (o-Cresol)	--	--	--	--	--	(o) Whole body / CVS	0.01	--	0.00	0.01
			4-Methylphenol (p-Cresol)	--	--	--	--	--	(o) CNS / RsS / Whole Body	0.05	--	0.00	0.05
			Acenaphthene	--	--	--	--	--	(o) Liver	0.01	--	0.01	0.02
			Bis(2-ethylhexyl) Phthalate (B	9.9E-08	--	1.8E-07	--	2.78E-07	(o) Liver	0.00	--	0.01	0.01
			Carbazole	2.6E-07	--	2.3E-07	--	4.88E-07	NA	--	--	--	--
			Dibenzofuran	--	--	--	--	--	(o) Lookup	0.08	--	0.14	0.22
			Fluorene	--	--	--	--	--	(o) CVS	0.00	--	0.01	0.01
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.11	--	0.07	0.17
			Chemical Total	2.0E-04	--	3.0E-05		**2.26E-04**		14.63	--	2.73	**17.36**
		Exposure Point Total						**2.26E-04**					**17.36**
	Exposure Medium Total							**2.26E-04**					**17.36**

TABLE 9.3.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Shallow Groundwater	Air	Water Vapors from Showerhead	1,1-Dichloroethene	--	--	--	--	--	Liver	--	0.00	--	0.00
			1,2,3-Trichlorobenzene	--	--	--	--	--	(o) Kidney, (i) Liver	--	0.00	--	0.00
			1,2,4-Trimethylbenzene	--	--	--	--	--	Lookup	--	0.00	--	0.00
			1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	--	0.15	--	0.15
			1,2-Dichloroethene (total)	--	--	--	--	--	(o) Liver	--	0.22	--	0.22
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	--	0.00	--	0.00
			1,2-Dichloropropane	--	2.6E-08	--	--	2.62E-08	(i) RsS	--	0.00	--	0.00
			1,3,5-Trimethylbenzene	--	--	--	--	--	(o) Whole body / Kidney /	--	0.00	--	0.00
			1,4-Dichlorobenzene (p-)	--	6.2E-08	--	--	6.15E-08	(o) Lookup, (i) Liver	--	0.00	--	0.00
			2-Chlorotoluene	--	--	--	--	--	(o) Whole body	--	0.00	--	0.00
			4-Isopropyltoluene	--	--	--	--	--	NA	--	--	--	--
			Benzene	--	6.9E-07	--	--	6.93E-07	CVS	--	0.03	--	0.03
			Bromodichloromethane	--	1.6E-07	--	--	1.59E-07	(o) Kidney	--	0.00	--	0.00
			Bromoform	--	2.8E-08	--	--	2.80E-08	(o) Liver	--	0.00	--	0.00
			Chloroform	--	--	--	--	--	(o) Liver	--	0.00	--	0.00
			Ethylbenzene	--	--	--	--	--	(o) Liver / Kidney, (i) Whole	--	0.00	--	0.00
			Isopropylbenzene (Cumene)	--	--	--	--	--	Kidney	--	0.00	--	0.00
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.11	--	0.11
			n-Butylbenzene	--	--	--	--	--	NA	--	0.00	--	0.00
			Tetrachloroethene (PCE)	--	1.8E-06	--	--	1.83E-06	(o) Liver / Whole Body, (i)	--	0.00	--	0.00
			Toluene	--	--	--	--	--	(o) Kidney, (i) CNS / RsS	--	0.00	--	0.00
			Trichloroethene (TCE)	--	1.6E-04	--	--	**1.63E-04**	(o) Kidney / Liver / Fetus, (i)	--	13.58	--	**13.58**
			Vinyl Chloride	--	3.0E-05	--	--	3.01E-05	Liver	--	0.07	--	0.07
			Xylene, m/p-	--	--	--	--	--	(o) Whole body, (i) CNS	--	0.00	--	0.00
			Xylene, o-	--	--	--	--	--	(o) Whole body, (i) CNS	--	0.00	--	0.00
			Xylenes, total	--	--	--	--	--	(o) Whole body, (i) CNS	--	0.00	--	0.00
			Chemical Total	--	2.0E-04	--		**1.96E-04**		--	14.19	--	**14.19**
		Exposure Point Total						**1.96E-04**					**14.19**
	Exposure Medium Total							**1.96E-04**					**14.19**
Shallow Groundwater Total								**4.22E-04**					31.55

TABLE 9.3.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Adult Residents Total								4.24E-04					31.58

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	1.4E-06
Total Risk Across Subsurface Soil	9.0E-07
Total Risk Across Groundwater	4.2E-04
Total Risk Across All Media and All Exposure Routes	4.2E-04

All Exposure Routes:

Total Cardiovascular System HI =	0.07
Total Kidney HI =	0.01
Total Liver HI =	0.14

Inhalation Exposure Routes:

Inhalation Whole Body HI =	0.00
Inhalation Central Nervous System HI =	13.58
Inhalation Endocrine System HI =	13.58
Inhalation Kidney HI =	0.00
Inhalation Liver HI =	13.59
Inhalation Respiratory System HI =	0.12
Inhalation Fetus HI =	0.00

otal Hazard Index Across Surface Soil	0.02
Hazard Index Across Subsurface Soil	0.01
tal Hazard Index Across Groundwater	31.55
oss All Media and All Exposure Routes	31.58

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	0.46
Oral / Dermal Central Nervous System HI =	0.05
Oral / Dermal Cardiovascular System HI =	0.25
Oral / Dermal Skin HI =	0.02
Oral / Dermal Kidney HI =	15.80
Oral / Dermal Lung HI =	0.32
Oral / Dermal Liver HI =	16.07
Oral / Dermal Respiratory System HI =	0.05
Oral / Dermal Fetus HI =	15.79

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	1,4-Dichlorobenzene (p-)	3.3E-08	--	9.2E-10	--	3.38E-08	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.02	--	0.00	0.02
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	1.1E-06	--	4.0E-07	--	1.48E-06	NA	--	--	--	--
			Benzo(a)pyrene	1.2E-05	--	4.3E-06	--	1.60E-05	NA	--	--	--	--
			Benzo(b)fluoranthene	2.4E-06	--	8.7E-07	--	3.26E-06	NA	--	--	--	--
			Benzo(k)fluoranthene	1.4E-07	--	5.1E-08	--	1.91E-07	NA	--	--	--	--
			Carbazole	8.7E-08	--	3.2E-08	--	1.18E-07	NA	--	--	--	--
			Chrysene	1.4E-08	--	5.1E-09	--	1.90E-08	ImS	--	--	--	--
			Dibenz(a,h)anthracene	8.9E-06	--	3.2E-06	--	1.22E-05	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1.1E-06	--	4.1E-07	--	1.54E-06	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.01	--	0.00	0.01
			Arsenic	4.4E-06	--	3.7E-07	--	4.79E-06	(o) Skin / CVS	0.11	--	0.01	0.12
			Cadmium	--	--	--	--	--	Kidney	0.14	--	0.01	0.15
			Chemical Total	3.0E-05	--	9.7E-06		3.96E-05		0.29	--	0.02	0.30
		Exposure Point Total						3.96E-05					0.30
	Exposure Medium Total							3.96E-05					0.30
	Air	Fugative Dust	1,4-Dichlorobenzene (p-)	--	2.0E-08	--	--	2.00E-08	(o) Lookup, (i) Liver	--	0.00	--	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.10	--	0.10
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	--	5.2E-10	--	--	5.22E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	2.9E-09	--	--	2.94E-09	NA	--	--	--	--
			Benzo(b)fluoranthene	--	9.8E-10	--	--	9.83E-10	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2.8E-11	--	--	2.76E-11	NA	--	--	--	--
			Carbazole	--	2.1E-10	--	--	2.15E-10	NA	--	--	--	--
			Chrysene	--	4.4E-11	--	--	4.39E-11	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	9.4E-10	--	--	9.42E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1.3E-10	--	--	1.25E-10	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.04	--	0.04
			Arsenic	--	2.9E-10	--	--	2.88E-10	(o) Skin / CVS	--	--	--	--
			Cadmium	--	2.5E-10	--	--	2.46E-10	Kidney	--	--	--	--
			Chemical Total	--	2.6E-08	--		2.63E-08		--	0.14	--	0.14
		Exposure Point Total						2.63E-08					0.14
	Exposure Medium Total							2.63E-08					0.14
Surface Soil Total								**3.97E-05**					**0.44**

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Subsurface Soil	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	2.0E-07	--	7.3E-08	--	2.72E-07	NA	--	--	--	--
			Benzo(a)pyrene	1.9E-06	--	6.8E-07	--	2.55E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	2.1E-07	--	7.8E-08	--	2.92E-07	NA	--	--	--	--
			Benzo(k)fluoranthene	2.0E-08	--	7.3E-09	--	2.75E-08	NA	--	--	--	--
			Carbazole	4.7E-09	--	1.7E-09	--	6.36E-09	NA	--	--	--	--
			Chrysene	2.3E-09	--	8.3E-10	--	3.10E-09	ImS	--	--	--	--
			Dibenz(a,h)anthracene	1.7E-06	--	6.2E-07	--	2.32E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1.8E-07	--	6.4E-08	--	2.40E-07	NA	--	--	--	--
			Arsenic	1.0E-05	--	8.8E-07	--	1.13E-05	(o) Skin / CVS	0.27	--	0.02	0.29
			Chemical Total	1.5E-05	--	2.4E-06		1.70E-05		0.27	--	0.02	0.29
		Exposure Point Total						1.70E-05					0.29
	Exposure Medium Total							1.70E-05					0.29
	Air	Fugative Dust	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	--	9.6E-11	--	--	9.56E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	4.7E-10	--	--	4.67E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	8.8E-11	--	--	8.83E-11	NA	--	--	--	--
			Benzo(k)fluoranthene	--	4.0E-12	--	--	3.96E-12	NA	--	--	--	--
			Carbazole	--	1.2E-11	--	--	1.15E-11	NA	--	--	--	--
			Chrysene	--	7.2E-12	--	--	7.17E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	1.8E-10	--	--	1.80E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2.0E-11	--	--	1.96E-11	NA	--	--	--	--
			Arsenic	--	6.8E-10	--	--	6.80E-10	(o) Skin / CVS	--	--	--	--
			Chemical Total	--	1.6E-09	--		1.55E-09		--	--	--	--
		Exposure Point Total						1.55E-09					--
	Exposure Medium Total							1.55E-09					--
Subsurface Soil Total								**1.70E-05**					**0.29**

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Shallow Groundwater	Shallow Groundwater	Tap	1,1-Dichloroethene	--	--	--	--	--	Liver	0.00	--	0.00	0.01
			1,2,3-Trichlorobenzene	--	--	--	--	--	(o) Kidney, (i) Liver	0.02	--	0.02	0.04
			1,2,4-Trimethylbenzene	--	--	--	--	--	Lookup	0.00	--	--	0.00
			1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	0.77	--	0.07	0.84
			1,2-Dichloroethene (total)	--	--	--	--	--	(o) Liver	1.12	--	0.10	**1.22**
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	0.01	--	0.00	0.01
			1,2-Dichloropropane	1.1E-07	--	1.1E-08	--	1.23E-07	(i) RsS	0.02	--	0.00	0.02
			1,3,5-Trimethylbenzene	--	--	--	--	--	(o) Whole body / Kidney /	0.00	--	--	0.00
			1,4-Dichlorobenzene (p-)	2.6E-07	--	1.7E-07	--	4.33E-07	(o) Lookup, (i) Liver	0.00	--	0.00	0.01
			2-Chlorotoluene	--	--	--	--	--	(o) Whole body	0.01	--	--	0.01
			4-Isopropyltoluene	--	--	--	--	--	NA	--	--	--	--
			Benzene	3.0E-06	--	4.7E-07	--	3.43E-06	CVS	0.16	--	0.02	0.18
			Bromodichloromethane	6.8E-07	--	5.3E-08	--	7.33E-07	(o) Kidney	0.01	--	0.00	0.01
			Bromoform	1.2E-07	--	8.0E-09	--	1.28E-07	(o) Liver	0.01	--	0.00	0.01
			Chloroform	--	--	--	--	--	(o) Liver	0.00	--	0.00	0.00
			Ethylbenzene	--	--	--	--	--	(o) Liver / Kidney, (i) Whole	0.00	--	0.00	0.01
			Isopropylbenzene (Cumene)	--	--	--	--	--	Kidney	0.00	--	--	0.00
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.53	--	0.34	0.87
			n-Butylbenzene	--	--	--	--	--	NA	0.01	--	--	0.01
			Tetrachloroethene (PCE)	7.8E-06	--	4.5E-06	--	1.23E-05	(o) Liver / Whole Body, (i)	0.02	--	0.01	0.03
			Toluene	--	--	--	--	--	(o) Kidney, (i) CNS / RsS	0.00	--	0.00	0.00
			Trichloroethene (TCE)	7.0E-04	--	1.2E-04	--	**8.13E-04**	(o) Kidney / Liver / Fetus, (i)	67.71	--	11.29	**79.00**
			Vinyl Chloride	1.3E-04	--	7.0E-06	--	**1.36E-04**	Liver	0.33	--	0.02	0.35
			Xylene, m/p-	--	--	--	--	--	(o) Whole body, (i) CNS	0.00	--	0.00	0.01
			Xylene, o-	--	--	--	--	--	(o) Whole body, (i) CNS	0.00	--	0.00	0.00
			Xylenes, total	--	--	--	--	--	(o) Whole body, (i) CNS	0.00	--	0.00	0.00
			1,1'-Biphenyl	--	--	--	--	--	(o) Kidney	0.01	--	--	0.01
			2,4-Dimethylphenol	--	--	--	--	--	(o) Whole Body / CVS	0.20	--	0.03	0.23
			2-Methylnaphthalene	--	--	--	--	--	(o) Lung	0.73	--	0.87	**1.60**
			2-Methylphenol (o-Cresol)	--	--	--	--	--	(o) Whole body / CVS	0.03	--	0.00	0.04
			4-Methylphenol (p-Cresol)	--	--	--	--	--	(o) CNS / RsS / Whole Body	0.23	--	0.02	0.25
			Acenaphthene	--	--	--	--	--	(o) Liver	0.03	--	0.05	0.09
			Bis(2-ethylhexyl) Phthalate (B	4.2E-07	--	7.8E-07	--	1.21E-06	(o) Liver	0.02	--	0.03	0.05
			Carbazole	1.1E-06	--	1.0E-06	--	2.11E-06	NA	--	--	--	--
			Dibenzofuran	--	--	--	--	--	(o) Lookup	0.42	--	0.70	**1.12**
			Fluorene	--	--	--	--	--	(o) CVS	0.02	--	0.04	0.06
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.53	--	0.34	0.87
			Chemical Total	8.4E-04	--	1.3E-04		9.68E-04		72.96	--	13.96	86.92
		Exposure Point Total						9.68E-04					86.92
	Exposure Medium Total							9.68E-04					86.92
Shallow Groundwater Total								9.68E-04					86.92

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Young Child Residents Total								1.03E-03					87.66

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	4.0E-05
Total Risk Across Subsurface Soil	1.7E-05
Total Risk Across Groundwater	9.7E-04
Total Risk Across All Media and All Exposure Routes	1.0E-03

otal Hazard Index Across Surface Soil	0.44
Hazard Index Across Subsurface Soil	0.29
tal Hazard Index Across Groundwater	86.92
oss All Media and All Exposure Routes	87.66

All Exposure Routes:

Total Cardiovascular System HI =	0.18
Total Kidney HI =	0.15
Total Liver HI =	0.36

Inhalation Exposure Routes:

Inhalation Whole Body HI =	0.00E+00
Inhalation Central Nervous System HI =	0.00E+00
Inhalation Endocrine System HI =	0.00E+00
Inhalation Kidney HI =	0.00E+00
Inhalation Liver HI =	4.61E-05
Inhalation Respiratory System HI =	1.40E-01
Inhalation Fetus HI =	0.00E+00

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	2.33
Oral / Dermal Central Nervous System HI =	0.25
Oral / Dermal Cardiovascular System HI =	1.59
Oral / Dermal Skin HI =	0.42
Oral / Dermal Kidney HI =	79.06
Oral / Dermal Lung HI =	1.60
Oral / Dermal Liver HI =	80.40
Oral / Dermal Respiratory System HI =	0.25
Oral / Dermal Fetus HI =	79.00

TABLE 9.4.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	1,4-Dichlorobenzene (p-)	3.7E-09	--	4.1E-11	--	3.71E-09	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.01	--	0.00	0.01
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	1.2E-07	--	1.8E-08	--	1.39E-07	NA	--	--	--	--
			Benzo(a)pyrene	1.3E-06	--	1.9E-07	--	1.50E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	2.7E-07	--	3.9E-08	--	3.05E-07	NA	--	--	--	--
			Benzo(k)fluoranthene	1.6E-08	--	2.3E-09	--	1.79E-08	NA	--	--	--	--
			Carbazole	9.7E-09	--	1.4E-09	--	1.11E-08	NA	--	--	--	--
			Chrysene	1.6E-09	--	2.3E-10	--	1.78E-09	ImS	--	--	--	--
			Dibenz(a,h)anthracene	9.9E-07	--	1.4E-07	--	1.14E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1.3E-07	--	1.8E-08	--	1.44E-07	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Arsenic	4.9E-07	--	1.7E-08	--	5.09E-07	(o) Skin / CVS	0.04	--	0.00	0.04
			Cadmium	--	--	--	--	--	Kidney	0.05	--	0.00	0.05
			Chemical Total	3.3E-06	--	4.3E-07		3.77E-06		0.10	--	0.00	0.10
		Exposure Point Total						3.77E-06					0.10
	Exposure Medium Total							3.77E-06					0.10
	Air	Fugative Dust	1,4-Dichlorobenzene (p-)	--	4.5E-09	--	--	4.45E-09	(o) Lookup, (i) Liver	--	0.00	--	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.07	--	0.07
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	--	1.2E-10	--	--	1.16E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	6.6E-10	--	--	6.55E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	2.2E-10	--	--	2.19E-10	NA	--	--	--	--
			Benzo(k)fluoranthene	--	6.1E-12	--	--	6.14E-12	NA	--	--	--	--
			Carbazole	--	4.8E-11	--	--	4.78E-11	NA	--	--	--	--
			Chrysene	--	9.8E-12	--	--	9.79E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	2.1E-10	--	--	2.10E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2.8E-11	--	--	2.79E-11	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.03	--	0.03
			Arsenic	--	6.4E-11	--	--	6.43E-11	(o) Skin / CVS	--	--	--	--
			Cadmium	--	5.5E-11	--	--	5.48E-11	Kidney	--	--	--	--
			Chemical Total	--	5.9E-09	--		5.86E-09		--	0.09	--	0.09
		Exposure Point Total						5.86E-09					0.09
	Exposure Medium Total							5.86E-09					0.09
Surface Soil Total								**3.78E-06**					**0.19**

TABLE 9.4.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Subsurface Soil	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	2.2E-08	--	3.2E-09	--	2.54E-08	NA	--	--	--	--
			Benzo(a)pyrene	2.1E-07	--	3.0E-08	--	2.39E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	2.4E-08	--	3.5E-09	--	2.74E-08	NA	--	--	--	--
			Benzo(k)fluoranthene	2.2E-09	--	3.3E-10	--	2.57E-09	NA	--	--	--	--
			Carbazole	5.2E-10	--	7.6E-11	--	5.95E-10	NA	--	--	--	--
			Chrysene	2.5E-10	--	3.7E-11	--	2.90E-10	ImS	--	--	--	--
			Dibenz(a,h)anthracene	1.9E-07	--	2.8E-08	--	2.17E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	2.0E-08	--	2.9E-09	--	2.25E-08	NA	--	--	--	--
			Arsenic	1.2E-06	--	3.9E-08	--	1.20E-06	(o) Skin / CVS	0.09	--	0.00	0.09
			Chemical Total	1.6E-06	--	1.1E-07		1.74E-06		0.09	--	0.00	0.09
		Exposure Point Total						1.74E-06					0.09
	Exposure Medium Total							1.74E-06					0.09
	Air	Fugative Dust	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	--	2.1E-11	--	--	2.13E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	1.0E-10	--	--	1.04E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	2.0E-11	--	--	1.97E-11	NA	--	--	--	--
			Benzo(k)fluoranthene	--	8.8E-13	--	--	8.82E-13	NA	--	--	--	--
			Carbazole	--	2.6E-12	--	--	2.57E-12	NA	--	--	--	--
			Chrysene	--	1.6E-12	--	--	1.60E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	4.0E-11	--	--	4.00E-11	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	4.4E-12	--	--	4.37E-12	NA	--	--	--	--
			Arsenic	--	1.5E-10	--	--	1.52E-10	(o) Skin / CVS	--	--	--	--
			Chemical Total	--	3.5E-10	--		3.46E-10		--	--	--	--
		Exposure Point Total						3.46E-10					--
	Exposure Medium Total							3.46E-10					--
Subsurface Soil Total								**1.74E-06**					**0.09**

TABLE 9.4.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Shallow Groundwater	Shallow Groundwater	Tap	1,1-Dichloroethene	--	--	--	--	--	Liver	0.00	--	0.00	0.00
			1,2,3-Trichlorobenzene	--	--	--	--	--	(o) Kidney, (i) Liver	0.01	--	0.01	0.02
			1,2,4-Trimethylbenzene	--	--	--	--	--	Lookup	0.00	--	--	0.00
			1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	0.51	--	0.03	0.54
			1,2-Dichloroethene (total)	--	--	--	--	--	(o) Liver	0.75	--	0.04	0.78
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	0.01	--	0.00	0.01
			1,2-Dichloropropane	2.5E-08	--	1.4E-09	--	2.63E-08	(i) RsS	0.01	--	0.00	0.01
			1,3,5-Trimethylbenzene	--	--	--	--	--	(o) Whole body / Kidney /	0.00	--	--	0.00
			1,4-Dichlorobenzene (p-)	5.9E-08	--	2.2E-08	--	8.04E-08	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Chlorotoluene	--	--	--	--	--	(o) Whole body	0.00	--	--	0.00
			4-Isopropyltoluene	--	--	--	--	--	NA	--	--	--	--
			Benzene	6.6E-07	--	5.6E-08	--	7.16E-07	CVS	0.10	--	0.01	0.11
			Bromodichloromethane	1.5E-07	--	6.8E-09	--	1.58E-07	(o) Kidney	0.00	--	0.00	0.00
			Bromoform	2.7E-08	--	1.0E-09	--	2.77E-08	(o) Liver	0.01	--	0.00	0.01
			Chloroform	--	--	--	--	--	(o) Liver	0.00	--	0.00	0.00
			Ethylbenzene	--	--	--	--	--	(o) Liver / Kidney, (i) Whole	0.00	--	0.00	0.00
			Isopropylbenzene (Cumene)	--	--	--	--	--	Kidney	0.00	--	--	0.00
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.35	--	0.13	0.48
			n-Butylbenzene	--	--	--	--	--	NA	0.00	--	--	0.00
			Tetrachloroethene (PCE)	1.7E-06	--	5.7E-07	--	2.31E-06	(o) Liver / Whole Body, (i)	0.01	--	0.00	0.01
			Toluene	--	--	--	--	--	(o) Kidney, (i) CNS / RsS	0.00	--	0.00	0.00
			Trichloroethene (TCE)	1.6E-04	--	1.5E-05	--	**1.70E-04**	(o) Kidney / Liver / Fetus, (i)	45.27	--	4.34	**49.60**
			Vinyl Chloride	2.9E-05	--	8.2E-07	--	2.95E-05	Liver	0.22	--	0.01	0.23
			Xylene, m/p-	--	--	--	--	--	(o) Whole body, (i) CNS	0.00	--	0.00	0.00
			Xylene, o-	--	--	--	--	--	(o) Whole body, (i) CNS	0.00	--	0.00	0.00
			Xylenes, total	--	--	--	--	--	(o) Whole body, (i) CNS	0.00	--	0.00	0.00
			1,1'-Biphenyl	--	--	--	--	--	(o) Kidney	0.01	--	--	0.01
			2,4-Dimethylphenol	--	--	--	--	--	(o) Whole Body / CVS	0.14	--	0.01	0.15
			2-Methylnaphthalene	--	--	--	--	--	(o) Lung	0.49	--	0.33	0.82
			2-Methylphenol (o-Cresol)	--	--	--	--	--	(o) Whole body / CVS	0.02	--	0.00	0.02
			4-Methylphenol (p-Cresol)	--	--	--	--	--	(o) CNS / RsS / Whole Body	0.15	--	0.01	0.16
			Acenaphthene	--	--	--	--	--	(o) Liver	0.02	--	0.02	0.04
			Bis(2-ethylhexyl) Phthalate (B	9.4E-08	--	1.0E-07	--	1.95E-07	(o) Liver	0.01	--	0.01	0.02
			Carbazole	2.5E-07	--	1.3E-07	--	3.75E-07	NA	--	--	--	--
			Dibenzofuran	--	--	--	--	--	(o) Lookup	0.28	--	0.27	0.55
			Fluorene	--	--	--	--	--	(o) CVS	0.01	--	0.02	0.03
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.35	--	0.13	0.48
			Chemical Total	1.9E-04	--	1.7E-05		**2.03E-04**		48.78	--	5.36	**54.14**
		Exposure Point Total						**2.03E-04**					**54.14**
	Exposure Medium Total							**2.03E-04**					**54.14**
Shallow Groundwater Total								**2.03E-04**					**54.14**

TABLE 9.4.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Young Child Residents Total								2.09E-04					54.42

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	3.8E-06
Total Risk Across Subsurface Soil	1.7E-06
Total Risk Across Groundwater	**2.0E-04**
Total Risk Across All Media and All Exposure Routes	2.1E-04

otal Hazard Index Across Surface Soil	0.19
Hazard Index Across Subsurface Soil	0.09
tal Hazard Index Across Groundwater	**54.14**
oss All Media and All Exposure Routes	54.42

All Exposure Routes:

Total Cardiovascular System HI =	0.11
Total Kidney HI =	0.05
Total Liver HI =	0.23

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	1.34
Oral / Dermal Central Nervous System HI =	0.16
Oral / Dermal Cardiovascular System HI =	0.88
Oral / Dermal Skin HI =	0.13
Oral / Dermal Kidney HI =	49.64
Oral / Dermal Lung HI =	0.82
Oral / Dermal Liver HI =	50.48
Oral / Dermal Respiratory System HI =	0.16
Oral / Dermal Fetus HI =	49.60

Inhalation Exposure Routes:

Inhalation Whole Body HI =	0.00E+00
Inhalation Central Nervous System HI =	0.00E+00
Inhalation Endocrine System HI =	0.00E+00
Inhalation Kidney HI =	0.00E+00
Inhalation Liver HI =	3.08E-05
Inhalation Respiratory System HI =	9.39E-02
Inhalation Fetus HI =	0.00E+00

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	1,4-Dichlorobenzene (p-)	1.4E-08	--	5.6E-10	--	1.47E-08	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	4.7E-07	--	2.4E-07	--	7.09E-07	NA	--	--	--	--
			Benzo(a)pyrene	5.0E-06	--	2.6E-06	--	7.65E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	1.0E-06	--	5.3E-07	--	1.55E-06	NA	--	--	--	--
			Benzo(k)fluoranthene	6.0E-08	--	3.1E-08	--	9.13E-08	NA	--	--	--	--
			Carbazole	3.7E-08	--	1.9E-08	--	5.65E-08	NA	--	--	--	--
			Chrysene	6.0E-09	--	3.1E-09	--	9.07E-09	ImS	--	--	--	--
			Dibenz(a,h)anthracene	3.8E-06	--	2.0E-06	--	5.81E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4.8E-07	--	2.5E-07	--	7.34E-07	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Arsenic	1.9E-06	--	2.3E-07	--	2.12E-06	(o) Skin / CVS	0.01	--	0.00	0.01
			Cadmium	--	--	--	--	--	Kidney	0.02	--	0.00	0.02
			Chemical Total	1.3E-05	--	5.9E-06		1.88E-05		0.03	--	0.00	0.03
		Exposure Point Total						1.88E-05					0.03
	Exposure Medium Total							1.88E-05					0.03
	Air	Fugative Dust	1,4-Dichlorobenzene (p-)	--	8.2E-09	--	--	8.23E-09	(o) Lookup, (i) Liver	--	0.00	--	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.01	--	0.01
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	--	2.2E-10	--	--	2.15E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	1.2E-09	--	--	1.21E-09	NA	--	--	--	--
			Benzo(b)fluoranthene	--	4.1E-10	--	--	4.05E-10	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1.1E-11	--	--	1.14E-11	NA	--	--	--	--
			Carbazole	--	8.8E-11	--	--	8.84E-11	NA	--	--	--	--
			Chrysene	--	1.8E-11	--	--	1.81E-11	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	3.9E-10	--	--	3.88E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	5.2E-11	--	--	5.17E-11	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.00	--	0.00
			Arsenic	--	1.2E-10	--	--	1.19E-10	(o) Skin / CVS	--	--	--	--
			Cadmium	--	1.0E-10	--	--	1.01E-10	Kidney	--	--	--	--
			Chemical Total	--	1.1E-08	--		1.08E-08		--	0.01	--	0.01
		Exposure Point Total						1.08E-08					0.01
	Exposure Medium Total							1.08E-08					0.01
Surface Soil Total								**1.88E-05**					**0.05**

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Subsurface Soil	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	8.5E-08	--	4.4E-08	--	1.30E-07	NA	--	--	--	--
			Benzo(a)pyrene	8.0E-07	--	4.2E-07	--	1.22E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	9.2E-08	--	4.8E-08	--	1.40E-07	NA	--	--	--	--
			Benzo(k)fluoranthene	8.6E-09	--	4.5E-09	--	1.31E-08	NA	--	--	--	--
			Carbazole	2.0E-09	--	1.0E-09	--	3.04E-09	NA	--	--	--	--
			Chrysene	9.7E-10	--	5.1E-10	--	1.48E-09	ImS	--	--	--	--
			Dibenz(a,h)anthracene	7.3E-07	--	3.8E-07	--	1.11E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	7.6E-08	--	3.9E-08	--	1.15E-07	NA	--	--	--	--
			Arsenic	4.5E-06	--	5.3E-07	--	5.00E-06	(o) Skin / CVS	0.03	--	0.00	0.03
			Chemical Total	6.3E-06	--	1.5E-06		7.73E-06		0.03	--	0.00	0.03
		Exposure Point Total						7.73E-06					0.03
	Exposure Medium Total							7.73E-06					0.03
	Air	Fugative Dust	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	--	3.9E-11	--	--	3.94E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	1.9E-10	--	--	1.93E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	3.6E-11	--	--	3.64E-11	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1.6E-12	--	--	1.63E-12	NA	--	--	--	--
			Carbazole	--	4.8E-12	--	--	4.75E-12	NA	--	--	--	--
			Chrysene	--	3.0E-12	--	--	2.95E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	7.4E-11	--	--	7.40E-11	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	8.1E-12	--	--	8.08E-12	NA	--	--	--	--
			Arsenic	--	2.8E-10	--	--	2.80E-10	(o) Skin / CVS	--	--	--	--
			Chemical Total	--	6.4E-10	--		6.40E-10		--	--	--	--
		Exposure Point Total						6.40E-10					--
	Exposure Medium Total							6.40E-10					--
Subsurface Soil Total								**7.73E-06**					**0.03**

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Deep Groundwater	Deep Groundwater	Tap	1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	0.16	--	0.01	0.17
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	0.01	--	0.00	0.01
			Benzene	6.3E-07	--	9.6E-08	--	7.21E-07	CVS	0.01	--	0.00	0.01
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Trichloroethene (TCE)	1.7E-04	--	3.0E-05	--	**2.00E-04**	(o) Kidney / Liver / Fetus, (i)	4.15	--	0.72	**4.87**
			Vinyl Chloride	7.5E-04	--	4.0E-05	--	**7.86E-04**	Liver	0.48	--	0.03	0.51
			Chemical Total	9.2E-04	--	7.0E-05		**9.87E-04**		4.81	--	0.76	**5.57**
		Exposure Point Total						**9.87E-04**					**5.57**
	Exposure Medium Total							**9.87E-04**					**5.57**
	Air	Water Vapors from Showerhead	1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	--	0.16	--	0.16
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	--	0.01	--	0.01
			Benzene	--	6.3E-07	--	--	6.26E-07	CVS	--	0.01	--	0.01
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.00	--	0.00
			Trichloroethene (TCE)	--	1.7E-04	--	--	**1.71E-04**	(o) Kidney / Liver / Fetus, (i)	--	4.15	--	**4.15**
			Vinyl Chloride	--	7.5E-04	--	--	**7.46E-04**	Liver	--	0.48	--	0.48
			Chemical Total	--	9.2E-04	--		**9.18E-04**		--	4.81	--	**4.81**
		Exposure Point Total						**9.18E-04**					**4.81**
	Exposure Medium Total							**9.18E-04**					**4.81**
Deep Groundwater Total								**1.90E-03**					**10.39**
Adult Residents Total								**1.93E-03**					**10.47**

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	1.9E-05
Total Risk Across Subsurface Soil	7.7E-06
Total Risk Across Groundwater	1.9E-03
Total Risk Across All Media and All Exposure Routes	1.9E-03

All Exposure Routes:

Total Cardiovascular System HI =	0.02
Total Kidney HI =	0.02
Total Liver HI =	0.99

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	4.15
Inhalation Endocrine System HI =	4.15
Inhalation Respiratory System HI =	0.02

otal Hazard Index Across Surface Soil	0.05
Hazard Index Across Subsurface Soil	0.03
tal Hazard Index Across Groundwater	10.39
oss All Media and All Exposure Routes	10.47

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	0.01
Oral / Dermal Cardiovascular System HI =	0.23
Oral / Dermal Skin HI =	0.05
Oral / Dermal Kidney HI =	4.87
Oral / Dermal Liver HI =	4.87
Oral / Dermal Fetus HI =	4.87

TABLE 9.5.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	1,4-Dichlorobenzene (p-)	1.4E-09	--	1.6E-11	--	1.39E-09	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	4.5E-08	--	6.7E-09	--	5.22E-08	NA	--	--	--	--
			Benzo(a)pyrene	4.9E-07	--	7.3E-08	--	5.64E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	1.0E-07	--	1.5E-08	--	1.15E-07	NA	--	--	--	--
			Benzo(k)fluoranthene	5.9E-09	--	8.7E-10	--	6.73E-09	NA	--	--	--	--
			Carbazole	3.6E-09	--	5.4E-10	--	4.16E-09	NA	--	--	--	--
			Chrysene	5.8E-10	--	8.6E-11	--	6.68E-10	ImS	--	--	--	--
			Dibenz(a,h)anthracene	3.7E-07	--	5.5E-08	--	4.28E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4.7E-08	--	7.0E-09	--	5.41E-08	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Arsenic	1.8E-07	--	6.3E-09	--	1.91E-07	(o) Skin / CVS	0.00	--	0.00	0.00
			Cadmium	--	--	--	--	--	Kidney	0.01	--	0.00	0.01
			Chemical Total	1.3E-06	--	1.6E-07		1.42E-06		0.01	--	0.00	0.01
		Exposure Point Total						1.42E-06					0.01
	Exposure Medium Total							1.42E-06					0.01
	Air	Fugative Dust	1,4-Dichlorobenzene (p-)	--	1.6E-09	--	--	1.61E-09	(o) Lookup, (i) Liver	--	0.00	--	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.01	--	0.01
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	--	4.2E-11	--	--	4.20E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	2.4E-10	--	--	2.36E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	7.9E-11	--	--	7.90E-11	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2.2E-12	--	--	2.21E-12	NA	--	--	--	--
			Carbazole	--	1.7E-11	--	--	1.72E-11	NA	--	--	--	--
			Chrysene	--	3.5E-12	--	--	3.53E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	7.6E-11	--	--	7.57E-11	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1.0E-11	--	--	1.01E-11	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.00	--	0.00
			Arsenic	--	2.3E-11	--	--	2.32E-11	(o) Skin / CVS	--	--	--	--
			Cadmium	--	2.0E-11	--	--	1.98E-11	Kidney	--	--	--	--
			Chemical Total	--	2.1E-09	--		2.11E-09		--	0.01	--	0.01
		Exposure Point Total						2.11E-09					0.01
	Exposure Medium Total							2.11E-09					0.01
Surface Soil Total								**1.42E-06**					**0.02**

TABLE 9.5.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Subsurface Soil	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	8.3E-09	--	8.6E-09	--	1.70E-08	NA	--	--	--	--
			Benzo(a)pyrene	7.8E-08	--	8.1E-08	--	1.59E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	9.0E-09	--	9.3E-09	--	1.83E-08	NA	--	--	--	--
			Benzo(k)fluoranthene	8.4E-10	--	8.7E-10	--	1.72E-09	NA	--	--	--	--
			Carbazole	1.9E-10	--	2.0E-10	--	3.97E-10	NA	--	--	--	--
			Chrysene	9.5E-11	--	9.9E-11	--	1.94E-10	ImS	--	--	--	--
			Dibenz(a,h)anthracene	7.1E-08	--	7.4E-08	--	1.45E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	7.4E-09	--	7.6E-09	--	1.50E-08	NA	--	--	--	--
			Arsenic	4.4E-07	--	1.0E-07	--	5.40E-07	(o) Skin / CVS	0.01	--	0.00	0.01
			Chemical Total	6.1E-07	--	2.9E-07		8.96E-07		0.01	--	0.00	0.01
		Exposure Point Total						8.96E-07					0.01
	Exposure Medium Total							8.96E-07					0.01
	Air	Fugative Dust	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	--	7.7E-12	--	--	7.69E-12	NA	--	--	--	--
			Benzo(a)pyrene	--	3.8E-11	--	--	3.75E-11	NA	--	--	--	--
			Benzo(b)fluoranthene	--	7.1E-12	--	--	7.10E-12	NA	--	--	--	--
			Benzo(k)fluoranthene	--	3.2E-13	--	--	3.18E-13	NA	--	--	--	--
			Carbazole	--	9.3E-13	--	--	9.27E-13	NA	--	--	--	--
			Chrysene	--	5.8E-13	--	--	5.76E-13	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	1.4E-11	--	--	1.44E-11	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1.6E-12	--	--	1.57E-12	NA	--	--	--	--
			Arsenic	--	5.5E-11	--	--	5.46E-11	(o) Skin / CVS	--	--	--	--
			Chemical Total	--	1.2E-10	--		1.25E-10		--	--	--	--
		Exposure Point Total						1.25E-10					--
	Exposure Medium Total							1.25E-10					--
Subsurface Soil Total								**8.97E-07**					**0.01**

TABLE 9.5.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Deep Groundwater	Deep Groundwater	Tap	1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	0.07	--	0.01	0.08
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	0.00	--	0.00	0.00
			Benzene	8.5E-08	--	1.2E-08	--	9.77E-08	CVS	0.00	--	0.00	0.00
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Trichloroethene (TCE)	2.3E-05	--	3.8E-06	--	2.71E-05	(o) Kidney / Liver / Fetus, (i)	1.94	--	0.32	**2.26**
			Vinyl Chloride	1.0E-04	--	5.0E-06	--	**1.07E-04**	Liver	0.23	--	0.01	0.24
			Chemical Total	1.3E-04	--	8.8E-06		**1.34E-04**		2.25	--	0.33	2.59
		Exposure Point Total						**1.34E-04**					2.59
	Exposure Medium Total							**1.34E-04**					2.59
	Air	Water Vapors from Showerhead	1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	--	0.07	--	0.07
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	--	0.00	--	0.00
			Benzene	--	8.5E-08	--	--	8.54E-08	CVS	--	0.00	--	0.00
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.00	--	0.00
			Trichloroethene (TCE)	--	2.3E-05	--	--	2.33E-05	(o) Kidney / Liver / Fetus, (i)	--	1.94	--	**1.94**
			Vinyl Chloride	--	1.0E-04	--	--	**1.02E-04**	Liver	--	0.23	--	0.23
			Chemical Total	--	1.3E-04	--		**1.25E-04**		--	2.25	--	2.25
		Exposure Point Total						**1.25E-04**					2.25
	Exposure Medium Total							**1.25E-04**					2.25
Deep Groundwater Total								**2.59E-04**					4.84
Adult Residents Total								**2.62E-04**					4.87

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	1.4E-06
Total Risk Across Subsurface Soil	9.0E-07
Total Risk Across Groundwater	**2.6E-04**
Total Risk Across All Media and All Exposure Routes	**2.6E-04**

All Exposure Routes:

Total Cardiovascular System HI =	0.01
Total Kidney HI =	0.01
Total Liver HI =	0.46

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	1.94
Inhalation Endocrine System HI =	1.94
Inhalation Respiratory System HI =	0.01

otal Hazard Index Across Surface Soil	0.02
Hazard Index Across Subsurface Soil	0.01
tal Hazard Index Across Groundwater	**4.84**
oss All Media and All Exposure Routes	4.87

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	0.00
Oral / Dermal Cardiovascular System HI =	0.10
Oral / Dermal Skin HI =	0.02
Oral / Dermal Kidney HI =	2.26
Oral / Dermal Liver HI =	2.26
Oral / Dermal Fetus HI =	2.26

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	1,4-Dichlorobenzene (p-)	3.3E-08	--	9.2E-10	--	3.38E-08	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.02	--	0.00	0.02
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	1.1E-06	--	4.0E-07	--	1.48E-06	NA	--	--	--	--
			Benzo(a)pyrene	1.2E-05	--	4.3E-06	--	1.60E-05	NA	--	--	--	--
			Benzo(b)fluoranthene	2.4E-06	--	8.7E-07	--	3.26E-06	NA	--	--	--	--
			Benzo(k)fluoranthene	1.4E-07	--	5.1E-08	--	1.91E-07	NA	--	--	--	--
			Carbazole	8.7E-08	--	3.2E-08	--	1.18E-07	NA	--	--	--	--
			Chrysene	1.4E-08	--	5.1E-09	--	1.90E-08	ImS	--	--	--	--
			Dibenz(a,h)anthracene	8.9E-06	--	3.2E-06	--	1.22E-05	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1.1E-06	--	4.1E-07	--	1.54E-06	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.01	--	0.00	0.01
			Arsenic	4.4E-06	--	3.7E-07	--	4.79E-06	(o) Skin / CVS	0.11	--	0.01	0.12
			Cadmium	--	--	--	--	--	Kidney	0.14	--	0.01	0.15
			Chemical Total	3.0E-05	--	9.7E-06		3.96E-05		0.29	--	0.02	0.30
		Exposure Point Total						3.96E-05					0.30
	Exposure Medium Total							3.96E-05					0.30
	Air	Fugative Dust	1,4-Dichlorobenzene (p-)	--	2.0E-08	--	--	2.00E-08	(o) Lookup, (i) Liver	--	0.00	--	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.10	--	0.10
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	--	5.2E-10	--	--	5.22E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	2.9E-09	--	--	2.94E-09	NA	--	--	--	--
			Benzo(b)fluoranthene	--	9.8E-10	--	--	9.83E-10	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2.8E-11	--	--	2.76E-11	NA	--	--	--	--
			Carbazole	--	2.1E-10	--	--	2.15E-10	NA	--	--	--	--
			Chrysene	--	4.4E-11	--	--	4.39E-11	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	9.4E-10	--	--	9.42E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1.3E-10	--	--	1.25E-10	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.04	--	0.04
			Arsenic	--	2.9E-10	--	--	2.88E-10	(o) Skin / CVS	--	--	--	--
			Cadmium	--	2.5E-10	--	--	2.46E-10	Kidney	--	--	--	--
			Chemical Total	--	2.6E-08	--		2.63E-08		--	0.14	--	0.14
		Exposure Point Total						2.63E-08					0.14
	Exposure Medium Total							2.63E-08					0.14
Surface Soil Total								**3.97E-05**					**0.44**

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Subsurface Soil	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	2.0E-07	--	7.3E-08	--	2.72E-07	NA	--	--	--	--
			Benzo(a)pyrene	1.9E-06	--	6.8E-07	--	2.55E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	2.1E-07	--	7.8E-08	--	2.92E-07	NA	--	--	--	--
			Benzo(k)fluoranthene	2.0E-08	--	7.3E-09	--	2.75E-08	NA	--	--	--	--
			Carbazole	4.7E-09	--	1.7E-09	--	6.36E-09	NA	--	--	--	--
			Chrysene	2.3E-09	--	8.3E-10	--	3.10E-09	ImS	--	--	--	--
			Dibenz(a,h)anthracene	1.7E-06	--	6.2E-07	--	2.32E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1.8E-07	--	6.4E-08	--	2.40E-07	NA	--	--	--	--
			Arsenic	1.0E-05	--	8.8E-07	--	1.13E-05	(o) Skin / CVS	0.27	--	0.02	0.29
			Chemical Total	1.5E-05	--	2.4E-06		1.70E-05		0.27	--	0.02	0.29
		Exposure Point Total						1.70E-05					0.29
	Exposure Medium Total							1.70E-05					0.29
	Air	Fugative Dust	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	--	9.6E-11	--	--	9.56E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	4.7E-10	--	--	4.67E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	8.8E-11	--	--	8.83E-11	NA	--	--	--	--
			Benzo(k)fluoranthene	--	4.0E-12	--	--	3.96E-12	NA	--	--	--	--
			Carbazole	--	1.2E-11	--	--	1.15E-11	NA	--	--	--	--
			Chrysene	--	7.2E-12	--	--	7.17E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	1.8E-10	--	--	1.80E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2.0E-11	--	--	1.96E-11	NA	--	--	--	--
			Arsenic	--	6.8E-10	--	--	6.80E-10	(o) Skin / CVS	--	--	--	--
			Chemical Total	--	1.6E-09	--		1.55E-09		--	--	--	--
		Exposure Point Total						1.55E-09					--
	Exposure Medium Total							1.55E-09					--
Subsurface Soil Total								**1.70E-05**					**0.29**

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Deep Groundwater	Deep Groundwater	Tap	1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	0.37	--	0.03	0.41
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	0.01	--	0.00	0.01
			Benzene	3.6E-07	--	5.8E-08	--	4.23E-07	CVS	0.02	--	0.00	0.02
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.01
			Trichloroethene (TCE)	1.0E-04	--	1.7E-05	--	1.16E-04	(o) Kidney / Liver / Fetus, (i)	9.69	--	1.62	**11.31**
			Vinyl Chloride	4.4E-04	--	2.4E-05	--	**4.59E-04**	Liver	1.13	--	0.06	**1.19**
			Chemical Total	5.4E-04	--	4.0E-05		**5.76E-04**		11.23	--	1.72	**12.95**
		Exposure Point Total						**5.76E-04**					**12.95**
	Exposure Medium Total							**5.76E-04**					**12.95**
Deep Groundwater Total								**5.76E-04**					12.95
Young Child Residents Total								**6.32E-04**					13.68

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	4.0E-05
Total Risk Across Subsurface Soil	1.7E-05
Total Risk Across Groundwater	**5.8E-04**
Total Risk Across All Media and All Exposure Routes	6.3E-04

All Exposure Routes:

Total Cardiovascular System HI =	0.02
Total Kidney HI =	0.15
Total Liver HI =	1.19

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	0.00E+00
Inhalation Endocrine System HI =	0.00E+00
Inhalation Respiratory System HI =	1.40E-01

otal Hazard Index Across Surface Soil	0.44
Hazard Index Across Subsurface Soil	0.29
tal Hazard Index Across Groundwater	**12.95**
oss All Media and All Exposure Routes	13.68

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	0.04
Oral / Dermal Cardiovascular System HI =	0.84
Oral / Dermal Skin HI =	0.42
Oral / Dermal Kidney HI =	11.31
Oral / Dermal Liver HI =	11.31
Oral / Dermal Fetus HI =	11.31

TABLE 9.6.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	1,4-Dichlorobenzene (p-)	3.7E-09	--	4.1E-11	--	3.71E-09	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.01	--	0.00	0.01
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	1.2E-07	--	1.8E-08	--	1.39E-07	NA	--	--	--	--
			Benzo(a)pyrene	1.3E-06	--	1.9E-07	--	1.50E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	2.7E-07	--	3.9E-08	--	3.05E-07	NA	--	--	--	--
			Benzo(k)fluoranthene	1.6E-08	--	2.3E-09	--	1.79E-08	NA	--	--	--	--
			Carbazole	9.7E-09	--	1.4E-09	--	1.11E-08	NA	--	--	--	--
			Chrysene	1.6E-09	--	2.3E-10	--	1.78E-09	ImS	--	--	--	--
			Dibenz(a,h)anthracene	9.9E-07	--	1.4E-07	--	1.14E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1.3E-07	--	1.8E-08	--	1.44E-07	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Arsenic	4.9E-07	--	1.7E-08	--	5.09E-07	(o) Skin / CVS	0.04	--	0.00	0.04
			Cadmium	--	--	--	--	--	Kidney	0.05	--	0.00	0.05
			Chemical Total	3.3E-06	--	4.3E-07		3.77E-06		0.10	--	0.00	0.10
		Exposure Point Total						3.77E-06					0.10
	Exposure Medium Total							3.77E-06					0.10
	Air	Fugative Dust	1,4-Dichlorobenzene (p-)	--	4.5E-09	--	--	4.45E-09	(o) Lookup, (i) Liver	--	0.00	--	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.07	--	0.07
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	--	1.2E-10	--	--	1.16E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	6.6E-10	--	--	6.55E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	2.2E-10	--	--	2.19E-10	NA	--	--	--	--
			Benzo(k)fluoranthene	--	6.1E-12	--	--	6.14E-12	NA	--	--	--	--
			Carbazole	--	4.8E-11	--	--	4.78E-11	NA	--	--	--	--
			Chrysene	--	9.8E-12	--	--	9.79E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	2.1E-10	--	--	2.10E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2.8E-11	--	--	2.79E-11	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.03	--	0.03
			Arsenic	--	6.4E-11	--	--	6.43E-11	(o) Skin / CVS	--	--	--	--
			Cadmium	--	5.5E-11	--	--	5.48E-11	Kidney	--	--	--	--
			Chemical Total	--	5.9E-09	--		5.86E-09		--	0.09	--	0.09
		Exposure Point Total						5.86E-09					0.09
	Exposure Medium Total							5.86E-09					0.09
Surface Soil Total								**3.78E-06**					**0.19**

TABLE 9.6.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Subsurface Soil	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	2.2E-08	--	3.2E-09	--	2.54E-08	NA	--	--	--	--
			Benzo(a)pyrene	2.1E-07	--	3.0E-08	--	2.39E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	2.4E-08	--	3.5E-09	--	2.74E-08	NA	--	--	--	--
			Benzo(k)fluoranthene	2.2E-09	--	3.3E-10	--	2.57E-09	NA	--	--	--	--
			Carbazole	5.2E-10	--	7.6E-11	--	5.95E-10	NA	--	--	--	--
			Chrysene	2.5E-10	--	3.7E-11	--	2.90E-10	ImS	--	--	--	--
			Dibenz(a,h)anthracene	1.9E-07	--	2.8E-08	--	2.17E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	2.0E-08	--	2.9E-09	--	2.25E-08	NA	--	--	--	--
			Arsenic	1.2E-06	--	3.9E-08	--	1.20E-06	(o) Skin / CVS	0.09	--	0.00	0.09
			Chemical Total	1.6E-06	--	1.1E-07		1.74E-06		0.09	--	0.00	0.09
		Exposure Point Total						1.74E-06					0.09
	Exposure Medium Total							1.74E-06					0.09
	Air	Fugative Dust	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	--	2.1E-11	--	--	2.13E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	1.0E-10	--	--	1.04E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	2.0E-11	--	--	1.97E-11	NA	--	--	--	--
			Benzo(k)fluoranthene	--	8.8E-13	--	--	8.82E-13	NA	--	--	--	--
			Carbazole	--	2.6E-12	--	--	2.57E-12	NA	--	--	--	--
			Chrysene	--	1.6E-12	--	--	1.60E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	4.0E-11	--	--	4.00E-11	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	4.4E-12	--	--	4.37E-12	NA	--	--	--	--
			Arsenic	--	1.5E-10	--	--	1.52E-10	(o) Skin / CVS	--	--	--	--
			Chemical Total	--	3.5E-10	--		3.46E-10		--	--	--	--
		Exposure Point Total						3.46E-10					--
	Exposure Medium Total							3.46E-10					--
Subsurface Soil Total								**1.74E-06**					**0.09**

TABLE 9.6.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Deep Groundwater	Deep Groundwater	Tap	1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	0.25	--	0.01	0.26
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	0.01	--	0.00	0.01
			Benzene	8.1E-08	--	6.9E-09	--	8.82E-08	CVS	0.01	--	0.00	0.01
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Trichloroethene (TCE)	2.2E-05	--	2.1E-06	--	2.43E-05	(o) Kidney / Liver / Fetus, (i)	6.48	--	0.62	**7.10**
			Vinyl Chloride	9.7E-05	--	2.8E-06	--	9.98E-05	Liver	0.75	--	0.02	0.78
			Chemical Total	1.2E-04	--	4.9E-06		**1.24E-04**		7.51	--	0.66	**8.16**
		Exposure Point Total						**1.24E-04**					**8.16**
	Exposure Medium Total							**1.24E-04**					**8.16**
Deep Groundwater Total								**1.24E-04**					**8.16**
Young Child Residents Total								**1.30E-04**					**8.45**

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	3.8E-06
Total Risk Across Subsurface Soil	1.7E-06
Total Risk Across Groundwater	**1.2E-04**
Total Risk Across All Media and All Exposure Routes	**1.3E-04**

otal Hazard Index Across Surface Soil	0.19
Hazard Index Across Subsurface Soil	0.09
tal Hazard Index Across Groundwater	**8.16**
oss All Media and All Exposure Routes	**8.45**

All Exposure Routes:

Total Cardiovascular System HI =	0.01
Total Kidney HI =	0.05
Total Liver HI =	0.78

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	0.01
Oral / Dermal Cardiovascular System HI =	0.40
Oral / Dermal Skin HI =	0.13
Oral / Dermal Kidney HI =	7.10
Oral / Dermal Liver HI =	7.10
Oral / Dermal Fetus HI =	7.10

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	0.00E+00
Inhalation Endocrine System HI =	0.00E+00
Inhalation Respiratory System HI =	9.39E-02

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	1,4-Dichlorobenzene (p-)	2.0E-09	--	2.8E-11	--	2.04E-09	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.01	--	0.00	0.01
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	6.7E-08	--	1.2E-08	--	7.86E-08	NA	--	--	--	--
			Benzo(a)pyrene	7.2E-07	--	1.3E-07	--	8.49E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	1.5E-07	--	2.6E-08	--	1.72E-07	NA	--	--	--	--
			Benzo(k)fluoranthene	8.6E-09	--	1.5E-09	--	1.01E-08	NA	--	--	--	--
			Carbazole	5.3E-09	--	9.5E-10	--	6.26E-09	NA	--	--	--	--
			Chrysene	8.5E-10	--	1.5E-10	--	1.01E-09	ImS	--	--	--	--
			Dibenz(a,h)anthracene	5.5E-07	--	9.8E-08	--	6.44E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	6.9E-08	--	1.2E-08	--	8.14E-08	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Arsenic	2.7E-07	--	1.1E-08	--	2.82E-07	(o) Skin / CVS	0.04	--	0.00	0.04
			Cadmium	--	--	--	--	--	Kidney	0.05	--	0.00	0.05
			Chemical Total	1.8E-06	--	2.9E-07		2.13E-06		0.10	--	0.00	0.11
		Exposure Point Total						2.13E-06					0.11
	Exposure Medium Total							2.13E-06					0.11
	Air	Fugative Dust	1,4-Dichlorobenzene (p-)	--	7.9E-09	--	--	7.89E-09	(o) Lookup, (i) Liver	--	0.00	--	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.24	--	0.24
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	--	2.0E-09	--	--	2.04E-09	NA	--	--	--	--
			Benzo(a)pyrene	--	2.1E-08	--	--	2.10E-08	NA	--	--	--	--
			Benzo(b)fluoranthene	--	4.4E-09	--	--	4.41E-09	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2.5E-10	--	--	2.47E-10	NA	--	--	--	--
			Carbazole	--	2.3E-10	--	--	2.30E-10	NA	--	--	--	--
			Chrysene	--	4.1E-11	--	--	4.07E-11	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	1.5E-08	--	--	1.54E-08	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1.9E-09	--	--	1.95E-09	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.10	--	0.10
			Arsenic	--	7.5E-08	--	--	7.49E-08	(o) Skin / CVS	--	--	--	--
			Cadmium	--	6.4E-08	--	--	6.39E-08	Kidney	--	--	--	--
			Chemical Total	--	1.9E-07	--		1.92E-07		--	0.34	--	0.34
		Exposure Point Total						1.92E-07					0.34
	Exposure Medium Total							1.92E-07					0.34
Surface Soil Total								**2.32E-06**					**0.45**

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Subsurface Soil	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	1.2E-08	--	2.2E-09	--	1.44E-08	NA	--	--	--	--
			Benzo(a)pyrene	1.1E-07	--	2.0E-08	--	1.35E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	1.3E-08	--	2.3E-09	--	1.55E-08	NA	--	--	--	--
			Benzo(k)fluoranthene	1.2E-09	--	2.2E-10	--	1.46E-09	NA	--	--	--	--
			Carbazole	2.9E-10	--	5.1E-11	--	3.37E-10	NA	--	--	--	--
			Chrysene	1.4E-10	--	2.5E-11	--	1.64E-10	ImS	--	--	--	--
			Dibenz(a,h)anthracene	1.0E-07	--	1.9E-08	--	1.23E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1.1E-08	--	1.9E-09	--	1.27E-08	NA	--	--	--	--
			Arsenic	6.4E-07	--	2.6E-08	--	6.65E-07	(o) Skin / CVS	0.10	--	0.00	0.10
			Chemical Total	8.9E-07	--	7.2E-08		9.67E-07		0.10	--	0.00	0.10
		Exposure Point Total						9.67E-07					0.10
	Exposure Medium Total							9.67E-07					0.10
	Air	Fugative Dust	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	--	3.7E-10	--	--	3.73E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	3.3E-09	--	--	3.33E-09	NA	--	--	--	--
			Benzo(b)fluoranthene	--	4.0E-10	--	--	3.96E-10	NA	--	--	--	--
			Benzo(k)fluoranthene	--	3.6E-11	--	--	3.55E-11	NA	--	--	--	--
			Carbazole	--	1.2E-11	--	--	1.24E-11	NA	--	--	--	--
			Chrysene	--	6.6E-12	--	--	6.64E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	2.9E-09	--	--	2.94E-09	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	3.0E-10	--	--	3.05E-10	NA	--	--	--	--
			Arsenic	--	1.8E-07	--	--	1.77E-07	(o) Skin / CVS	--	--	--	--
			Chemical Total	--	1.8E-07	--		1.84E-07		--	--	--	--
		Exposure Point Total						1.84E-07					--
	Exposure Medium Total							1.84E-07					--
Subsurface Soil Total								**1.15E-06**					**0.10**

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	1,1-Dichloroethene	--	--	--	--	--	Liver	--	--	0.00	0.00
			1,2,3-Trichlorobenzene	--	--	--	--	--	(o) Kidney, (i) Liver	--	--	0.00	0.00
			1,2,4-Trimethylbenzene	--	--	--	--	--	Lookup	--	--	--	--
			1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	--	--	0.01	0.01
			1,2-Dichloroethene (total)	--	--	--	--	--	(o) Liver	--	--	0.01	0.01
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	--	--	0.00	0.00
			1,2-Dichloropropane	--	--	2.6E-10	--	2.58E-10	(i) RsS	--	--	0.00	0.00
			1,3,5-Trimethylbenzene	--	--	--	--	--	(o) Whole body / Kidney /	--	--	--	--
			1,4-Dichlorobenzene (p-)	--	--	3.8E-09	--	3.78E-09	(o) Lookup, (i) Liver	--	--	0.00	0.00
			2-Chlorotoluene	--	--	--	--	--	(o) Whole body	--	--	--	--
			4-Isopropyltoluene	--	--	--	--	--	NA	--	--	--	--
			Benzene	--	--	1.1E-08	--	1.14E-08	CVS	--	--	0.00	0.00
			Bromodichloromethane	--	--	1.2E-09	--	1.15E-09	(o) Kidney	--	--	0.00	0.00
			Bromoform	--	--	1.7E-10	--	1.65E-10	(o) Liver	--	--	0.00	0.00
			Chloroform	--	--	--	--	--	(o) Liver	--	--	0.00	0.00
			Ethylbenzene	--	--	--	--	--	(o) Liver / Kidney, (i) Whole	--	--	0.00	0.00
			Isopropylbenzene (Cumene)	--	--	--	--	--	Kidney	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	--	0.05	0.05
			n-Butylbenzene	--	--	--	--	--	NA	--	--	--	--
			Tetrachloroethene (PCE)	--	--	1.0E-07	--	9.96E-08	(o) Liver / Whole Body, (i)	--	--	0.00	0.00
			Toluene	--	--	--	--	--	(o) Kidney, (i) CNS / RsS	--	--	0.00	0.00
			Trichloroethene (TCE)	--	--	2.6E-06	--	2.63E-06	(o) Kidney / Liver / Fetus, (i)	--	--	1.53	**1.53**
			Vinyl Chloride	--	--	1.9E-07	--	1.86E-07	Liver	--	--	0.00	0.00
			Xylene, m/p-	--	--	--	--	--	(o) Whole body, (i) CNS	--	--	0.00	0.00
			Xylene, o-	--	--	--	--	--	(o) Whole body, (i) CNS	--	--	0.00	0.00
			Xylenes, total	--	--	--	--	--	(o) Whole body, (i) CNS	--	--	0.00	0.00
			1,1'-Biphenyl	--	--	--	--	--	(o) Kidney	--	--	--	--
			2,4-Dimethylphenol	--	--	--	--	--	(o) Whole Body / CVS	--	--	0.00	0.00
			2-Methylnaphthalene	--	--	--	--	--	(o) Lung	--	--	0.12	0.12
			2-Methylphenol (o-Cresol)	--	--	--	--	--	(o) Whole body / CVS	--	--	0.00	0.00
			4-Methylphenol (p-Cresol)	--	--	--	--	--	(o) CNS / RsS / Whole Body	--	--	0.00	0.00
			Acenaphthene	--	--	--	--	--	(o) Liver	--	--	0.01	0.01
			Bis(2-ethylhexyl) Phthalate (B	--	--	1.6E-08	--	1.61E-08	(o) Liver	--	--	0.00	0.00
			Carbazole	--	--	2.1E-08	--	2.08E-08	NA	--	--	--	--
			Dibenzofuran	--	--	--	--	--	(o) Lookup	--	--	0.09	0.09
			Fluorene	--	--	--	--	--	(o) CVS	--	--	0.01	0.01
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	--	0.05	0.05
			Chemical Total	--	--	3.0E-06		2.97E-06		--	--	1.89	**1.89**
		Exposure Point Total						2.97E-06					**1.89**
	Exposure Medium Total							2.97E-06					**1.89**
Groundwater Total								**2.97E-06**					**1.89**

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Construction Workers Total								**6.44E-06**					**2.44**

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	2.3E-06
Total Risk Across Subsurface Soil	1.2E-06
Total Risk Across Groundwater	3.0E-06
Total Risk Across All Media and All Exposure Routes	6.4E-06

otal Hazard Index Across Surface Soil	0.45
Hazard Index Across Subsurface Soil	0.10
tal Hazard Index Across Groundwater	1.89
oss All Media and All Exposure Routes	2.44

All Exposure Routes:

Total Cardiovascular System HI =	0.00
Total Kidney HI =	0.05
Total Liver HI =	0.00

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	0.11
Oral / Dermal Central Nervous System HI =	0.00
Oral / Dermal Cardiovascular System HI =	0.17
Oral / Dermal Skin HI =	0.15
Oral / Dermal Kidney HI =	1.54
Oral / Dermal Lung HI =	0.12
Oral / Dermal Liver HI =	1.56
Oral / Dermal Respiratory System HI =	0.00
Oral / Dermal Fetus HI =	1.53

Inhalation Exposure Routes:

Inhalation Whole Body HI =	0.00E+00
Inhalation Central Nervous System HI =	0.00E+00
Inhalation Endocrine System HI =	0.00E+00
Inhalation Kidney HI =	0.00E+00
Inhalation Liver HI =	1.09E-04
Inhalation Respiratory System HI =	3.38E-01
Inhalation Fetus HI =	0.00E+00

TABLE 9.7.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	1,4-Dichlorobenzene (p-)	8.8E-10	--	2.4E-12	--	8.85E-10	(o) Lookup, (i) Liver	0.00	--	0.00	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	2.9E-08	--	1.0E-09	--	3.02E-08	NA	--	--	--	--
			Benzo(a)pyrene	3.2E-07	--	1.1E-08	--	3.27E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	6.4E-08	--	2.3E-09	--	6.63E-08	NA	--	--	--	--
			Benzo(k)fluoranthene	3.8E-09	--	1.3E-10	--	3.90E-09	NA	--	--	--	--
			Carbazole	2.3E-09	--	8.3E-11	--	2.41E-09	NA	--	--	--	--
			Chrysene	3.7E-10	--	1.3E-11	--	3.87E-10	ImS	--	--	--	--
			Dibenz(a,h)anthracene	2.4E-07	--	8.6E-09	--	2.48E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	3.0E-08	--	1.1E-09	--	3.13E-08	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	0.00	--	0.00	0.00
			Arsenic	1.2E-07	--	9.8E-10	--	1.20E-07	(o) Skin / CVS	0.02	--	0.00	0.02
			Cadmium	--	--	--	--	--	Kidney	0.02	--	0.00	0.02
			Chemical Total	8.0E-07	--	2.5E-08		8.29E-07		0.05	--	0.00	0.05
		Exposure Point Total						8.29E-07					0.05
	Exposure Medium Total							8.29E-07					0.05
	Air	Fugative Dust	1,4-Dichlorobenzene (p-)	--	2.7E-09	--	--	2.72E-09	(o) Lookup, (i) Liver	--	0.00	--	0.00
			2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.08	--	0.08
			Acetophenone	--	--	--	--	--	(o) Whole Body	--	--	--	--
			Benzo(a)anthracene	--	7.0E-10	--	--	7.04E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	7.2E-09	--	--	7.23E-09	NA	--	--	--	--
			Benzo(b)fluoranthene	--	1.5E-09	--	--	1.52E-09	NA	--	--	--	--
			Benzo(k)fluoranthene	--	8.5E-11	--	--	8.53E-11	NA	--	--	--	--
			Carbazole	--	8.0E-11	--	--	7.95E-11	NA	--	--	--	--
			Chrysene	--	1.4E-11	--	--	1.40E-11	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	5.3E-09	--	--	5.31E-09	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	6.7E-10	--	--	6.73E-10	NA	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	0.03	--	0.03
			Arsenic	--	2.6E-08	--	--	2.58E-08	(o) Skin / CVS	--	--	--	--
			Cadmium	--	2.2E-08	--	--	2.21E-08	Kidney	--	--	--	--
			Chemical Total	--	6.6E-08	--		6.62E-08		--	0.12	--	0.12
		Exposure Point Total						6.62E-08					0.12
	Exposure Medium Total							6.62E-08					0.12
Surface Soil Total								**8.96E-07**					**0.16**

TABLE 9.7.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Subsurface Soil	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	5.3E-09	--	1.9E-10	--	5.54E-09	NA	--	--	--	--
			Benzo(a)pyrene	5.0E-08	--	1.8E-09	--	5.19E-08	NA	--	--	--	--
			Benzo(b)fluoranthene	5.7E-09	--	2.1E-10	--	5.95E-09	NA	--	--	--	--
			Benzo(k)fluoranthene	5.4E-10	--	1.9E-11	--	5.60E-10	NA	--	--	--	--
			Carbazole	1.3E-10	--	4.5E-12	--	1.30E-10	NA	--	--	--	--
			Chrysene	6.1E-11	--	2.2E-12	--	6.31E-11	ImS	--	--	--	--
			Dibenz(a,h)anthracene	4.6E-08	--	1.6E-09	--	4.72E-08	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4.7E-09	--	1.7E-10	--	4.90E-09	NA	--	--	--	--
			Arsenic	2.8E-07	--	2.3E-09	--	2.82E-07	(o) Skin / CVS	0.04	--	0.00	0.04
			Chemical Total	3.9E-07	--	6.3E-09		3.98E-07		0.04	--	0.00	0.04
		Exposure Point Total						3.98E-07					0.04
	Exposure Medium Total							3.98E-07					0.04
	Air	Fugative Dust	2-Hexanone (MBK)	--	--	--	--	--	NA	--	--	--	--
			Benzo(a)anthracene	--	1.3E-10	--	--	1.29E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	1.1E-09	--	--	1.15E-09	NA	--	--	--	--
			Benzo(b)fluoranthene	--	1.4E-10	--	--	1.37E-10	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1.2E-11	--	--	1.23E-11	NA	--	--	--	--
			Carbazole	--	4.3E-12	--	--	4.27E-12	NA	--	--	--	--
			Chrysene	--	2.3E-12	--	--	2.29E-12	ImS	--	--	--	--
			Dibenz(a,h)anthracene	--	1.0E-09	--	--	1.01E-09	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1.1E-10	--	--	1.05E-10	NA	--	--	--	--
			Arsenic	--	6.1E-08	--	--	6.09E-08	(o) Skin / CVS	--	--	--	--
			Chemical Total	--	6.3E-08	--		6.35E-08		--	--	--	--
		Exposure Point Total						6.35E-08					--
	Exposure Medium Total							6.35E-08					--
Subsurface Soil Total								**4.62E-07**					**0.04**

TABLE 9.7.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	1,1-Dichloroethene	--	--	--	--	--	Liver	--	--	0.00	0.00
			1,2,3-Trichlorobenzene	--	--	--	--	--	(o) Kidney, (i) Liver	--	--	0.00	0.00
			1,2,4-Trimethylbenzene	--	--	--	--	--	Lookup	--	--	--	--
			1,2-Dichloroethene (cis)	--	--	--	--	--	(o) CVS	--	--	0.01	0.01
			1,2-Dichloroethene (total)	--	--	--	--	--	(o) Liver	--	--	0.01	0.01
			1,2-Dichloroethene (trans)	--	--	--	--	--	(o) CVS, (i) Lookup	--	--	0.00	0.00
			1,2-Dichloropropane	--	--	2.3E-10	--	2.26E-10	(i) RsS	--	--	0.00	0.00
			1,3,5-Trimethylbenzene	--	--	--	--	--	(o) Whole body / Kidney /	--	--	--	--
			1,4-Dichlorobenzene (p-)	--	--	3.3E-09	--	3.31E-09	(o) Lookup, (i) Liver	--	--	0.00	0.00
			2-Chlorotoluene	--	--	--	--	--	(o) Whole body	--	--	--	--
			4-Isopropyltoluene	--	--	--	--	--	NA	--	--	--	--
			Benzene	--	--	1.0E-08	--	9.98E-09	CVS	--	--	0.00	0.00
			Bromodichloromethane	--	--	1.0E-09	--	1.01E-09	(o) Kidney	--	--	0.00	0.00
			Bromoform	--	--	1.4E-10	--	1.45E-10	(o) Liver	--	--	0.00	0.00
			Chloroform	--	--	--	--	--	(o) Liver	--	--	0.00	0.00
			Ethylbenzene	--	--	--	--	--	(o) Liver / Kidney, (i) Whole	--	--	0.00	0.00
			Isopropylbenzene (Cumene)	--	--	--	--	--	Kidney	--	--	--	--
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	--	0.04	0.04
			n-Butylbenzene	--	--	--	--	--	NA	--	--	--	--
			Tetrachloroethene (PCE)	--	--	8.7E-08	--	8.72E-08	(o) Liver / Whole Body, (i)	--	--	0.00	0.00
			Toluene	--	--	--	--	--	(o) Kidney, (i) CNS / RsS	--	--	0.00	0.00
			Trichloroethene (TCE)	--	--	2.3E-06	--	2.30E-06	(o) Kidney / Liver / Fetus, (i)	--	--	1.34	**1.34**
			Vinyl Chloride	--	--	1.6E-07	--	1.63E-07	Liver	--	--	0.00	0.00
			Xylene, m/p-	--	--	--	--	--	(o) Whole body, (i) CNS	--	--	0.00	0.00
			Xylene, o-	--	--	--	--	--	(o) Whole body, (i) CNS	--	--	0.00	0.00
			Xylenes, total	--	--	--	--	--	(o) Whole body, (i) CNS	--	--	0.00	0.00
			1,1'-Biphenyl	--	--	--	--	--	(o) Kidney	--	--	--	--
			2,4-Dimethylphenol	--	--	--	--	--	(o) Whole Body / CVS	--	--	0.00	0.00
			2-Methylnaphthalene	--	--	--	--	--	(o) Lung	--	--	0.10	0.10
			2-Methylphenol (o-Cresol)	--	--	--	--	--	(o) Whole body / CVS	--	--	0.00	0.00
			4-Methylphenol (p-Cresol)	--	--	--	--	--	(o) CNS / RsS / Whole Body	--	--	0.00	0.00
			Acenaphthene	--	--	--	--	--	(o) Liver	--	--	0.01	0.01
			Bis(2-ethylhexyl) Phthalate (B	--	--	1.4E-08	--	1.41E-08	(o) Liver	--	--	0.00	0.00
			Carbazole	--	--	1.8E-08	--	1.82E-08	NA	--	--	--	--
			Dibenzofuran	--	--	--	--	--	(o) Lookup	--	--	0.08	0.08
			Fluorene	--	--	--	--	--	(o) CVS	--	--	0.00	0.00
			Naphthalene	--	--	--	--	--	(o) Whole Body, (i) RsS	--	--	0.04	0.04
			Chemical Total	--	--	2.6E-06		2.60E-06		--	--	1.65	**1.65**
		Exposure Point Total						2.60E-06					**1.65**
	Exposure Medium Total							2.60E-06					**1.65**
Groundwater Total								**2.60E-06**					**1.65**

TABLE 9.7.CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Construction Workers Total								**3.96E-06**					**1.86**

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	9.0E-07
Total Risk Across Subsurface Soil	4.6E-07
Total Risk Across Groundwater	2.6E-06
Total Risk Across All Media and All Exposure Routes	4.0E-06

otal Hazard Index Across Surface Soil	0.16
Hazard Index Across Subsurface Soil	0.04
tal Hazard Index Across Groundwater	1.65
oss All Media and All Exposure Routes	1.86

All Exposure Routes:

Total Cardiovascular System HI =	0.00
Total Kidney HI =	0.02
Total Liver HI =	0.00

Inhalation Exposure Routes:

Inhalation Whole Body HI =	0.00E+00
Inhalation Central Nervous System HI =	0.00E+00
Inhalation Endocrine System HI =	0.00E+00
Inhalation Kidney HI =	0.00E+00
Inhalation Liver HI =	3.77E-05
Inhalation Respiratory System HI =	1.17E-01
Inhalation Fetus HI =	0.00E+00

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	0.09
Oral / Dermal Central Nervous System HI =	0.00
Oral / Dermal Cardiovascular System HI =	0.08
Oral / Dermal Skin HI =	0.06
Oral / Dermal Kidney HI =	1.35
Oral / Dermal Lung HI =	0.10
Oral / Dermal Liver HI =	1.37
Oral / Dermal Respiratory System HI =	0.00
Oral / Dermal Fetus HI =	1.34

TABLE 10.1.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Shallow Groundwater	Shallow Groundwater	Tap	1,2-Dichloroethene (cis)						(o) CVS	0.33	--	0.03	0.36
			1,2-Dichloroethene (total)						(o) Liver	0.48	--	0.04	0.52
			Naphthalene						(o) Whole Body, (i) RsS	0.23	--	0.15	0.38
			Trichloroethene (TCE)	1.2E-03	--	2.1E-04	--	**1.40E-03**	(o) Kidney / Liver / Fetus, (i)	29.02	--	5.02	**34.04**
			Vinyl Chloride	2.2E-04	--	1.2E-05	--	**2.32E-04**	Liver	0.14	--	0.01	0.15
			2,4-Dimethylphenol						(o) Whole Body / CVS	0.09	--	0.01	0.10
			2-Methylnaphthalene						(o) Lung	0.31	--	0.39	0.70
			4-Methylphenol (p-Cresol)						(o) CNS / RsS / Whole Body	0.10	--	0.01	0.11
			Dibenzofuran						(o) Lookup	0.18	--	0.31	0.49
			Naphthalene						(o) Whole Body, (i) RsS	0.23	--	0.15	0.38
			Chemical Total	1.4E-03	--	2.2E-04		**1.63E-03**		31.10	--	6.12	**37.22**
		Exposure Point Total						**1.63E-03**					**37.22**
	Exposure Medium Total							**1.63E-03**					**37.22**
	Air	Water Vapors	1,2-Dichloroethene (cis)						(o) CVS	--	0.33	--	0.33
			1,2-Dichloroethene (total)						(o) Liver	--	0.48	--	0.48
			Naphthalene						(o) Whole Body, (i) RsS	--	0.23	--	0.23
			Trichloroethene (TCE)	--	1.2E-03	--	--	**1.19E-03**	(o) Kidney / Liver / Fetus, (i) CNS / Liver / Endocrine	--	29.02	--	**29.02**
			Vinyl Chloride	--	2.2E-04	--	--	**2.20E-04**	Liver	--	0.14	--	0.14
			Chemical Total	--	1.4E-03	--		**1.41E-03**		--	30.19	--	**30.19**
		Exposure Point Total						**1.41E-03**					**30.19**
	Exposure Medium Total							**1.41E-03**					**30.19**
Shallow Groundwater Total								**3.05E-03**					**67.42**
Adult Residents Total								**3.05E-03**					**67.42**

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Groundwater	3.0E-03
Total Risk Across All Media and All Exposure Routes	3.0E-03

All Exposure Routes:

Total Liver HI =	0.29

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	29.0
Inhalation Endocrine System HI =	29.0
Inhalation Liver HI =	29.0
Inhalation Respiratory System HI =	0.23

al Hazard Index Across Groundwater	67.42
ıss All Media and All Exposure Routes	67.42

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	0.96
Oral / Dermal Central Nervous System HI =	0.11
Oral / Dermal Cardiovascular System HI =	0.46
Oral / Dermal Kidney HI =	34.0
Oral / Dermal Lung HI =	0.70
Oral / Dermal Liver HI =	34.6
Oral / Dermal Respiratory System HI =	0.11
Oral / Dermal Fetus HI =	34.0

TABLE 10.1.CT
RISK ASSESSMENT SUMMARY
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Shallow Groundwater	Shallow Groundwater	Tap	1,2-Dichloroethene (cis)						(o) CVS	0.15	--	0.01	0.17
			1,2-Dichloroethene (total)						(o) Liver	0.22	--	0.02	0.24
			Naphthalene						(o) Whole Body, (i) RsS	0.11	--	0.07	0.17
			Trichloroethene (TCE)	1.6E-04	--	2.6E-05	--	**1.89E-04**	(o) Kidney / Liver / Fetus, (i)	13.58	--	2.21	**15.79**
			Vinyl Chloride	3.0E-05	--	1.5E-06	--	3.15E-05	Liver	0.07	--	0.00	0.07
			2,4-Dimethylphenol						(o) Whole Body / CVS	0.04	--	0.01	0.05
			2-Methylnaphthalene						(o) Lung	0.15	--	0.17	0.32
			4-Methylphenol (p-Cresol)						(o) CNS / RsS / Whole Body	0.05	--	0.00	0.05
			Dibenzofuran						(o) Lookup	0.08	--	0.14	0.22
			Naphthalene						(o) Whole Body, (i) RsS	0.11	--	0.07	0.17
			Chemical Total	1.9E-04	--	2.8E-05		**2.21E-04**		14.55	--	2.69	**17.24**
		Exposure Point Total						**2.21E-04**					**17.24**
	Exposure Medium Total							**2.21E-04**					**17.24**
	Air	Water Vapors	1,2-Dichloroethene (cis)						(o) CVS	--	0.15	--	0.15
			1,2-Dichloroethene (total)						(o) Liver	--	0.22	--	0.22
			Naphthalene						(o) Whole Body, (i) RsS	--	0.11	--	0.11
			Trichloroethene (TCE)	--	1.6E-04	--	--	**1.63E-04**	(o) Kidney / Liver / Fetus, (i) CNS / Liver / Endocrine	--	13.58	--	**13.58**
			Vinyl Chloride	--	3.0E-05	--	--	3.01E-05	Liver	--	0.07	--	0.07
			Chemical Total	--	1.9E-04	--		**1.93E-04**		--	14.13	--	**14.13**
		Exposure Point Total						**1.93E-04**					**14.13**
	Exposure Medium Total							**1.93E-04**					**14.13**
Shallow Groundwater Total								**4.14E-04**					31.37
Adult Residents Total								**4.14E-04**					31.37

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Groundwater	4.1E-04
Total Risk Across All Media and All Exposure Routes	4.1E-04

All Exposure Routes:

Total Liver HI =	0.14

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	13.6
Inhalation Endocrine System HI =	13.6
Inhalation Liver HI =	13.6
Inhalation Respiratory System HI =	0.11

al Hazard Index Across Groundwater	31.37
ıss All Media and All Exposure Routes	31.37

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	0.44
Oral / Dermal Central Nervous System HI =	0.05
Oral / Dermal Cardiovascular System HI =	0.21
Oral / Dermal Kidney HI =	15.8
Oral / Dermal Lung HI =	0.32
Oral / Dermal Liver HI =	16.0
Oral / Dermal Respiratory System HI =	0.05
Oral / Dermal Fetus HI =	15.8

TABLE 10.2.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	Benzo(a)pyrene	1.2E-05	--	4.3E-06	--	1.60E-05					
			Dibenz(a,h)anthracene	8.9E-06	--	3.2E-06	--	1.22E-05					
			Naphthalene						(o) Skin / CVS	0.11	--	0.01	0.12
			Acetophenone						Kidney	0.14	--	0.01	0.15
			Chemical Total	2.1E-05	--	7.5E-06		2.82E-05		0.25	--	0.02	0.27
		Exposure Point Total						2.82E-05					0.27
	Exposure Medium Total							2.82E-05					0.27
Surface Soil Total								**2.82E-05**					**0.27**
Subsurface Soil	Subsurface Soil	Subsurface Soil	Arsenic	1.0E-05	--	8.8E-07	--	1.13E-05	(o) Skin / CVS	0.27	--	0.02	0.29
			Chemical Total	1.0E-05	--	8.8E-07		1.13E-05		0.27	--	0.02	0.29
		Exposure Point Total						1.13E-05					0.29
	Exposure Medium Total							1.13E-05					0.29
Subsurface Soil Total								**1.13E-05**					**0.29**

TABLE 10.2.RME (Continued)
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Shallow Groundwater	Shallow Groundwater	Tap	1,2-Dichloroethene (cis)						(o) CVS	0.77	--	0.07	0.84
			1,2-Dichloroethene (total)						(o) Liver	1.12	--	0.10	**1.22**
			Benzene						CVS	0.16	--	0.02	0.18
			Naphthalene						(o) Whole Body, (i) RsS	0.53	--	0.34	0.87
			Tetrachloroethene (PCE)	7.8E-06	--	4.5E-06	--	1.23E-05					
			Trichloroethene (TCE)	7.0E-04	--	1.2E-04	--	**8.13E-04**	(o) Kidney / Liver / Fetus, (i) CNS / Liver / Endocrine	67.71	--	11.29	**79**
			Vinyl Chloride	1.3E-04	--	7.0E-06	--	**1.36E-04**	Liver	0.33	--	0.02	0.35
			2,4-Dimethylphenol						(o) Whole Body / CVS	0.20	--	0.03	0.23
			2-Methylnaphthalene						(o) Lung	0.73	--	0.87	**1.60**
			4-Methylphenol (p-Cresol)						(o) CNS / RsS / Whole Body	0.23	--	0.02	0.25
			Dibenzofuran						(o) Lookup	0.42	--	0.70	**1.12**
			Naphthalene						(o) Whole Body, (i) RsS	0.53	--	0.34	0.87
			Chemical Total	8.3E-04	--	1.3E-04		9.60E-04		72.72	--	13.79	86.51
		Exposure Point Total						9.60E-04					86.51
	Exposure Medium Total							9.60E-04					86.51
Shallow Groundwater Total								**9.60E-04**					**86.5**
Young Child Residents Total								**1.00E-03**					**87.1**

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	2.8E-05
Total Risk Across Subsurface Soil	1.1E-05
Total Risk Across Groundwater	**9.6E-04**
Total Risk Across All Media and All Exposure Routes	**1.0E-03**

l Hazard Index Across Surface Soil	0.27
azard Index Across Subsurface Soil	0.29
Hazard Index Across Groundwater	**86.5**
All Media and All Exposure Routes	**87.1**

All Exposure Routes:

Total Cardiovascular System HI =	0.18
Total Kidney HI =	0.15
Total Liver HI =	0.35

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	0.00E+00
Inhalation Endocrine System HI =	0.00E+00
Inhalation Liver HI =	0.00E+00
Inhalation Respiratory System HI =	0.00E+00

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	2.22
Oral / Dermal Central Nervous System HI =	0.25
Oral / Dermal Cardiovascular System HI =	1.49
Oral / Dermal Skin HI =	0.42
Oral / Dermal Kidney HI =	79.0
Oral / Dermal Lung HI =	1.60
Oral / Dermal Liver HI =	80.2
Oral / Dermal Respiratory System HI =	0.25
Oral / Dermal Fetus HI =	79.0

TABLE 10.2.CT
RISK ASSESSMENT SUMMARY
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	Benzo(a)pyrene	1.3E-06	--	1.9E-07	--	1.50E-06					
			Dibenz(a,h)anthracene	9.9E-07	--	1.4E-07	--	1.14E-06					
			Naphthalene						(o) Skin / CVS	0.04	--	0.00	0.04
			Acetophenone						Kidney	0.05	--	0.00	0.05
			Chemical Total	2.3E-06	--	3.4E-07		2.64E-06		0.09	--	0.00	0.09
		Exposure Point Total						2.64E-06					0.09
	Exposure Medium Total							2.64E-06					0.09
Surface Soil Total								**2.64E-06**					**0.09**
Subsurface Soil	Subsurface Soil	Subsurface Soil	Arsenic	1.2E-06	--	3.9E-08	--	1.20E-06	(o) Skin / CVS	0.09	--	0.00	0.09
			Chemical Total	1.2E-06	--	3.9E-08		1.20E-06		0.09	--	0.00	0.09
		Exposure Point Total						1.20E-06					0.09
	Exposure Medium Total							1.20E-06					0.09
Subsurface Soil Total								**1.20E-06**					**0.09**

TABLE 10.2.CT (Continued)
RISK ASSESSMENT SUMMARY
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Shallow Groundwater	Shallow Groundwater	Tap	1,2-Dichloroethene (cis)						(o) CVS	0.51	--	0.03	0.54
			1,2-Dichloroethene (total)						(o) Liver	0.75	--	0.04	0.78
			Benzene						CVS	0.10	--	0.01	0.11
			Naphthalene						(o) Whole Body, (i) RsS	0.35	--	0.13	0.48
			Tetrachloroethene (PCE)	1.7E-06	--	5.7E-07	--	2.31E-06					
			Trichloroethene (TCE)	1.6E-04	--	1.5E-05	--	**1.70E-04**	(o) Kidney / Liver / Fetus, (i) CNS / Liver / Endocrine	45.27	--	4.34	**50**
			Vinyl Chloride	2.9E-05	--	8.2E-07	--	2.95E-05	Liver	0.22	--	0.01	0.23
			2,4-Dimethylphenol						(o) Whole Body / CVS	0.14	--	0.01	0.15
			2-Methylnaphthalene						(o) Lung	0.49	--	0.33	0.82
			4-Methylphenol (p-Cresol)						(o) CNS / RsS / Whole Body	0.15	--	0.01	0.16
			Dibenzofuran						(o) Lookup	0.28	--	0.27	0.55
			Naphthalene						(o) Whole Body, (i) RsS	0.35	--	0.13	0.48
			Chemical Total	1.9E-04	--	1.6E-05		2.02E-04		48.62	--	5.29	53.91
		Exposure Point Total						2.02E-04					53.91
	Exposure Medium Total							2.02E-04					53.91
Shallow Groundwater Total								**2.02E-04**					**53.9**
Young Child Residents Total								**2.06E-04**					**54.1**

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	2.6E-06
Total Risk Across Subsurface Soil	1.2E-06
Total Risk Across Groundwater	**2.0E-04**
Total Risk Across All Media and All Exposure Routes	2.1E-04

l Hazard Index Across Surface Soil	0.09
azard Index Across Subsurface Soil	0.09
Hazard Index Across Groundwater	**53.9**
All Media and All Exposure Routes	**54.1**

All Exposure Routes:

Total Cardiovascular System HI =	0.11
Total Kidney HI =	0.05
Total Liver HI =	0.23

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	0.00E+00
Inhalation Endocrine System HI =	0.00E+00
Inhalation Liver HI =	0.00E+00
Inhalation Respiratory System HI =	0.00E+00

Oral and Dermal Exposure Routes:

Oral / Dermal Whole Body HI =	1.28
Oral / Dermal Central Nervous System HI =	0.16
Oral / Dermal Cardiovascular System HI =	0.82
Oral / Dermal Skin HI =	0.13
Oral / Dermal Kidney HI =	49.6
Oral / Dermal Lung HI =	0.82
Oral / Dermal Liver HI =	50.4
Oral / Dermal Respiratory System HI =	0.16
Oral / Dermal Fetus HI =	49.6

TABLE 10.3.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Deep Groundwater	Deep Groundwater	Tap	1,2-Dichloroethene (cis)						(o) CVS	0.16	--	0.01	0.17
			Trichloroethene (TCE)	1.7E-04	--	3.0E-05	--	**2.00E-04**	(o) Kidney / Liver / Fetus,	4.15	--	0.72	**4.87**
			Vinyl Chloride	7.5E-04	--	4.0E-05	--	**7.86E-04**	Liver	0.48	--	0.03	0.51
			Chemical Total	9.2E-04	--	6.9E-05		**9.87E-04**		4.80	--	0.76	**5.56**
		Exposure Point Total						**9.87E-04**					**5.56**
	Exposure Medium Total							**9.87E-04**					**5.56**
	Air	Water Vapors from Showerhead	1,2-Dichloroethene (cis)						(o) CVS	--	0.16	--	0.16
			Trichloroethene (TCE)	--	1.7E-04	--	--	**1.71E-04**	(o) Kidney / Liver / Fetus, (i) CNS / Liver / Endocrine	--	4.15	--	**4.15**
			Vinyl Chloride	--	7.5E-04	--	--	**7.46E-04**	Liver	--	0.48	--	0.48
			Chemical Total	--	9.2E-04	--		**9.17E-04**		--	4.80	--	**4.80**
		Exposure Point Total						**9.17E-04**					**4.80**
	Exposure Medium Total							**9.17E-04**					**4.80**
Deep Groundwater Total								**1.90E-03**					**10.35**
Adult Residents Total								**1.90E-03**					**10.35**

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Groundwater	1.9E-03
Total Risk Across All Media and All Exposure Routes	1.9E-03
All Exposure Routes:	
Total Liver HI =	0.99
Inhalation Exposure Routes:	
Inhalation Central Nervous System HI =	4.15
Inhalation Endocrine System HI =	4.15
Inhalation Liver HI =	4.15

al Hazard Index Across Groundwater	10.35
ss All Media and All Exposure Routes	10.35
Oral and Dermal Exposure Routes:	
Oral / Dermal Cardiovascular System HI =	0.17
Oral / Dermal Kidney HI =	4.87
Oral / Dermal Liver HI =	4.87
Oral / Dermal Fetus HI =	4.87

TABLE 10.3.CT
RISK ASSESSMENT SUMMARY
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Deep Groundwater	Deep Groundwater	Tap	1,2-Dichloroethene (cis)						(o) CVS	0.07	--	0.01	0.08
			Trichloroethene (TCE)	2.3E-05	--	3.8E-06	--	2.71E-05	(o) Kidney / Liver / Fetus,	1.94	--	0.32	**2.26**
			Vinyl Chloride	1.0E-04	--	5.0E-06	--	**1.07E-04**	Liver	0.23	--	0.01	0.24
			Chemical Total	1.3E-04	--	8.8E-06		**1.34E-04**		2.24	--	0.33	**2.58**
		Exposure Point Total						**1.34E-04**					**2.58**
	Exposure Medium Total							**1.34E-04**					**2.58**
	Air	Water Vapors from Showerhead	1,2-Dichloroethene (cis)						(o) CVS	--	0.07	--	0.07
			Trichloroethene (TCE)	--	2.3E-05	--	--	2.33E-05	(o) Kidney / Liver / Fetus, (i) CNS / Liver / Endocrine	--	1.94	--	**1.94**
			Vinyl Chloride	--	1.0E-04	--	--	**1.02E-04**	Liver	--	0.23	--	0.23
			Chemical Total	--	1.3E-04	--		**1.25E-04**		--	2.24	--	**2.24**
		Exposure Point Total						**1.25E-04**					**2.24**
	Exposure Medium Total							**1.25E-04**					**2.24**
Deep Groundwater Total								**2.59E-04**					4.82
Adult Residents Total								**2.59E-04**					4.82

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Groundwater	**2.6E-04**
Total Risk Across All Media and All Exposure Routes	**2.6E-04**

All Exposure Routes:

Total Liver HI =	0.46

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	1.94
Inhalation Endocrine System HI =	1.94
Inhalation Liver HI =	1.94

al Hazard Index Across Groundwater	**4.82**
ss All Media and All Exposure Routes	4.82

Oral and Dermal Exposure Routes:

Oral / Dermal Cardiovascular System HI =	0.08
Oral / Dermal Kidney HI =	2.26
Oral / Dermal Liver HI =	2.26
Oral / Dermal Fetus HI =	2.26

TABLE 10.4.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	Benzo(a)pyrene	1.2E-05	--	4.3E-06	--	1.60E-05					
			Dibenz(a,h)anthracene	8.9E-06	--	3.2E-06	--	1.22E-05					
			Arsenic						(o) Skin / CVS	0.11	--	0.01	0.12
			Cadmium						Kidney	0.14	--	0.01	0.15
			Chemical Total	2.1E-05	--	7.5E-06		2.82E-05		0.25	--	0.02	0.27
		Exposure Point Total						2.82E-05					0.27
	Exposure Medium Total							2.82E-05					0.27
Surface Soil Total								**2.82E-05**					**0.27**
Subsurface Soil	Subsurface Soil	Subsurface Soil	Arsenic	1.0E-05	--	8.8E-07	--	1.13E-05	(o) Skin / CVS	0.27	--	0.02	0.29
			Chemical Total	1.0E-05	--	8.8E-07		1.13E-05		0.27	--	0.02	0.29
		Exposure Point Total						1.13E-05					0.29
	Exposure Medium Total							1.13E-05					0.29
Subsurface Soil Total								**1.13E-05**					**0.29**
Deep Groundwater	Deep Groundwater	Tap	1,2-Dichloroethene (cis)						(o) CVS	0.37	--	0.03	0.41
			Trichloroethene (TCE)	1.0E-04	--	1.7E-05	--	**1.16E-04**	(o) Kidney / Liver / Fetus, (i) CNS / Liver / Endocrine	9.69	--	1.62	11.31
			Vinyl Chloride	4.4E-04	--	2.4E-05	--	**4.59E-04**	Liver	1.13	--	0.06	1.19
			Chemical Total	5.3E-04	--	4.0E-05		**5.75E-04**		11.19	--	1.71	**12.90**
		Exposure Point Total						**5.75E-04**					**12.90**
	Exposure Medium Total							**5.75E-04**					**12.90**
Deep Groundwater Total								**5.75E-04**					**12.90**
Young Child Residents Total								**6.15E-04**					**13.47**

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	2.8E-05
Total Risk Across Subsurface Soil	1.1E-05
Total Risk Across Groundwater	**5.8E-04**
Total Risk Across All Media and All Exposure Routes	**6.1E-04**

ıtal Hazard Index Across Surface Soil	0.27
Hazard Index Across Subsurface Soil	0.29
al Hazard Index Across Groundwater	**12.90**
ıss All Media and All Exposure Routes	**13.47**

All Exposure Routes:

Total Kidney HI =	0.15
Total Liver HI =	**1.19**

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	0.00E+00
Inhalation Endocrine System HI =	0.00E+00
Inhalation Liver HI =	0.00E+00

Oral and Dermal Exposure Routes:

Oral / Dermal Cardiovascular System HI =	0.82
Oral / Dermal Skin HI =	0.42
Oral / Dermal Kidney HI =	**11.31**
Oral / Dermal Liver HI =	**11.31**
Oral / Dermal Fetus HI =	**11.31**

TABLE 10.4.CT
RISK ASSESSMENT SUMMARY
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Young Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	Benzo(a)pyrene	1.3E-06	--	1.9E-07	--	1.50E-06					
			Dibenz(a,h)anthracene	9.9E-07	--	1.4E-07	--	1.14E-06					
			Arsenic						(o) Skin / CVS	0.04	--	0.00	0.04
			Cadmium						Kidney	0.05	--	0.00	0.05
			Chemical Total	2.3E-06	--	3.4E-07		2.64E-06		0.09	--	0.00	0.09
		Exposure Point Total						2.64E-06					0.09
	Exposure Medium Total							2.64E-06					0.09
Surface Soil Total								**2.64E-06**					**0.09**
Subsurface Soil	Subsurface Soil	Subsurface Soil	Arsenic	1.2E-06	--	3.9E-08	--	1.20E-06	(o) Skin / CVS	0.09	--	0.00	0.09
			Chemical Total	1.2E-06	--	3.9E-08		1.20E-06		0.09	--	0.00	0.09
		Exposure Point Total						1.20E-06					0.09
	Exposure Medium Total							1.20E-06					0.09
Subsurface Soil Total								**1.20E-06**					**0.09**
Deep Groundwater	Deep Groundwater	Tap	1,2-Dichloroethene (cis)						(o) CVS	0.25	--	0.01	0.26
			Trichloroethene (TCE)	2.2E-05	--	2.1E-06	--	2.43E-05	(o) Kidney / Liver / Fetus, (i) CNS / Liver / Endocrine	6.48	--	0.62	7.10
			Vinyl Chloride	9.7E-05	--	2.8E-06	--	9.98E-05	Liver	0.75	--	0.02	0.78
			Chemical Total	1.2E-04	--	4.9E-06		**1.24E-04**		7.48	--	0.65	**8.14**
		Exposure Point Total						**1.24E-04**					**8.14**
	Exposure Medium Total							**1.24E-04**					**8.14**
Deep Groundwater Total								**1.24E-04**					**8.14**
Young Child Residents Total								**1.28E-04**					**8.32**

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Surface Soil	2.6E-06
Total Risk Across Subsurface Soil	1.2E-06
Total Risk Across Groundwater	**1.2E-04**
Total Risk Across All Media and All Exposure Routes	**1.3E-04**

tal Hazard Index Across Surface Soil	0.09
Hazard Index Across Subsurface Soil	0.09
al Hazard Index Across Groundwater	**8.14**
ss All Media and All Exposure Routes	**8.32**

All Exposure Routes:

Total Kidney HI =	0.05
Total Liver HI =	0.78

Oral and Dermal Exposure Routes:

Oral / Dermal Cardiovascular System HI =	0.39
Oral / Dermal Skin HI =	0.13
Oral / Dermal Kidney HI =	7.10
Oral / Dermal Liver HI =	7.10
Oral / Dermal Fetus HI =	7.10

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	0.00E+00
Inhalation Endocrine System HI =	0.00E+00
Inhalation Liver HI =	0.00E+00

TABLE 10.5.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Shallow Groundwater	Shallow Groundwater	Tap	Trichloroethene (TCE)						(o) Kidney / Liver / Fetus, (i) CNS / Liver / Endocrine	--	--	1.53	**1.53**
			2-Methylnaphthalene						(o) Lung	--	--	0.12	0.12
			Chemical Total							--	--	1.65	**1.65**
		Exposure Point Total											**1.65**
	Exposure Medium Total												**1.65**
Shallow Groundwater Total													1.65
Construction Workers Total													1.65

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Groundwater	
Total Risk Across All Media and All Exposure Routes	

tal Hazard Index Across Groundwater	1.65
oss All Media and All Exposure Routes	1.65

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	0.00E+00
Inhalation Endocrine System HI =	0.00E+00
Inhalation Liver HI =	0.00E+00

Oral and Dermal Exposure Routes:

Oral / Dermal Kidney HI =	1.53
Oral / Dermal Lung HI =	0.12
Oral / Dermal Liver HI =	1.53
Oral / Dermal Fetus HI =	1.53

TABLE 10.5.CT
RISK ASSESSMENT SUMMARY
CENTRAL TENDENCY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091)
MCB CAMP LEJEUNE, NORTH CAROLINA

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Shallow Groundwater	Shallow Groundwater	Tap	Trichloroethene (TCE)						(o) Kidney / Liver / Fetus, (i) CNS / Liver / Endocrine	--	--	1.34	**1.34**
			2-Methylnaphthalene						(o) Lung	--	--	0.10	0.10
			Chemical Total							--	--	1.45	**1.45**
		Exposure Point Total											**1.45**
	Exposure Medium Total												**1.45**
Shallow Groundwater Total													1.45
Construction Workers Total													1.45

Notes:
Target Organ Abbreviations:
CNS = Central Nervous System
CVS = Cardiovascular System
RsS = Respiratory System

(o) Oral exposure
(i) Inhalation exposure

Total Risk Across Groundwater	
Total Risk Across All Media and All Exposure Routes	

Inhalation Exposure Routes:

Inhalation Central Nervous System HI =	0.00E+00
Inhalation Endocrine System HI =	0.00E+00
Inhalation Liver HI =	0.00E+00

tal Hazard Index Across Groundwater	1.45
oss All Media and All Exposure Routes	1.45

Oral and Dermal Exposure Routes:

Oral / Dermal Kidney HI =	1.34
Oral / Dermal Lung HI =	0.10
Oral / Dermal Liver HI =	1.34
Oral / Dermal Fetus HI =	1.34

APPENDIX I

Statistical Summaries

APPENDIX I

CURRENT SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	1,4-Dichlorobenzene (p-)	2-Hexanone (MBK)	Acetophenone
Raw Statistics			
Number of Observations	30	14	17
Number of Missing Data	0	0	0
Number of Valid Observations	30	14	17
Number of Distinct Observations	21	12	7
Minimum	0.55	3	120
Maximum	4300	1450	325
Mean	145.8789828	117.1071429	195.8823529
Standard Deviation	784.5901678	384.0289542	38.12951998
Variance	615581.7314	147478.2376	1453.860294
Coefficient of Variation	5.378363302	3.279295735	0.194655207
Skewness	5.477181488	3.728367947	2.178651394
Too Few Distinct Observations?	NO	NO	NO
Normal Statistics			
Lilliefors Test Statisitic	N/R	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R	N/R
Shapiro-Wilk Test Statisitic	0.18882524	0.326221315	0.60397307
Shapiro-Wilk 5% Critical Value	0.927	0.874	0.892
5% Normality Test Result	NOT NORMAL	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	389.2719364	298.8687407	212.027877
Gamma Statistics			
k hat	0.185854274	0.3145725	32.02166976
k star (bias corrected)	0.189491068	0.294783155	26.41000255
Theta hat	784.9105651	372.2739359	6.117181096
Theta star	769.8462207	397.2653825	7.416975919
nu hat	11.15125641	8.808030012	1088.736772
nu star	11.3694641	8.253928343	897.9400867
5% Approximate Chi Square Value	4.813750417	2.882230951	829.3757952
Adjusted Level of Significance	0.041	0.03122	0.03461
Adjusted Chi Square Value	4.569053701	2.477534441	822.4758018
Anderson-Darling Test Statistic	9.187680999	3.019807771	2.744766704
Anderson-Darling 5% Critical Value	0.904782079	0.829205849	0.737375162
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.528807014	0.391318828	0.370939802
Kolmogrov-Smirnov 5% Critical Value	0.177716221	0.247350438	0.208587834
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	344.5475387	335.3631205	212.0758985
95% Adjusted Gamma UCL	362.999861	390.143503	213.8550661
Lognormal Statistics			
Minimum of log data	-0.597837001	1.098612289	4.787491743
Maximum of log data	8.366370302	7.279318835	5.783825182
Mean of log data	0.977892862	2.587924548	5.261818551
Standard Deviation of log data	1.573035916	1.589646921	0.179493993
Variance of log data	2.474441994	2.526977333	0.032218094

APPENDIX I (Continued)

CURRENT SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	1,4-Dichlorobenzene (p-)	2-Hexanone (MBK)	Acetophenone
Lognormal Statistics (Cont)			
Lilliefors Test Statisitic	N/R	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R	N/R
Shapiro-Wilk Test Statisitic	0.623571629	0.721369955	0.658508196
Shapiro-Wilk 5% Critical Value	0.927	0.874	0.892
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	9.162452278	47.05952147	195.9633393
MLE Standard Deviation	30.21537119	159.6949337	35.45946493
MLE Coefficient of Variation	3.297738452	3.393467011	0.180949483
MLE Skewness	45.75638121	49.25827203	0.548773226
MLE Median	2.658847776	13.302135	192.8318471
MLE 80% Quantile	10.04533363	50.96688951	224.4136442
MLE 90% Quantile	20.07035828	102.5777289	242.8559167
MLE 95% Quantile	35.35843381	181.7975551	259.0668586
MLE 99% Quantile	103.2108933	536.7021505	292.7507543
MVU Estimate of Median	2.551284898	12.14751392	192.6491983
MVU Estimate of Mean	8.429077096	39.76979666	195.775239
MVU Estimate of Standard Deviation	20.6827689	81.71935982	35.3032636
MVU Estimate of SE of Mean	3.090096092	19.10503758	8.561867338
95% H-UCL	23.36605527	260.2896591	212.2934352
95% Chebyshev (MVUE) UCL	21.89849369	123.0467248	233.0955535
97.5% Chebyshev (MVUE) UCL	27.72672101	159.0807181	249.2440834
99% Chebyshev (MVUE) UCL	39.17514501	229.8625205	280.9647434
Non-parametric Statisitics			
95% CLT UCL	381.4975394	285.9284306	211.093576
95% Adjusted-CLT UCL	534.5566384	395.2070285	216.3148992
95% Modified-t UCL	413.1460628	315.9139936	212.8422979
95% Jackknife UCL	389.2719364	298.8687407	212.027877
95% Chebyshev (Mean, Sd) UCL	770.2734334	564.4873355	236.1924346
97.5% Chebyshev (Mean, Sd) UCL	1040.449411	758.0691023	253.6346391
99% Chebyshev (Mean, Sd) UCL	1571.157802	1138.322998	287.8964724
Bootstrap Statistics			
Number of Bootstrap Runs	2000	2000	2000
95% Standard Bootstrap UCL	370.37459	276.5778819	210.2104567
95% Bootstrap-t UCL	71484.96321	3269.156874	220.6218055
95% Hall's Bootstrap UCL	22854.03285	3156.52433	300.3387865
95% Percentile Bootstrap UCL	432.3098123	319.7142857	211.1764706
95% BCA Bootstrap UCL	575.7188478	426.2857143	217.3529412
Recommendations			
Human Inspection Recommended?	NO	NO	YES
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	1571.157802	1138.322998	212.027877
UCL Test	99% Chebyshev (Mean, Sd) UCL	99% Chebyshev (Mean, Sd) UCL	95% Student's-t UCL
2nd Recommended UCL			212.8422979
3rd Recommended UCL			
Recommended UCL > Max Data Value			
Recommendation Warning!	NONE	NONE	NONE
Alternative UCL	NONE	NONE	NONE

APPENDIX I (Continued)

CURRENT SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Benzo(a)anthracene	Benzo(a)pyrene
Raw Statistics		
Number of Observations	25	25
Number of Missing Data	0	0
Number of Valid Observations	25	25
Number of Distinct Observations	12	12
Minimum	52	59
Maximum	4100	5000
Mean	366.8	386.4
Standard Deviation	796.418755	966.9273068
Variance	634282.8333	934948.4167
Coefficient of Variation	2.1712616	2.502399862
Skewness	4.669974835	4.907864738
Too Few Distinct Observations?	NO	NO
Normal Statistics		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.306109823	0.267606044
Shapiro-Wilk 5% Critical Value	0.918	0.918
5% Normality Test Result	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	639.3156813	717.2596791
Gamma Statistics		
k hat	0.966154789	0.885630895
k star (bias corrected)	0.876882881	0.806021854
Theta hat	379.6493112	436.2991427
Theta star	418.2998757	479.3914683
nu hat	48.30773943	44.28154473
nu star	43.84414404	40.30109269
5% Approximate Chi Square Value	29.65659895	26.75246642
Adjusted Level of Significance	0.0395	0.0395
Adjusted Chi Square Value	28.8605756	25.9993915
Anderson-Darling Test Statistic	5.336556719	5.618262788
Anderson-Darling 5% Critical Value	0.774476607	0.77782318
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.441738779	0.446611119
Kolmogrov-Smirnov 5% Critical Value	0.179804209	0.180361434
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	542.2749945	582.0899641
95% Adjusted Gamma UCL	557.2318535	598.9502569
Lognormal Statistics		
Minimum of log data	3.951243719	4.077537444
Maximum of log data	8.318742253	8.517193191
Mean of log data	5.304938832	5.295440555
Standard Deviation of log data	0.84301475	0.815473982
Variance of log data	0.710673869	0.664997815

APPENDIX I (Continued)

CURRENT SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Benzo(a)anthracene	Benzo(a)pyrene
Lognormal Statistics (Cont)		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.647294581	0.630181189
Shapiro-Wilk 5% Critical Value	0.918	0.918
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	287.2278396	278.0885151
MLE Standard Deviation	292.2622469	270.2594437
MLE Coefficient of Variation	1.017527574	0.971846836
MLE Skewness	4.106092479	3.833436505
MLE Median	201.3286872	199.4254645
MLE 80% Quantile	410.4632075	397.2302431
MLE 90% Quantile	594.7926078	568.6838308
MLE 95% Quantile	805.6892294	762.7232523
MLE 99% Quantile	1430.516922	1329.067752
MVU Estimate of Median	198.4858026	196.7893342
MVU Estimate of Mean	281.9489731	273.3724786
MVU Estimate of Standard Deviation	268.5367769	249.9327023
MVU Estimate of SE of Mean	52.472774	48.96539487
95% H-UCL	427.7778227	406.6356642
95% Chebyshev (MVUE) UCL	510.6724923	486.8076865
97.5% Chebyshev (MVUE) UCL	609.6413417	579.1612715
99% Chebyshev (MVUE) UCL	804.0464823	760.5720061
Non-parametric Statisitics		
95% CLT UCL	628.7984557	704.4907777
95% Adjusted-CLT UCL	787.7615927	907.3182675
95% Modified-t UCL	664.1107182	748.8966687
95% Jackknife UCL	639.3156813	717.2596791
95% Chebyshev (Mean, Sd) UCL	1061.101774	1229.347683
97.5% Chebyshev (Mean, Sd) UCL	1361.526706	1594.091819
99% Chebyshev (Mean, Sd) UCL	1951.653312	2310.561046
Bootstrap Statistics		
Number of Bootstrap Runs	2000	2000
95% Standard Bootstrap UCL	627.8396509	699.1454667
95% Bootstrap-t UCL	3532.201641	5043.161451
95% Hall's Bootstrap UCL	3414.226823	4204.458423
95% Percentile Bootstrap UCL	662.28	763.64
95% BCA Bootstrap UCL	844.28	979.88
Recommendations		
Human Inspection Recommended?	NO	NO
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	1061.101774	1229.347683
UCL Test	95% Chebyshev (Mean, Sd) UCL	95% Chebyshev (Mean, Sd) UCL
2nd Recommended UCL		
3rd Recommended UCL		
Recommended UCL > Max Data Value		
Recommendation Warning!	NONE	NONE
Alternative UCL	NONE	NONE

APPENDIX I (Continued)

CURRENT SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Benzo(b)fluoranthene	Benzo(k)fluoranthene
Raw Statistics		
Number of Observations	25	25
Number of Missing Data	0	0
Number of Valid Observations	25	25
Number of Distinct Observations	16	13
Minimum	29	37
Maximum	5900	6900
Mean	434.88	459.2
Standard Deviation	1155.109602	1343.20019
Variance	1334278.193	1804186.75
Coefficient of Variation	2.656157106	2.925087521
Skewness	4.790407943	4.983400737
Too Few Distinct Observations?	NO	NO
Normal Statistics		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.290511781	0.238518203
Shapiro-Wilk 5% Critical Value	0.918	0.918
5% Normality Test Result	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	830.1312145	918.8113696
Gamma Statistics		
k hat	0.721353436	0.739362163
k star (bias corrected)	0.661457691	0.67730537
Theta hat	602.8667476	621.0758717
Theta star	657.4570168	677.9807457
nu hat	36.06767182	36.96810816
nu star	33.07288453	33.86526851
5% Approximate Chi Square Value	20.92255143	21.55455996
Adjusted Level of Significance	0.0395	0.0395
Adjusted Chi Square Value	20.2633095	20.88456892
Anderson-Darling Test Statistic	4.746082487	6.349320237
Anderson-Darling 5% Critical Value	0.786148194	0.784458255
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.417430623	0.424380222
Kolmogrov-Smirnov 5% Critical Value	0.181663238	0.181434888
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	687.4274428	721.46828
95% Adjusted Gamma UCL	709.7920519	744.6134683
Lognormal Statistics		
Minimum of log data	3.36729583	3.610917913
Maximum of log data	8.68270763	8.839276691
Mean of log data	5.240763023	5.318248217
Standard Deviation of log data	0.986332688	0.869635129
Variance of log data	0.972852172	0.756265257

APPENDIX I (Continued)

CURRENT SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Benzo(b)fluoranthene	Benzo(k)fluoranthene
Lognormal Statistics (Cont)		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.738253235	0.588462307
Shapiro-Wilk 5% Critical Value	0.918	0.918
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	307.104816	297.7877086
MLE Standard Deviation	393.9424743	316.5954225
MLE Coefficient of Variation	1.282762281	1.063158127
MLE Skewness	5.959045329	4.391167542
MLE Median	188.8141171	204.0261592
MLE 80% Quantile	434.5079081	425.4255239
MLE 90% Quantile	670.6185717	623.7373444
MLE 95% Quantile	956.4995281	853.0328038
MLE 99% Quantile	1872.393534	1542.283711
MVU Estimate of Median	185.1731609	200.9616513
MVU Estimate of Mean	298.776985	291.8835285
MVU Estimate of Standard Deviation	347.8311857	288.9811954
MVU Estimate of SE of Mean	66.8084375	56.31369845
95% H-UCL	507.0239722	451.6459145
95% Chebyshev (MVUE) UCL	589.9882127	537.3492492
97.5% Chebyshev (MVUE) UCL	715.9955435	643.5624626
99% Chebyshev (MVUE) UCL	963.5125451	852.1977534
Non-parametric Statisitics		
95% CLT UCL	814.877244	901.0735411
95% Adjusted-CLT UCL	1051.379941	1187.166363
95% Modified-t UCL	867.020856	963.4360684
95% Jackknife UCL	830.1312145	918.8113696
95% Chebyshev (Mean, Sd) UCL	1441.881205	1630.174778
97.5% Chebyshev (Mean, Sd) UCL	1877.611431	2136.856499
99% Chebyshev (Mean, Sd) UCL	2733.519086	3132.134629
Bootstrap Statistics		
Number of Bootstrap Runs	2000	2000
95% Standard Bootstrap UCL	796.2701231	890.7687376
95% Bootstrap-t UCL	5942.022045	8666.613501
95% Hall's Bootstrap UCL	4531.926565	6065.259108
95% Percentile Bootstrap UCL	863.64	991.44
95% BCA Bootstrap UCL	1161.76	1263.96
Recommendations		
Human Inspection Recommended?	NO	NO
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	1441.881205	1630.174778
UCL Test	95% Chebyshev (Mean, Sd) UCL	95% Chebyshev (Mean, Sd) UCL
2nd Recommended UCL		
3rd Recommended UCL		
Recommended UCL > Max Data Value		
Recommendation Warning!	NONE	NONE
Alternative UCL	NONE	NONE

APPENDIX I (Continued)

CURRENT SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Carbazole	Chrysene
Raw Statistics		
Number of Observations	25	25
Number of Missing Data	0	0
Number of Valid Observations	25	25
Number of Distinct Observations	11	13
Minimum	44	69
Maximum	9000	6700
Mean	545.36	470.4
Standard Deviation	1761.89053	1304.986941
Variance	3104258.24	1702990.917
Coefficient of Variation	3.230692625	2.774206933
Skewness	4.99529996	4.915846117
Too Few Distinct Observations?	NO	NO
Normal Statistics		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.221422087	0.258906817
Shapiro-Wilk 5% Critical Value	0.918	0.918
5% Normality Test Result	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	1148.237312	916.9356988
Gamma Statistics		
k hat	0.661402062	0.771418198
k star (bias corrected)	0.608700481	0.705514681
Theta hat	824.5514062	609.7859774
Theta star	895.9414639	666.7472876
nu hat	33.07010308	38.57090991
nu star	30.43502405	35.27573406
5% Approximate Chi Square Value	18.83310381	22.68418182
Adjusted Level of Significance	0.0395	0.0395
Adjusted Chi Square Value	18.21058939	21.99535864
Anderson-Darling Test Statistic	7.902947107	6.181141978
Anderson-Darling 5% Critical Value	0.791774031	0.78256986
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.48691061	0.438661635
Kolmogrov-Smirnov 5% Critical Value	0.182423422	0.181151786
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	881.3228496	731.509976
95% Adjusted Gamma UCL	911.4501658	754.4184922
Lognormal Statistics		
Minimum of log data	3.784189634	4.234106505
Maximum of log data	9.104979856	8.809862805
Mean of log data	5.380371871	5.380504865
Standard Deviation of log data	0.840510989	0.837472111
Variance of log data	0.706458723	0.701359536

APPENDIX I (Continued)

CURRENT SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Carbazole	Chrysene
Lognormal Statistics (Cont)		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.43298053	0.586177502
Shapiro-Wilk 5% Critical Value	0.918	0.918
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	309.0803369	308.3343153
MLE Standard Deviation	313.1947931	310.8664946
MLE Coefficient of Variation	1.013311932	1.008212447
MLE Skewness	4.080405571	4.049477571
MLE Median	217.1029948	217.1318701
MLE 80% Quantile	441.6879589	440.6138194
MLE 90% Quantile	639.3349481	636.9279415
MLE 95% Quantile	865.2447792	861.0447585
MLE 99% Quantile	1533.641777	1523.042099
MVU Estimate of Median	214.0554318	214.1057596
MVU Estimate of Mean	303.4407528	302.7575959
MVU Estimate of Standard Deviation	287.9436728	286.011258
MVU Estimate of SE of Mean	56.27880069	55.91770247
95% H-UCL	459.5472096	457.5022942
95% Chebyshev (MVUE) UCL	548.7543577	546.4972102
97.5% Chebyshev (MVUE) UCL	654.9017504	651.963536
99% Chebyshev (MVUE) UCL	863.4077494	859.1317107
Non-parametric Statisitics		
95% CLT UCL	1124.970406	899.7025009
95% Adjusted-CLT UCL	1501.137584	1173.888233
95% Modified-t UCL	1206.91179	959.703132
95% Jackknife UCL	1148.237312	916.9356988
95% Chebyshev (Mean, Sd) UCL	2081.340554	1608.06124
97.5% Chebyshev (Mean, Sd) UCL	2745.960567	2100.328167
99% Chebyshev (Mean, Sd) UCL	4051.477886	3067.291224
Bootstrap Statistics		
Number of Bootstrap Runs	2000	2000
95% Standard Bootstrap UCL	1117.923523	883.2577963
95% Bootstrap-t UCL	22655.99671	9108.813651
95% Hall's Bootstrap UCL	19804.95176	5794.87974
95% Percentile Bootstrap UCL	1249	988.68
95% BCA Bootstrap UCL	1604.6	1304.56
Recommendations		
Human Inspection Recommended?	NO	NO
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	2081.340554	1608.06124
UCL Test	95% Chebyshev (Mean, Sd) UCL	95% Chebyshev (Mean, Sd) UCL
2nd Recommended UCL		
3rd Recommended UCL		
Recommended UCL > Max Data Value		
Recommendation Warning!	NONE	NONE
Alternative UCL	NONE	NONE

APPENDIX I (Continued)

CURRENT SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
Raw Statistics		
Number of Observations	25	25
Number of Missing Data	0	0
Number of Valid Observations	25	25
Number of Distinct Observations	13	15
Minimum	42	36
Maximum	2300	4700
Mean	265.8	360.36
Standard Deviation	427.5814737	905.5103938
Variance	182825.9167	819949.0733
Coefficient of Variation	1.608658667	2.512793856
Skewness	4.854814719	4.974180425
Too Few Distinct Observations?	NO	NO
Normal Statistics		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.302253513	0.247432164
Shapiro-Wilk 5% Critical Value	0.918	0.918
5% Normality Test Result	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	412.108278	670.2042626
Gamma Statistics		
k hat	1.52806135	0.914324801
k star (bias corrected)	1.371360655	0.831272492
Theta hat	173.9458956	394.1269007
Theta star	193.8220986	433.50406
nu hat	76.40306749	45.71624005
nu star	68.56803273	41.56362458
5% Approximate Chi Square Value	50.50466563	27.78418982
Adjusted Level of Significance	0.0395	0.0395
Adjusted Chi Square Value	49.4474457	27.01560453
Anderson-Darling Test Statistic	4.801928072	5.925955136
Anderson-Darling 5% Critical Value	0.761237142	0.776630661
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.392057446	0.4474113
Kolmogrov-Smirnov 5% Critical Value	0.177636122	0.180162872
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	360.8653354	539.0788016
95% Adjusted Gamma UCL	368.580881	554.4154208
Lognormal Statistics		
Minimum of log data	3.737669618	3.583518938
Maximum of log data	7.740664402	8.455317788
Mean of log data	5.221144879	5.248962187
Standard Deviation of log data	0.706501806	0.811192101
Variance of log data	0.499144802	0.658032625

APPENDIX I (Continued)

CURRENT SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
Lognormal Statistics (Cont)		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.654681238	0.603896042
Shapiro-Wilk 5% Critical Value	0.918	0.918
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	237.6305793	264.5363047
MLE Standard Deviation	191.1873348	255.2452687
MLE Coefficient of Variation	0.804556953	0.964878031
MLE Skewness	2.93447014	3.792925517
MLE Median	185.1460326	190.368599
MLE 80% Quantile	336.3454999	377.8206125
MLE 90% Quantile	458.9768163	539.8784584
MLE 95% Quantile	591.9015675	722.9739518
MLE 99% Quantile	957.6363182	1256.135238
MVU Estimate of Median	183.3062307	187.8783849
MVU Estimate of Mean	234.7627591	260.1066504
MVU Estimate of Standard Deviation	180.7998017	236.2779896
MVU Estimate of SE of Mean	35.72027956	46.3082049
95% H-UCL	324.5837658	385.7331349
95% Chebyshev (MVUE) UCL	390.463848	461.9594358
97.5% Chebyshev (MVUE) UCL	457.8358335	549.3012973
99% Chebyshev (MVUE) UCL	590.1750533	720.8674715
Non-parametric Statisitics		
95% CLT UCL	406.4617877	658.2464113
95% Adjusted-CLT UCL	495.1839147	850.7573356
95% Modified-t UCL	425.9471369	700.2320764
95% Jackknife UCL	412.108278	670.2042626
95% Chebyshev (Mean, Sd) UCL	638.5568868	1149.76566
97.5% Chebyshev (Mean, Sd) UCL	799.8490895	1491.342119
99% Chebyshev (Mean, Sd) UCL	1116.676389	2162.302932
Bootstrap Statistics		
Number of Bootstrap Runs	2000	2000
95% Standard Bootstrap UCL	401.7851491	652.6709745
95% Bootstrap-t UCL	1065.598291	4665.886317
95% Hall's Bootstrap UCL	1325.787625	3916.296794
95% Percentile Bootstrap UCL	433.16	722.48
95% BCA Bootstrap UCL	527.6	904.76
Recommendations		
Human Inspection Recommended?	NO	NO
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	638.5568868	1149.76566
UCL Test	95% Chebyshev (Mean, Sd) UCL	95% Chebyshev (Mean, Sd) UCL
2nd Recommended UCL		
3rd Recommended UCL		
Recommended UCL > Max Data Value		
Recommendation Warning!	NONE	NONE
Alternative UCL	NONE	NONE

APPENDIX I (Continued)

CURRENT SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Arsenic	Cadmium
Raw Statistics		
Number of Observations	24	24
Number of Missing Data	0	0
Number of Valid Observations	24	24
Number of Distinct Observations	23	23
Minimum	0.13	0.0175
Maximum	14.3	57.2
Mean	2.09125	3.156104167
Standard Deviation	2.943052708	11.55596329
Variance	8.661559239	133.5402875
Coefficient of Variation	1.407317493	3.661464476
Skewness	3.437383265	4.83847755
Too Few Distinct Observations?	NO	NO
Normal Statistics		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.586616872	0.270564618
Shapiro-Wilk 5% Critical Value	0.916	0.916
5% Normality Test Result	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	3.120854919	7.198871263
Gamma Statistics		
k hat	1.013403875	0.345363792
k star (bias corrected)	0.914506168	0.329971096
Theta hat	2.063589899	9.138491747
Theta star	2.286753302	9.564789776
nu hat	48.643386	16.57746204
nu star	43.89629608	15.83861261
5% Approximate Chi Square Value	29.69954506	7.847194473
Adjusted Level of Significance	0.0392	0.0392
Adjusted Chi Square Value	28.87797682	7.452843454
Anderson-Darling Test Statistic	0.621290476	2.636522238
Anderson-Darling 5% Critical Value	0.771573612	0.841038097
Anderson-Darling 5% Gamma Test Result	AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.138899223	0.257527707
Kolmogrov-Smirnov 5% Critical Value	0.182960942	0.192034564
Kolmogrov-Smirnov 5% Gamma Test Result	KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	GAMMA	NOT GAMMA
95% Approximate Gamma UCL	3.090893446	6.370214404
95% Adjusted Gamma UCL	3.178828273	6.707280459
Lognormal Statistics		
Minimum of log data	-2.040220829	-4.045554398
Maximum of log data	2.660259537	4.046553898
Mean of log data	0.169066568	-0.801935971
Standard Deviation of log data	1.079351262	1.713111794
Variance of log data	1.164999147	2.934752019

APPENDIX I (Continued)

CURRENT SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Arsenic	Cadmium
Lognormal Statistics (Cont)		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.978579407	0.960928037
Shapiro-Wilk 5% Critical Value	0.916	0.916
5% Lognormality Test Result	LOGNORMAL	LOGNORMAL
MLE Mean	2.120318137	1.945346361
MLE Standard Deviation	3.149168669	8.211305917
MLE Coefficient of Variation	1.485234039	4.220999449
MLE Skewness	7.732009809	87.86785475
MLE Median	1.184198966	0.448459918
MLE 80% Quantile	2.947974678	1.907213917
MLE 90% Quantile	4.739980113	4.052818985
MLE 95% Quantile	6.990830729	7.50923
MLE 99% Quantile	14.57980868	24.113264
MVU Estimate of Median	1.155776177	0.421798707
MVU Estimate of Mean	2.045150255	1.706604734
MVU Estimate of Standard Deviation	2.678401202	4.636654391
MVU Estimate of SE of Mean	0.517925749	0.750248443
95% H-UCL	3.829542708	6.976056561
95% Chebyshev (MVUE) UCL	4.302736254	4.97686188
97.5% Chebyshev (MVUE) UCL	5.27959552	6.391904759
99% Chebyshev (MVUE) UCL	7.198446389	9.171482489
Non-parametric Statisitics		
95% CLT UCL	3.079392722	7.036069003
95% Adjusted-CLT UCL	3.529789392	9.525408078
95% Modified-t UCL	3.191107698	7.587157853
95% Jackknife UCL	3.120854919	7.198871263
95% Chebyshev (Mean, Sd) UCL	4.709850338	13.43809786
97.5% Chebyshev (Mean, Sd) UCL	5.842920796	17.88712474
99% Chebyshev (Mean, Sd) UCL	8.068618306	26.62637656
Bootstrap Statistics		
Number of Bootstrap Runs	2000	2000
95% Standard Bootstrap UCL	3.069987005	6.985869423
95% Bootstrap-t UCL	4.54867296	40.22286658
95% Hall's Bootstrap UCL	7.217845757	25.84083655
95% Percentile Bootstrap UCL	3.182916667	7.815020833
95% BCA Bootstrap UCL	3.582083333	10.7395
Recommendations		
Human Inspection Recommended?	NO	NO
Appropriate Distribution	GAMMA	LOGNORMAL
1st Recommended UCL	3.090893446	4.97686188
UCL Test	95% Approximate Gamma UCL	95% Chebyshev (MVUE) UCL
2nd Recommended UCL		
3rd Recommended UCL		
Recommended UCL > Max Data Value		
Recommendation Warning!	NONE	NONE
Alternative UCL	NONE	NONE

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	1,4-Dichlorobenzene (p-)	2-Hexanone (MBK)
Raw Statistics		
Number of Observations	38	15
Number of Missing Data	0	0
Number of Valid Observations	38	15
Number of Distinct Observations	27	13
Minimum	0.55	3
Maximum	4300	1450
Mean	126.5149864	125.9666667
Standard Deviation	696.5988898	371.6469363
Variance	485250.0133	138121.4452
Coefficient of Variation	5.506058289	2.950359378
Skewness	6.12996102	3.699002727
Too Few Distinct Observations?	NO	NO
Normal Statistics		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.187669399	0.373062744
Shapiro-Wilk 5% Critical Value	0.938	0.881
5% Normality Test Result	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	317.1620307	294.9799087
Gamma Statistics		
k hat	0.207362411	0.330664558
k star (bias corrected)	0.208535554	0.308976091
Theta hat	610.1153334	380.9500099
Theta star	606.6830528	407.6906608
nu hat	15.75954323	9.919936741
nu star	15.8487021	9.269282726
5% Approximate Chi Square Value	7.854296873	3.48963554
Adjusted Level of Significance	0.0434	0.03235
Adjusted Chi Square Value	7.620759746	3.065949451
Anderson-Darling Test Statistic	8.768835572	2.551818641
Anderson-Darling 5% Critical Value	0.898243127	0.828990715
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.443633597	0.36124724
Kolmogrov-Smirnov 5% Critical Value	0.158289704	0.239067866
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	255.286802	334.5967319
95% Adjusted Gamma UCL	263.1100307	380.8349309
Lognormal Statistics		
Minimum of log data	-0.597837001	1.098612289
Maximum of log data	8.366370302	7.279318835
Mean of log data	1.311424426	2.78349364
Standard Deviation of log data	1.793096836	1.708855756
Variance of log data	3.215196263	2.920187994

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	1,4-Dichlorobenzene (p-)	2-Hexanone (MBK)
Lognormal Statistics (Cont)		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.773012948	0.780431498
Shapiro-Wilk 5% Critical Value	0.938	0.881
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	18.52317328	69.65730921
MLE Standard Deviation	90.57089258	291.7699603
MLE Coefficient of Variation	4.889599165	4.188648163
MLE Skewness	131.5702145	86.05482751
MLE Median	3.711456644	16.17543349
MLE 80% Quantile	16.88779636	68.54406022
MLE 90% Quantile	37.17192828	145.3832394
MLE 95% Quantile	70.88570004	268.9596472
MLE 99% Quantile	240.367179	861.1701703
MVU Estimate of Median	3.557553874	14.6663118
MVU Estimate of Mean	16.76892368	57.33179182
MVU Estimate of Standard Deviation	56.75162158	133.9547732
MVU Estimate of SE of Mean	6.642708716	29.09264179
95% H-UCL	50.69066473	433.3496747
95% Chebyshev (MVUE) UCL	45.72381969	184.1436774
97.5% Chebyshev (MVUE) UCL	58.25262632	239.0152816
99% Chebyshev (MVUE) UCL	82.86304089	346.7999227
Non-parametric Statisitics		
95% CLT UCL	312.3888117	283.8048903
95% Adjusted-CLT UCL	432.4595852	381.7323217
95% Modified-t UCL	335.8906449	310.254609
95% Jackknife UCL	317.1620307	294.9799087
95% Chebyshev (Mean, Sd) UCL	619.0847852	544.2414933
97.5% Chebyshev (Mean, Sd) UCL	832.2201306	725.229345
99% Chebyshev (Mean, Sd) UCL	1250.883245	1080.744933
Bootstrap Statistics		
Number of Bootstrap Runs	2000	2000
95% Standard Bootstrap UCL	308.1588816	279.4797331
95% Bootstrap-t UCL	6900.469977	2578.150864
95% Hall's Bootstrap UCL	3735.534981	1868.346561
95% Percentile Bootstrap UCL	348.2906474	302.6333333
95% BCA Bootstrap UCL	469.7500552	504
Recommendations		
Human Inspection Recommended?	NO	NO
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	1250.883245	1080.744933
UCL Test	99% Chebyshev (Mean, Sd) UCL	99% Chebyshev (Mean, Sd) UCL
2nd Recommended UCL		
3rd Recommended UCL		
Recommended UCL > Max Data Value		
Recommendation Warning!	NONE	NONE
Alternative UCL	NONE	NONE

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Naphthalene	Acetophenone
Raw Statistics		
Number of Observations	24	21
Number of Missing Data	0	0
Number of Valid Observations	24	21
Number of Distinct Observations	19	8
Minimum	1.1	120
Maximum	57800	4500
Mean	3113.141649	401.1904762
Standard Deviation	11870.56705	939.7751124
Variance	140910362	883177.2619
Coefficient of Variation	3.813050733	2.342466156
Skewness	4.632464704	4.572672052
Too Few Distinct Observations?	NO	NO
Normal Statistics		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.291701857	0.247933992
Shapiro-Wilk 5% Critical Value	0.916	0.908
5% Normality Test Result	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	7265.970511	754.8883117
Gamma Statistics		
k hat	0.138632253	0.997845275
k star (bias corrected)	0.149080999	0.887041982
Theta hat	22456.11376	402.0567981
Theta star	20882.21613	452.2790178
nu hat	6.654348155	41.90950155
nu star	7.155887969	37.25576323
5% Approximate Chi Square Value	2.255895186	24.27937454
Adjusted Level of Significance	0.0392	0.0383
Adjusted Chi Square Value	2.067318263	23.47462213
Anderson-Darling Test Statistic	5.87826674	6.62030083
Anderson-Darling 5% Critical Value	0.920743398	0.76973377
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.488382291	0.511790771
Kolmogrov-Smirnov 5% Critical Value	0.199283786	0.194907496
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	9875.145356	615.6113027
95% Adjusted Gamma UCL	10775.93773	636.7155692
Lognormal Statistics		
Minimum of log data	0.09531018	4.787491743
Maximum of log data	10.96474405	8.411832676
Mean of log data	2.436259097	5.41582773
Standard Deviation of log data	3.094824171	0.705080579
Variance of log data	9.57793665	0.497138623

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Naphthalene	Acetophenone
Lognormal Statistics (Cont)		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.58030096	0.377796754
Shapiro-Wilk 5% Critical Value	0.916	0.908
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	1373.650979	288.4140269
MLE Standard Deviation	165075.9791	231.4530024
MLE Coefficient of Variation	120.1731602	0.802502586
MLE Skewness	1735851.839	2.924327769
MLE Median	11.43020139	224.9386571
MLE 80% Quantile	156.2387869	408.1443125
MLE 90% Quantile	609.7860495	556.6052458
MLE 95% Quantile	1857.97945	717.4371028
MLE 99% Quantile	15287.94853	1159.617115
MVU Estimate of Median	9.347359159	222.2904187
MVU Estimate of Mean	618.1950056	284.3135822
MVU Estimate of Standard Deviation	6676.296999	216.9094282
MVU Estimate of SE of Mean	488.8201005	46.80287643
95% H-UCL	62541.56648	407.7780498
95% Chebyshev (MVUE) UCL	2748.912425	488.3225909
97.5% Chebyshev (MVUE) UCL	3670.875555	576.5974519
99% Chebyshev (MVUE) UCL	5481.893596	749.9963229
Non-parametric Statisitics		
95% CLT UCL	7098.736063	738.510055
95% Adjusted-CLT UCL	9546.969116	957.1628908
95% Modified-t UCL	7647.845392	788.9937354
95% Jackknife UCL	7265.970511	754.8883117
95% Chebyshev (Mean, Sd) UCL	13675.05609	1295.094913
97.5% Chebyshev (Mean, Sd) UCL	18245.2049	1681.888077
99% Chebyshev (Mean, Sd) UCL	27222.37729	2441.668349
Bootstrap Statistics		
Number of Bootstrap Runs	2000	2000
95% Standard Bootstrap UCL	7035.616431	732.6618963
95% Bootstrap-t UCL	42664.35074	12106.40411
95% Hall's Bootstrap UCL	33363.41626	11570.61511
95% Percentile Bootstrap UCL	7669.576503	811.4285714
95% BCA Bootstrap UCL	12251.4438	1019.285714
Recommendations		
Human Inspection Recommended?	YES	NO
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	33363.41626	1295.094913
UCL Test	95% Hall's Bootstrap UCL	95% Chebyshev (Mean, Sd) UCL
2nd Recommended UCL		
3rd Recommended UCL		
Recommended UCL > Max Data Value		
Recommendation Warning!	PLEASE CHECK	NONE
Alternative UCL	NONE	NONE

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Benzo(a)anthracene	Benzo(a)pyrene
Raw Statistics		
Number of Observations	29	29
Number of Missing Data	0	0
Number of Valid Observations	29	29
Number of Distinct Observations	14	14
Minimum	52	59
Maximum	4500	5000
Mean	497.2413793	515.1724138
Standard Deviation	1066.848217	1179.423439
Variance	1138165.118	1391039.648
Coefficient of Variation	2.145533862	2.289376153
Skewness	3.4798608	3.564535905
Too Few Distinct Observations?	NO	NO
Normal Statistics		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.364175457	0.343815315
Shapiro-Wilk 5% Critical Value	0.926	0.926
5% Normality Test Result	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	834.2502404	887.7428915
Gamma Statistics		
k hat	0.76677455	0.733060801
k star (bias corrected)	0.71044155	0.680215431
Theta hat	648.4844593	702.7690104
Theta star	699.9046988	757.3665494
nu hat	44.47292388	42.51752647
nu star	41.20560992	39.452495
5% Approximate Chi Square Value	27.49126121	26.06106269
Adjusted Level of Significance	0.0407	0.0407
Adjusted Chi Square Value	26.82135196	25.41015186
Anderson-Darling Test Statistic	6.291411587	6.520794233
Anderson-Darling 5% Critical Value	0.783069212	0.785592284
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.434514337	0.435100021
Kolmogrov-Smirnov 5% Critical Value	0.16889734	0.169211401
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	745.2962654	779.8928739
95% Adjusted Gamma UCL	763.9113174	799.870744
Lognormal Statistics		
Minimum of log data	3.951243719	4.077537444
Maximum of log data	8.411832676	8.517193191
Mean of log data	5.43068522	5.425332846
Standard Deviation of log data	0.973878479	0.956150269
Variance of log data	0.948439292	0.914223337

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Benzo(a)anthracene	Benzo(a)pyrene
Lognormal Statistics (Cont)		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.662426144	0.650808277
Shapiro-Wilk 5% Critical Value	0.926	0.926
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	366.8323257	358.6849816
MLE Standard Deviation	461.3457622	438.540887
MLE Coefficient of Variation	1.257647513	1.222635208
MLE Skewness	5.762135022	5.495545787
MLE Median	228.3056314	227.0869188
MLE 80% Quantile	519.887548	509.4235659
MLE 90% Quantile	798.0083531	775.8707459
MLE 95% Quantile	1133.103172	1094.661037
MLE 99% Quantile	2199.370719	2099.256203
MVU Estimate of Median	224.6006402	223.5336769
MVU Estimate of Mean	358.4603768	350.8703314
MVU Estimate of Standard Deviation	414.8852755	396.2730322
MVU Estimate of SE of Mean	73.94427716	70.8077618
95% H-UCL	572.6797416	553.3498329
95% Chebyshev (MVUE) UCL	680.7760084	659.5142095
97.5% Chebyshev (MVUE) UCL	820.2422396	793.0646622
99% Chebyshev (MVUE) UCL	1094.196645	1055.398666
Non-parametric Statisitics		
95% CLT UCL	823.1012598	875.4174558
95% Adjusted-CLT UCL	959.8889209	1030.318792
95% Modified-t UCL	855.5863513	911.9043696
95% Jackknife UCL	834.2502404	887.7428915
95% Chebyshev (Mean, Sd) UCL	1360.777359	1469.829841
97.5% Chebyshev (Mean, Sd) UCL	1734.430067	1882.910873
99% Chebyshev (Mean, Sd) UCL	2468.398459	2694.328571
Bootstrap Statistics		
Number of Bootstrap Runs	2000	2000
95% Standard Bootstrap UCL	821.4045007	864.4042267
95% Bootstrap-t UCL	2460.68486	4458.343796
95% Hall's Bootstrap UCL	2974.489085	3683.102857
95% Percentile Bootstrap UCL	860.8965517	890.6206897
95% BCA Bootstrap UCL	983.3103448	1042.724138
Recommendations		
Human Inspection Recommended?	NO	NO
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	1360.777359	1469.829841
UCL Test	95% Chebyshev (Mean, Sd) UCL	95% Chebyshev (Mean, Sd) UCL
2nd Recommended UCL		
3rd Recommended UCL		
Recommended UCL > Max Data Value		
Recommendation Warning!	NONE	NONE
Alternative UCL	NONE	NONE

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Benzo(b)fluoranthene	Benzo(k)fluoranthene
Raw Statistics		
Number of Observations	29	29
Number of Missing Data	0	0
Number of Valid Observations	29	29
Number of Distinct Observations	18	14
Minimum	29	37
Maximum	5900	6900
Mean	558.6896552	575.1724138
Standard Deviation	1312.218707	1456.490672
Variance	1721917.936	2121365.076
Coefficient of Variation	2.34874352	2.532267954
Skewness	3.602628572	3.872072622
Too Few Distinct Observations?	NO	NO
Normal Statistics		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.370431251	0.323688597
Shapiro-Wilk 5% Critical Value	0.926	0.926
5% Normality Test Result	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	973.2091014	1035.266225
Gamma Statistics		
k hat	0.647849306	0.663449947
k star (bias corrected)	0.603818918	0.6178057
Theta hat	862.3759416	866.9416832
Theta star	925.2602703	930.9924045
nu hat	37.57525974	38.48009693
nu star	35.02149724	35.83273058
5% Approximate Chi Square Value	22.48014165	23.13184038
Adjusted Level of Significance	0.0407	0.0407
Adjusted Chi Square Value	21.87919471	22.52152258
Anderson-Darling Test Statistic	5.432412036	7.179431085
Anderson-Darling 5% Critical Value	0.795060985	0.793327442
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.406256868	0.416494903
Kolmogrov-Smirnov 5% Critical Value	0.170274841	0.170080145
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	870.3747744	890.9796109
95% Adjusted Gamma UCL	894.2810042	915.1245467
Lognormal Statistics		
Minimum of log data	3.36729583	3.610917913
Maximum of log data	8.68270763	8.839276691
Mean of log data	5.382459593	5.436843286
Standard Deviation of log data	1.093909531	0.990349563
Variance of log data	1.196638063	0.980792257

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Benzo(b)fluoranthene	Benzo(k)fluoranthene
Lognormal Statistics (Cont)		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.754259801	0.618043829
Shapiro-Wilk 5% Critical Value	0.926	0.926
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	395.7483877	375.1175393
MLE Standard Deviation	601.3518367	484.2603278
MLE Coefficient of Variation	1.519530731	1.290956239
MLE Skewness	8.067148595	6.024335091
MLE Median	217.5567189	229.7158905
MLE 80% Quantile	548.2948268	530.4303547
MLE 90% Quantile	887.2558112	820.1132782
MLE 95% Quantile	1315.458789	1171.415725
MLE 99% Quantile	2770.80498	2299.383609
MVU Estimate of Median	213.1111135	225.8618502
MVU Estimate of Mean	383.5715478	366.1841649
MVU Estimate of Standard Deviation	521.1985309	433.4934118
MVU Estimate of SE of Mean	91.03319397	77.07010322
95% H-UCL	672.8504017	592.2024858
95% Chebyshev (MVUE) UCL	780.3760408	702.1249564
97.5% Chebyshev (MVUE) UCL	952.0736619	847.4868053
99% Chebyshev (MVUE) UCL	1289.340391	1133.02201
Non-parametric Statisitics		
95% CLT UCL	959.4959032	1020.045329
95% Adjusted-CLT UCL	1133.679851	1227.839623
95% Modified-t UCL	1000.378277	1067.677936
95% Jackknife UCL	973.2091014	1035.266225
95% Chebyshev (Mean, Sd) UCL	1620.835187	1754.095599
97.5% Chebyshev (Mean, Sd) UCL	2080.426407	2264.216604
99% Chebyshev (Mean, Sd) UCL	2983.204364	3266.250537
Bootstrap Statistics		
Number of Bootstrap Runs	2000	2000
95% Standard Bootstrap UCL	955.7863381	1018.311227
95% Bootstrap-t UCL	4678.164145	10509.15067
95% Hall's Bootstrap UCL	3409.018801	6408.940172
95% Percentile Bootstrap UCL	987.5517241	1055.068966
95% BCA Bootstrap UCL	1163.413793	1267.689655
Recommendations		
Human Inspection Recommended?	NO	NO
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	2983.204364	1754.095599
UCL Test	99% Chebyshev (Mean, Sd) UCL	95% Chebyshev (Mean, Sd) UCL
2nd Recommended UCL		
3rd Recommended UCL		
Recommended UCL > Max Data Value		
Recommendation Warning!	NONE	NONE
Alternative UCL	NONE	NONE

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Carbazole	Chrysene
Raw Statistics		
Number of Observations	29	29
Number of Missing Data	0	0
Number of Valid Observations	29	29
Number of Distinct Observations	13	15
Minimum	19	69
Maximum	9000	6700
Mean	639.7586207	587.9310345
Standard Deviation	1796.808235	1425.0509
Variance	3228519.833	2030770.067
Coefficient of Variation	2.808572134	2.42384024
Skewness	4.227054897	3.797824353
Too Few Distinct Observations?	NO	NO
Normal Statistics		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.303835412	0.343782463
Shapiro-Wilk 5% Critical Value	0.926	0.926
5% Normality Test Result	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	1207.356042	1038.093272
Gamma Statistics		
k hat	0.582287548	0.690397847
k star (bias corrected)	0.545039411	0.641965886
Theta hat	1098.698784	851.5829493
Theta star	1173.784149	915.8290926
nu hat	33.77267777	40.04307511
nu star	31.61228582	37.23402136
5% Approximate Chi Square Value	19.76275429	24.26180147
Adjusted Level of Significance	0.0407	0.0407
Adjusted Chi Square Value	19.20240852	23.63553963
Anderson-Darling Test Statistic	7.833025223	6.833443333
Anderson-Darling 5% Critical Value	0.802346208	0.790332991
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.473408723	0.421196465
Kolmogrov-Smirnov 5% Critical Value	0.171093051	0.169743835
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	1023.350899	902.2840586
95% Adjusted Gamma UCL	1053.213317	926.1915335
Lognormal Statistics		
Minimum of log data	2.944438979	4.234106505
Maximum of log data	9.104979856	8.809862805
Mean of log data	5.395248385	5.499559855
Standard Deviation of log data	1.070473542	0.963012656
Variance of log data	1.145913603	0.927393376

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Carbazole	Chrysene
Lognormal Statistics (Cont)		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.578443481	0.622427005
Shapiro-Wilk 5% Critical Value	0.926	0.926
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	390.8036215	388.8744505
MLE Standard Deviation	572.4057316	480.6826836
MLE Coefficient of Variation	1.464688913	1.236087079
MLE Skewness	7.536283804	5.596892611
MLE Median	220.3568737	244.5842559
MLE 80% Quantile	544.4622052	551.8661576
MLE 90% Quantile	872.0152273	843.0540881
MLE 95% Quantile	1282.000928	1192.390833
MLE 99% Quantile	2657.576358	2297.386134
MVU Estimate of Median	216.0431641	240.7025118
MVU Estimate of Mean	379.4376058	380.247779
MVU Estimate of Standard Deviation	500.016418	433.5556139
MVU Estimate of SE of Mean	87.71486008	77.39396348
95% H-UCL	653.0130887	602.6756872
95% Chebyshev (MVUE) UCL	761.7778167	717.6002447
97.5% Chebyshev (MVUE) UCL	927.2167314	863.5729261
99% Chebyshev (MVUE) UCL	1252.189444	1150.307993
Non-parametric Statisitics		
95% CLT UCL	1188.578694	1023.200934
95% Adjusted-CLT UCL	1468.426582	1222.611271
95% Modified-t UCL	1251.006657	1069.197255
95% Jackknife UCL	1207.356042	1038.093272
95% Chebyshev (Mean, Sd) UCL	2094.144103	1741.406013
97.5% Chebyshev (Mean, Sd) UCL	2723.457863	2240.515558
99% Chebyshev (Mean, Sd) UCL	3959.622886	3220.919612
Bootstrap Statistics		
Number of Bootstrap Runs	2000	2000
95% Standard Bootstrap UCL	1166.869325	1020.881775
95% Bootstrap-t UCL	17616.26043	4755.737744
95% Hall's Bootstrap UCL	12548.3216	4771.403348
95% Percentile Bootstrap UCL	1249.551724	1039.103448
95% BCA Bootstrap UCL	1553.586207	1255.241379
Recommendations		
Human Inspection Recommended?	NO	NO
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	3959.622886	1741.406013
UCL Test	99% Chebyshev (Mean, Sd) UCL	95% Chebyshev (Mean, Sd) UCL
2nd Recommended UCL		
3rd Recommended UCL		
Recommended UCL > Max Data Value		
Recommendation Warning!	NONE	NONE
Alternative UCL	NONE	NONE

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
Raw Statistics		
Number of Observations	29	29
Number of Missing Data	0	0
Number of Valid Observations	29	29
Number of Distinct Observations	14	17
Minimum	42	36
Maximum	4500	4700
Mean	400.4482759	486.862069
Standard Deviation	883.1413326	1140.572467
Variance	779938.6133	1300905.552
Coefficient of Variation	2.205381783	2.342701433
Skewness	4.198648715	3.582967849
Too Few Distinct Observations?	NO	NO
Normal Statistics		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.333809222	0.318377327
Shapiro-Wilk 5% Critical Value	0.926	0.926
5% Normality Test Result	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	679.4255942	847.1598338
Gamma Statistics		
k hat	0.852311599	0.729929242
k star (bias corrected)	0.787129939	0.677407826
Theta hat	469.8378815	666.9989923
Theta star	508.7448158	718.7133807
nu hat	49.43407272	42.33589605
nu star	45.65353646	39.28965393
5% Approximate Chi Square Value	31.14975964	25.92858096
Adjusted Level of Significance	0.0407	0.0407
Adjusted Chi Square Value	30.4333677	25.2794558
Anderson-Darling Test Statistic	6.200961261	7.313979839
Anderson-Darling 5% Critical Value	0.779801697	0.785940263
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.43218861	0.472184913
Kolmogrov-Smirnov 5% Critical Value	0.168373853	0.169250483
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	586.9027618	737.743505
95% Adjusted Gamma UCL	600.7182689	756.6872622
Lognormal Statistics		
Minimum of log data	3.737669618	3.583518938
Maximum of log data	8.411832676	8.455317788
Mean of log data	5.301951624	5.364814815
Standard Deviation of log data	0.906046946	0.952849186
Variance of log data	0.820921068	0.907921571

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
Lognormal Statistics (Cont)		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.669714227	0.602442627
Shapiro-Wilk 5% Critical Value	0.926	0.926
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	302.6001079	336.5597176
MLE Standard Deviation	341.3608313	409.3269681
MLE Coefficient of Variation	1.128092233	1.216209031
MLE Skewness	4.819877946	5.447600206
MLE Median	200.7281738	213.7516473
MLE 80% Quantile	431.6267858	478.1728972
MLE 90% Quantile	643.0496575	727.2177989
MLE 95% Quantile	891.0484915	1024.798949
MLE 99% Quantile	1651.462965	1960.867039
MVU Estimate of Median	197.9057934	210.4299494
MVU Estimate of Mean	296.8386295	329.290739
MVU Estimate of Standard Deviation	312.4070455	370.1988351
MVU Estimate of SE of Mean	56.19484098	66.17941531
95% H-UCL	451.8304639	518.0796271
95% Chebyshev (MVUE) UCL	541.7862625	617.7601224
97.5% Chebyshev (MVUE) UCL	647.775299	742.5810551
99% Chebyshev (MVUE) UCL	855.9702376	987.7676072
Non-parametric Statisitics		
95% CLT UCL	670.1964223	835.2404059
95% Adjusted-CLT UCL	806.8189033	985.81379
95% Modified-t UCL	700.7359403	870.6462388
95% Jackknife UCL	679.4255942	847.1598338
95% Chebyshev (Mean, Sd) UCL	1115.286904	1410.072462
97.5% Chebyshev (Mean, Sd) UCL	1424.598149	1809.546337
99% Chebyshev (Mean, Sd) UCL	2032.180196	2594.235411
Bootstrap Statistics		
Number of Bootstrap Runs	2000	2000
95% Standard Bootstrap UCL	671.0848512	825.5596128
95% Bootstrap-t UCL	4093.372002	8045.946168
95% Hall's Bootstrap UCL	3348.294455	7815.794808
95% Percentile Bootstrap UCL	690.3448276	811.2413793
95% BCA Bootstrap UCL	834.6206897	967.2413793
Recommendations		
Human Inspection Recommended?	NO	NO
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	1115.286904	1410.072462
UCL Test	95% Chebyshev (Mean, Sd) UCL	95% Chebyshev (Mean, Sd) UCL
2nd Recommended UCL		
3rd Recommended UCL		
Recommended UCL > Max Data Value		
Recommendation Warning!	NONE	NONE
Alternative UCL	NONE	NONE

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Naphthalene	Arsenic
Raw Statistics		
Number of Observations	29	28
Number of Missing Data	0	0
Number of Valid Observations	29	28
Number of Distinct Observations	14	25
Minimum	120	0.13
Maximum	32000	14.3
Mean	1973.793103	1.899285714
Standard Deviation	6572.684499	2.759536902
Variance	43200181.53	7.615043915
Coefficient of Variation	3.329976423	1.452934059
Skewness	4.096180852	3.711718076
Too Few Distinct Observations?	NO	NO
Normal Statistics		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.312720067	0.557738567
Shapiro-Wilk 5% Critical Value	0.926	0.924
5% Normality Test Result	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	4050.051827	2.787556363
Gamma Statistics		
k hat	0.358478036	1.053968201
k star (bias corrected)	0.344382607	0.96485256
Theta hat	5506.036372	1.802033223
Theta star	5731.396025	1.968472482
nu hat	20.79172607	59.02221925
nu star	19.97419119	54.03174338
5% Approximate Chi Square Value	10.83062434	38.1400161
Adjusted Level of Significance	0.0407	0.0404
Adjusted Chi Square Value	10.42830749	37.31389278
Anderson-Darling Test Statistic	8.549184231	0.976784678
Anderson-Darling 5% Critical Value	0.843120159	0.772578668
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.469028164	0.163690538
Kolmogrov-Smirnov 5% Critical Value	0.175353777	0.170010318
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	KS GAMMA
5% Gamma Test Result	NOT GAMMA	APPROX GAMMA
95% Approximate Gamma UCL	3640.133715	2.690657446
95% Adjusted Gamma UCL	3780.567544	2.75022815
Lognormal Statistics		
Minimum of log data	4.787491743	-2.040220829
Maximum of log data	10.37349118	2.660259537
Mean of log data	5.719194739	0.097134764
Standard Deviation of log data	1.318759833	1.018515829
Variance of log data	1.739127498	1.037374495

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Naphthalene	Arsenic
Lognormal Statistics (Cont)		
Lilliefors Test Statisitic	N/R	N/R
Lilliefors 5% Critical Value	N/R	N/R
Shapiro-Wilk Test Statisitic	0.477576708	0.972227637
Shapiro-Wilk 5% Critical Value	0.926	0.924
5% Lognormality Test Result	NOT LOGNORMAL	LOGNORMAL
MLE Mean	726.877882	1.851177663
MLE Standard Deviation	1574.55485	2.498608927
MLE Coefficient of Variation	2.166188969	1.349740209
MLE Skewness	16.6631371	6.508175497
MLE Median	304.6594938	1.102008875
MLE 80% Quantile	928.478104	2.605906605
MLE 90% Quantile	1658.719379	4.079308973
MLE 95% Quantile	2666.587023	5.886098023
MLE 99% Quantile	6546.135219	11.77763723
MVU Estimate of Median	295.6510096	1.081769761
MVU Estimate of Mean	690.0621772	1.802225422
MVU Estimate of Standard Deviation	1243.139504	2.210360174
MVU Estimate of SE of Mean	206.0177698	0.398412408
95% H-UCL	1485.420828	3.014738832
95% Chebyshev (MVUE) UCL	1588.072816	3.538864845
97.5% Chebyshev (MVUE) UCL	1976.642737	4.29031011
99% Chebyshev (MVUE) UCL	2739.913104	5.766378825
Non-parametric Statisitics		
95% CLT UCL	3981.364706	2.757082565
95% Adjusted-CLT UCL	4973.347925	3.147953674
95% Modified-t UCL	4204.781163	2.848524357
95% Jackknife UCL	4050.051827	2.787556363
95% Chebyshev (Mean, Sd) UCL	7293.902802	4.172466576
97.5% Chebyshev (Mean, Sd) UCL	9595.918519	5.15607375
99% Chebyshev (Mean, Sd) UCL	14117.78264	7.088179581
Bootstrap Statistics		
Number of Bootstrap Runs	2000	2000
95% Standard Bootstrap UCL	3942.142798	2.717629808
95% Bootstrap-t UCL	24024.25054	4.048411845
95% Hall's Bootstrap UCL	28734.44793	6.293250158
95% Percentile Bootstrap UCL	4176.551724	2.827857143
95% BCA Bootstrap UCL	5805.689655	3.325357143
Recommendations		
Human Inspection Recommended?	NO	NO
Appropriate Distribution	NON-PARAMETRIC	GAMMA
1st Recommended UCL	14117.78264	2.690657446
UCL Test	99% Chebyshev (Mean, Sd) UCL	95% Approximate Gamma UCL
2nd Recommended UCL		
3rd Recommended UCL		
Recommended UCL > Max Data Value		
Recommendation Warning!	NONE	NONE
Alternative UCL	NONE	NONE

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	**Cadmium**
Raw Statistics	
Number of Observations	28
Number of Missing Data	0
Number of Valid Observations	28
Number of Distinct Observations	27
Minimum	0.0175
Maximum	57.2
Mean	2.946303571
Standard Deviation	10.70532236
Variance	114.6039268
Coefficient of Variation	3.633475676
Skewness	5.179515739
Too Few Distinct Observations?	NO
Normal Statistics	
Lilliefors Test Statisitic	N/R
Lilliefors 5% Critical Value	N/R
Shapiro-Wilk Test Statisitic	0.271572542
Shapiro-Wilk 5% Critical Value	0.924
5% Normality Test Result	NOT NORMAL
95% Student's-t UCL	6.392252645
Gamma Statistics	
k hat	0.358080145
k star (bias corrected)	0.343523939
Theta hat	8.22805623
Theta star	8.576705241
nu hat	20.05248814
nu star	19.23734061
5% Approximate Chi Square Value	10.28944634
Adjusted Level of Significance	0.0404
Adjusted Chi Square Value	9.884916026
Anderson-Darling Test Statistic	2.427566782
Anderson-Darling 5% Critical Value	0.841485272
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.226902037
Kolmogrov-Smirnov 5% Critical Value	0.178182869
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA
95% Approximate Gamma UCL	5.508464055
95% Adjusted Gamma UCL	5.733892446
Lognormal Statistics	
Minimum of log data	-4.045554398
Maximum of log data	4.046553898
Mean of log data	-0.790380507
Standard Deviation of log data	1.765066622
Variance of log data	3.11546018

APPENDIX I (Continued)

FUTURE SURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	**Cadmium**
Lognormal Statistics (Cont)	
Lilliefors Test Statisitic	N/R
Lilliefors 5% Critical Value	N/R
Shapiro-Wilk Test Statisitic	0.972587878
Shapiro-Wilk 5% Critical Value	0.924
5% Lognormality Test Result	LOGNORMAL
MLE Mean	2.154049552
MLE Standard Deviation	9.998085949
MLE Coefficient of Variation	4.641530155
MLE Skewness	113.9207979
MLE Median	0.453672137
MLE 80% Quantile	2.015970644
MLE 90% Quantile	4.382985452
MLE 95% Quantile	8.274298019
MLE 99% Quantile	27.52692057
MVU Estimate of Median	0.429076109
MVU Estimate of Mean	1.901250636
MVU Estimate of Standard Deviation	5.719003096
MVU Estimate of SE of Mean	0.822211665
95% H-UCL	7.180839459
95% Chebyshev (MVUE) UCL	5.485188193
97.5% Chebyshev (MVUE) UCL	7.035960837
99% Chebyshev (MVUE) UCL	10.08215341
Non-parametric Statisitics	
95% CLT UCL	6.274032873
95% Adjusted-CLT UCL	8.390011561
95% Modified-t UCL	6.72230256
95% Jackknife UCL	6.392252645
95% Chebyshev (Mean, Sd) UCL	11.76486073
97.5% Chebyshev (Mean, Sd) UCL	15.58065746
99% Chebyshev (Mean, Sd) UCL	23.07605124
Bootstrap Statistics	
Number of Bootstrap Runs	2000
95% Standard Bootstrap UCL	6.248056453
95% Bootstrap-t UCL	29.44256784
95% Hall's Bootstrap UCL	18.66442101
95% Percentile Bootstrap UCL	6.855035714
95% BCA Bootstrap UCL	9.148678571
Recommendations	
Human Inspection Recommended?	NO
Appropriate Distribution	LOGNORMAL
1st Recommended UCL	5.485188193
UCL Test	95% Chebyshev (MVUE) UCL
2nd Recommended UCL	
3rd Recommended UCL	
Recommended UCL > Max Data Value	
Recommendation Warning!	NONE
Alternative UCL	NONE

APPENDIX I (Continued)

SUBSURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	2-Hexanone (MBK)	Benzo(a)anthracene	Benzo(a)pyrene
Raw Statistics			
Number of Observations	11	55	55
Number of Missing Data	0	0	0
Number of Valid Observations	11	55	55
Number of Distinct Observations	10	24	23
Minimum	5	39	43
Maximum	300	1200	820
Mean	50.04545455	217.3909091	212.9
Standard Deviation	90.99600391	140.7934424	91.61045751
Variance	8280.272727	19822.79343	8392.475926
Coefficient of Variation	1.818267108	0.647651013	0.430298063
Skewness	2.501612486	6.429697148	5.317818242
Too Few Distinct Observations?	NO	NO	NO
Normal Statistics			
Lilliefors Test Statisitic	N/R	0.39023891	0.324565947
Lilliefors 5% Critical Value	N/R	0.119468216	0.119468216
Shapiro-Wilk Test Statisitic	0.580693635	N/A	N/A
Shapiro-Wilk 5% Critical Value	0.85	N/A	N/A
5% Normality Test Result	NOT NORMAL	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	99.77273029	249.1628373	233.5731282
Gamma Statistics			
k hat	0.550135213	5.393982021	8.239440299
k star (bias corrected)	0.460704397	5.111886032	7.802137495
Theta hat	90.96937145	40.30249049	25.83913376
Theta star	108.6281243	42.52655629	27.28739402
nu hat	12.10297469	593.3380223	906.3384329
nu star	10.13549674	562.3074635	858.2351245
5% Approximate Chi Square Value	4.025773926	508.2958309	791.2301215
Adjusted Level of Significance	0.02783	0.045636364	0.045636364
Adjusted Chi Square Value	3.421281326	506.9215254	789.5094074
Anderson-Darling Test Statistic	1.487674741	10.29307339	9.294090033
Anderson-Darling 5% Critical Value	0.777365956	0.753258367	0.75147711
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.374738476	0.309060359	0.310451036
Kolmogrov-Smirnov 5% Critical Value	0.268233772	0.120267815	0.120071479
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	125.9970259	240.4909174	230.9293504
95% Adjusted Gamma UCL	148.2589396	241.1429078	231.4326546
Lognormal Statistics			
Minimum of log data	1.609437912	3.663561646	3.761200116
Maximum of log data	5.703782475	7.090076836	6.70930434
Mean of log data	2.775131513	5.286146773	5.298913129
Standard Deviation of log data	1.433310492	0.428510377	0.365365191
Variance of log data	2.054378967	0.183621143	0.133491723

APPENDIX I (Continued)

SUBSURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	2-Hexanone (MBK)	Benzo(a)anthracene	Benzo(a)pyrene
Lognormal Statistics (Cont)			
Lilliefors Test Statisitic	N/R	0.336354593	0.334441285
Lilliefors 5% Critical Value	N/R	0.119468216	0.119468216
Shapiro-Wilk Test Statisitic	0.77664843	N/A	N/A
Shapiro-Wilk 5% Critical Value	0.85	N/A	N/A
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	44.80505629	216.5794261	213.9321674
MLE Standard Deviation	116.8543963	97.23439827	80.84592763
MLE Coefficient of Variation	2.608062705	0.448954917	0.377904495
MLE Skewness	25.56420735	1.437356337	1.187682708
MLE Median	16.04073642	197.5806336	200.1191879
MLE 80% Quantile	53.85411836	283.790997	272.5022076
MLE 90% Quantile	101.1834793	342.6750449	320.0276504
MLE 95% Quantile	169.5126021	399.8327533	365.0151532
MLE 99% Quantile	449.8938733	535.3185069	468.1330562
MVU Estimate of Median	14.59984279	197.2510809	199.8764731
MVU Estimate of Mean	38.3539447	216.1869541	213.656369
MVU Estimate of Standard Deviation	64.19251273	96.38319991	80.34128034
MVU Estimate of SE of Mean	17.84352329	12.96702686	10.82011399
95% H-UCL	263.0238449	240.9000665	233.8430288
95% Chebyshev (MVUE) UCL	116.1320595	272.7089138	260.8201524
97.5% Chebyshev (MVUE) UCL	149.7867119	297.1660109	281.2279592
99% Chebyshev (MVUE) UCL	215.8947597	345.2072423	321.3151438
Non-parametric Statisitics			
95% CLT UCL	95.17419735	248.6177708	233.2184682
95% Adjusted-CLT UCL	117.2863022	266.2047265	242.6829375
95% Modified-t UCL	103.2217718	251.906047	235.0493941
95% Jackknife UCL	99.77273029	249.1628373	233.5731282
95% Chebyshev (Mean, Sd) UCL	169.6376335	300.1427918	266.7443958
97.5% Chebyshev (Mean, Sd) UCL	221.3852648	335.9495976	290.0429088
99% Chebyshev (Mean, Sd) UCL	323.0334663	406.2851339	335.8083263
Bootstrap Statistics			
Number of Bootstrap Runs	2000	2000	2000
95% Standard Bootstrap UCL	93.51934744	249.0734843	232.7596463
95% Bootstrap-t UCL	244.1390823	292.3594053	248.1693639
95% Hall's Bootstrap UCL	280.5370562	393.0398455	329.9162261
95% Percentile Bootstrap UCL	97.95454545	254.8727273	235.6363636
95% BCA Bootstrap UCL	118.5454545	270.1727273	247.8090909
Recommendations			
Human Inspection Recommended?	YES	YES	YES
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	323.0334663	249.1628373	233.5731282
UCL Test	99% Chebyshev (Mean, Sd) UCL	95% Student's-t UCL	95% Student's-t UCL
2nd Recommended UCL		251.906047	235.0493941
3rd Recommended UCL			
Recommended UCL > Max Data Value	YES		
Recommendation Warning!	NONE	NONE	NONE
Alternative UCL	YES	NONE	NONE

APPENDIX I (Continued)

SUBSURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Carbazole	Chrysene
Raw Statistics				
Number of Observations	55	55	55	55
Number of Missing Data	0	0	0	0
Number of Valid Observations	55	55	55	55
Number of Distinct Observations	24	24	21	23
Minimum	68	39	65	50
Maximum	1500	1200	250	1900
Mean	227.6272727	220.4818182	207.1363636	231.7727273
Standard Deviation	178.8154754	139.7487482	25.25067923	232.0217666
Variance	31974.97424	19529.71263	637.5968013	53834.10017
Coefficient of Variation	0.785562614	0.633833435	0.121903652	1.001074498
Skewness	6.889296287	6.529005952	-3.170870552	7.118530621
Too Few Distinct Observations?	NO	NO	NO	NO
Normal Statistics				
Lilliefors Test Statisitic	0.41385207	0.379992936	0.175952605	0.450510028
Lilliefors 5% Critical Value	0.119468216	0.119468216	0.119468216	0.119468216
Shapiro-Wilk Test Statisitic	N/A	N/A	N/A	N/A
Shapiro-Wilk 5% Critical Value	N/A	N/A	N/A	N/A
5% Normality Test Result	NOT NORMAL	NOT NORMAL	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	267.9793826	252.0179972	212.834518	284.1315502
Gamma Statistics				
k hat	5.275264068	5.904387661	43.66511913	3.955269495
k star (bias corrected)	4.999643604	5.594451364	41.29550657	3.751648735
Theta hat	43.14992952	37.3420295	4.743748965	58.59846656
Theta star	45.52869979	39.41080257	5.015954055	61.77889873
nu hat	580.2790475	649.4826427	4803.163104	435.0796445
nu star	549.9607964	615.38965	4542.505722	412.6813609
5% Approximate Chi Square Value	496.5584986	558.8315578	4386.837877	366.5806969
Adjusted Level of Significance	0.045636364	0.045636364	0.045636364	0.045636364
Adjusted Chi Square Value	495.2004363	557.3893687	4382.752638	365.4172552
Anderson-Darling Test Statistic	10.35840339	10.16500217	4.939534383	11.863051
Anderson-Darling 5% Critical Value	0.753332685	0.752938853	0.747799549	0.753711238
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.322433381	0.306382156	0.231704843	0.356324574
Kolmogrov-Smirnov 5% Critical Value	0.120276007	0.120232597	0.119596116	0.120436247
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	252.1074084	242.79629	214.4866401	260.9201338
95% Adjusted Gamma UCL	252.7988003	243.424501	214.6865668	261.7508701
Lognormal Statistics				
Minimum of log data	4.219507705	3.663561646	4.17438727	3.912023005
Maximum of log data	7.313220387	7.090076836	5.521460918	7.549609165
Mean of log data	5.329943579	5.308748822	5.321882846	5.314049905
Standard Deviation of log data	0.370806035	0.399183772	0.174772525	0.420378198
Variance of log data	0.137497116	0.159347684	0.030545435	0.176717829

APPENDIX I (Continued)

SUBSURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Carbazole	Chrysene
Lognormal Statistics (Cont)				
Lilliefors Test Statisitic	0.302435774	0.329466608	0.26148141	0.327569506
Lilliefors 5% Critical Value	0.119468216	0.119468216	0.119468216	0.119468216
Shapiro-Wilk Test Statisitic	N/A	N/A	N/A	N/A
Shapiro-Wilk 5% Critical Value	N/A	N/A	N/A	N/A
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL	NOT LOGNORMAL	NOT LOGNORMAL
MLE Mean	221.1170361	218.8579007	207.9204519	221.9403871
MLE Standard Deviation	84.89235545	90.96320461	36.61805232	97.57664909
MLE Coefficient of Variation	0.383924988	0.41562678	0.176115683	0.439652514
MLE Skewness	1.208364892	1.318678047	0.533809581	1.403939881
MLE Median	206.426327	202.0972105	204.7690678	203.1713892
MLE 80% Quantile	282.3859292	283.1733089	237.3570694	289.8227363
MLE 90% Quantile	332.4300074	337.5453829	256.329965	348.7083463
MLE 95% Quantile	379.9043485	389.7112682	272.9759372	405.6829893
MLE 99% Quantile	489.0371296	511.4502285	307.4780611	540.151466
MVU Estimate of Median	206.168455	201.8046538	204.712214	202.8452418
MVU Estimate of Mean	220.8229074	218.5172958	207.8618893	221.5544613
MVU Estimate of Standard Deviation	84.34569663	90.27858672	36.56785608	96.75673867
MVU Estimate of SE of Mean	11.35859669	12.1523518	4.930486209	13.01939186
95% H-UCL	242.0522155	241.4457495	216.530125	246.2975701
95% Chebyshev (MVUE) UCL	270.3338825	271.4881692	229.3533804	278.3046748
97.5% Chebyshev (MVUE) UCL	291.757321	294.4087085	238.6527658	302.8605374
99% Chebyshev (MVUE) UCL	333.8395175	339.4316695	256.9196077	351.0957748
Non-parametric Statisitics				
95% CLT UCL	267.2871179	251.4769751	212.7367627	283.2333031
95% Adjusted-CLT UCL	291.2201481	269.2030555	211.1812653	315.3208718
95% Modified-t UCL	271.7124516	254.7829075	212.5918918	289.1365625
95% Jackknife UCL	267.9793826	252.0179972	212.834518	284.1315502
95% Chebyshev (Mean, Sd) UCL	332.7267503	302.6196779	221.9775466	368.1444054
97.5% Chebyshev (Mean, Sd) UCL	378.2033782	338.1607954	228.3993384	427.1525395
99% Chebyshev (Mean, Sd) UCL	467.5334078	407.9744386	241.0137048	543.0625927
Bootstrap Statistics				
Number of Bootstrap Runs	2000	2000	2000	2000
95% Standard Bootstrap UCL	266.8626782	250.6009512	212.8619043	282.9283008
95% Bootstrap-t UCL	373.2144343	302.6817917	211.9173877	468.9755723
95% Hall's Bootstrap UCL	470.7025918	397.5516754	211.6248298	580.3355044
95% Percentile Bootstrap UCL	274.6727273	257.3181818	212.2727273	292.5818182
95% BCA Bootstrap UCL	304.2272727	276.7727273	211.5909091	328.0818182
Recommendations				
Human Inspection Recommended?	YES	YES	YES	YES
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC	NON-PARAMETRIC	NON-PARAMETRIC
1st Recommended UCL	267.9793826	252.0179972	212.834518	284.1315502
UCL Test	95% Student's-t UCL	95% Student's-t UCL	95% Student's-t UCL	95% Student's-t UCL
2nd Recommended UCL	271.7124516	254.7829075	212.5918918	289.1365625
3rd Recommended UCL				
Recommended UCL > Max Data Value				
Recommendation Warning!	NONE	NONE	NONE	NONE
Alternative UCL	NONE	NONE	NONE	NONE

APPENDIX I (Continued)

SUBSURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Arsenic
Raw Statistics			
Number of Observations	55	55	56
Number of Missing Data	0	0	0
Number of Valid Observations	55	55	56
Number of Distinct Observations	21	24	44
Minimum	84	28	0.15
Maximum	250	440	51
Mean	207.3	208.1363636	4.898973214
Standard Deviation	23.50386099	54.18131892	8.782819202
Variance	552.4314815	2935.61532	77.13791313
Coefficient of Variation	0.113380902	0.260316448	1.792787757
Skewness	-2.48881963	0.520427043	3.872763754
Too Few Distinct Observations?	NO	NO	NO
Normal Statistics			
Lilliefors Test Statisitic	0.15987545	0.259821793	0.316839703
Lilliefors 5% Critical Value	0.119468216	0.119468216	0.11839673
Shapiro-Wilk Test Statisitic	N/A	N/A	N/A
Shapiro-Wilk 5% Critical Value	N/A	N/A	N/A
5% Normality Test Result	NOT NORMAL	NOT NORMAL	NOT NORMAL
95% Student's-t UCL	212.6039614	220.3631048	6.862535111
Gamma Statistics			
k hat	58.27289175	9.499367404	0.81628403
k star (bias corrected)	55.10649159	8.993341303	0.78445929
Theta hat	3.557400256	21.91054991	6.001554651
Theta star	3.761807258	23.14338538	6.245031804
nu hat	6410.018092	1044.930414	91.42381132
nu star	6061.714075	989.2675433	87.85944047
5% Approximate Chi Square Value	5881.710621	917.242673	67.24620556
Adjusted Level of Significance	0.045636364	0.045636364	0.045714286
Adjusted Chi Square Value	5876.976315	915.3881111	66.77029726
Anderson-Darling Test Statistic	3.465524427	8.783905438	3.295232918
Anderson-Darling 5% Critical Value	0.747704238	0.750688396	0.789100596
Anderson-Darling 5% Gamma Test Result	NOT AD GAMMA	NOT AD GAMMA	NOT AD GAMMA
Kolmogrov-Smirnov Test Statistic	0.191553624	0.324366187	0.189417824
Kolmogrov-Smirnov 5% Critical Value	0.1195841	0.119984544	0.12335096
Kolmogrov-Smirnov 5% Gamma Test Result	NOT KS GAMMA	NOT KS GAMMA	NOT KS GAMMA
5% Gamma Test Result	NOT GAMMA	NOT GAMMA	NOT GAMMA
95% Approximate Gamma UCL	213.6441945	224.4799061	6.400674089
95% Adjusted Gamma UCL	213.8162995	224.9346989	6.446295182
Lognormal Statistics			
Minimum of log data	4.430816799	3.33220451	-1.897119985
Maximum of log data	5.521460918	6.086774727	3.931825633
Mean of log data	5.325562161	5.284635909	0.863878164
Standard Deviation of log data	0.145104026	0.401963681	1.114737771
Variance of log data	0.021055178	0.161574801	1.242640299

APPENDIX I (Continued)

SUBSURFACE SOIL STATISTICAL SUMMARY - ProUCL RESULTS
SWMUs 303 / 318
RCRA INVESTIGATION - CTO-0091
MCB, CAMP LEJEUNE, NORTH CAROLINA

Variable:	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Arsenic
Lognormal Statistics (Cont)			
Lilliefors Test Statisitic	0.207350423	0.353634305	0.106249435
Lilliefors 5% Critical Value	0.119468216	0.119468216	0.11839673
Shapiro-Wilk Test Statisitic	N/A	N/A	N/A
Shapiro-Wilk 5% Critical Value	N/A	N/A	N/A
5% Lognormality Test Result	NOT LOGNORMAL	NOT LOGNORMAL	LOGNORMAL
MLE Mean	207.6989654	213.8817538	4.415841046
MLE Standard Deviation	30.29729426	89.56523443	6.93265861
MLE Coefficient of Variation	0.145871185	0.41876052	1.569952029
MLE Skewness	0.440717462	1.329715561	8.579394368
MLE Median	205.5238654	197.2823417	2.372343212
MLE 80% Quantile	232.3337842	277.0769374	6.085029538
MLE 90% Quantile	247.6510836	330.6826783	9.937507156
MLE 95% Quantile	260.9315948	382.1702405	14.84438676
MLE 99% Quantile	288.0327319	502.5039156	31.71399989
MVU Estimate of Median	205.4845296	196.9927664	2.346162466
MVU Estimate of Mean	207.6588174	213.5439164	4.339434686
MVU Estimate of Standard Deviation	30.26877702	88.88112863	6.371014484
MVU Estimate of SE of Mean	4.08131384	11.96367855	0.786373691
95% H-UCL	214.7718869	236.1376519	6.343404124
95% Chebyshev (MVUE) UCL	225.448852	265.6923822	7.767158139
97.5% Chebyshev (MVUE) UCL	233.1466142	288.257065	9.250336815
99% Chebyshev (MVUE) UCL	248.2673774	332.5810149	12.16375412
Non-parametric Statisitics			
95% CLT UCL	212.5129688	220.1533477	6.829461569
95% Adjusted-CLT UCL	211.3765187	220.7011542	7.478465512
95% Modified-t UCL	212.4266982	220.4485515	6.963766611
95% Jackknife UCL	212.6039614	220.3631048	6.862535111
95% Chebyshev (Mean, Sd) UCL	221.1144839	239.9816405	10.01481058
97.5% Chebyshev (Mean, Sd) UCL	227.0920222	253.7611172	12.2284375
99% Chebyshev (Mean, Sd) UCL	238.8337385	280.828231	16.57667893
Bootstrap Statistics			
Number of Bootstrap Runs	2000	2000	2000
95% Standard Bootstrap UCL	212.40552	220.1621235	6.811885525
95% Bootstrap-t UCL	211.7858107	221.3019942	8.80179518
95% Hall's Bootstrap UCL	211.7199796	224.4435892	10.85051071
95% Percentile Bootstrap UCL	212.1181818	219.8454545	6.896741071
95% BCA Bootstrap UCL	211.3636364	220.8727273	7.508169643
Recommendations			
Human Inspection Recommended?	YES	YES	NO
Appropriate Distribution	NON-PARAMETRIC	NON-PARAMETRIC	LOGNORMAL
1st Recommended UCL	212.6039614	220.3631048	6.343404124
UCL Test	95% Student's-t UCL	95% Student's-t UCL	95% H-UCL
2nd Recommended UCL	212.4266982	220.4485515	
3rd Recommended UCL			
Recommended UCL > Max Data Value			
Recommendation Warning!	NONE	NONE	NONE
Alternative UCL	NONE	NONE	NONE

APPENDIX J

Human Health Risk Assessment Spread Sheets

ADULT MILITARY BASE PERSONNEL - CURRENT SCENARIO
ACCIDENTAL INGESTION OF SURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*CF*FI*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDo	mg/kg/d	Oral reference dose	CS	
C	mg/kg	Concentration of chemical in soil	CS	
IR-S	mg/day	Ingestion rate of soil	100	
CF	kg/mg	Conversion factor	1.00E-06	
FI	NA	Fraction of soil ingested from site	1	
EF	days/year	Exposure frequency	250	
ED	years	Exposure duration	4	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	1,460	

				Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.57	2.4E-02	3.0E-02	8.8E-08	2.1E-09	0.2%	1.5E-06	5.1E-05	0.3%
2-Hexanone (MBK)	1.14	NA	NA	6.4E-08	--	--	1.1E-06	--	--
Acetophenone	0.212	NA	NA	1.2E-08	--	--	2.1E-07	--	--
Benzo(a)anthracene	1.06	7.3E-01	NA	5.9E-08	4.3E-08	3.7%	1.0E-06	--	--
Benzo(a)pyrene	1.23	7.3E+00	NA	6.9E-08	5.0E-07	42.4%	1.2E-06	--	--
Benzo(b)fluoranthene	1.44	7.3E-01	NA	8.1E-08	5.9E-08	5.0%	1.4E-06	--	--
Benzo(k)fluoranthene	1.63	7.3E-02	NA	9.1E-08	6.7E-09	0.6%	1.6E-06	--	--
Carbazole	2.08	2.0E-02	NA	1.2E-07	2.3E-09	0.2%	2.0E-06	--	--
Chrysene	1.61	7.3E-03	NA	9.0E-08	6.6E-10	0.1%	1.6E-06	--	--
Dibenz(a,h)anthracene	0.639	7.3E+00	NA	3.6E-08	2.6E-07	22.0%	6.2E-07	--	--
Indeno(1,2,3-cd)pyrene	1.15	7.3E-01	NA	6.4E-08	4.7E-08	4.0%	1.1E-06	--	--
Arsenic	3.09	1.5E+00	3.0E-04	1.7E-07	2.6E-07	21.9%	3.0E-06	1.0E-02	50.7%
Cadmium	4.98	NA	5.0E-04	2.8E-07	--	--	4.9E-06	9.7E-03	49.0%
				Total ILCR:	1.2E-06	100.0%	Total HI:	2.0E-02	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT MILITARY BASE PERSONNEL - CURRENT SCENARIO
DERMAL CONTACT WITH SURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*AF*ABS*SA*EF*ED)/(BW*AT)
ILCR = CDI*CSFd
HQ = CDI/RfDd

Parameter	Units	Description	Adult	
DAD	mg/kg/d	Dermally absorbed dose	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	
C	mg/kg	Concentration of chemical in soil	CS	
CF	kg/mg	Conversion factor	1.00E-06	
AF	mg/cm2	Soil to skin adherence factor	0.2	
ABS	NA	Absorption fraction	(1)	
SA	cm2/day	Skin surface area available for contact	3,300	
EF	days/year	Exposure frequency	250	
ED	years	Exposure duration	4	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	1,460	

					Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	ABS	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.57	0.01	2.4E-02	3.0E-02	5.8E-09	1.4E-10	0.0%	1.0E-07	3.4E-06	0.1%
2-Hexanone (MBK)	1.14	0.01	NA	NA	4.2E-09	--	--	7.4E-08	--	--
Acetophenone	0.212	0.1	NA	NA	7.8E-09	--	--	1.4E-07	--	--
Benzo(a)anthracene	1.06	0.13	7.3E-01	NA	5.1E-08	3.7E-08	4.4%	8.9E-07	--	--
Benzo(a)pyrene	1.23	0.13	7.3E+00	NA	5.9E-08	4.3E-07	51.1%	1.0E-06	--	--
Benzo(b)fluoranthene	1.44	0.13	7.3E-01	NA	6.9E-08	5.0E-08	6.0%	1.2E-06	--	--
Benzo(k)fluoranthene	1.63	0.13	7.3E-02	NA	7.8E-08	5.7E-09	0.7%	1.4E-06	--	--
Carbazole	2.08	0.13	2.0E-02	NA	1.0E-07	2.0E-09	0.2%	1.7E-06	--	--
Chrysene	1.61	0.13	7.3E-03	NA	7.7E-08	5.6E-10	0.1%	1.4E-06	--	--
Dibenz(a,h)anthracene	0.639	0.13	7.3E+00	NA	3.1E-08	2.2E-07	26.6%	5.4E-07	--	--
Indeno(1,2,3-cd)pyrene	1.15	0.13	7.3E-01	NA	5.5E-08	4.0E-08	4.8%	9.7E-07	--	--
Arsenic	3.09	0.03	1.5E+00	3.0E-04	3.4E-08	5.1E-08	6.1%	6.0E-07	2.0E-03	60.8%
Cadmium	4.98	0.001	NA	2.5E-05	1.8E-09	--	--	3.2E-08	1.3E-03	39.1%
					Total ILCR:	8.4E-07	100.0%	Total HI:	3.3E-03	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT MILITARY BASE PERSONNEL - CURRENT SCENARIO
INHALATION OF FUGITIVE DUSTS EMANATING FROM SURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (Ca*RR*ET*EF*ED)/(BW*AT)
Where: Ca = C * (1/PEF)

ILCR = CDI*CSFi
HQ = CDI/RfDi

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFi	1/(mg/kg/d)	Inhalation cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDi	mg/kg/d	Inhalation reference dose	CS	
Ca	mg/m3	Concentration of chemical in air as fugitive dusts	CS	
C	mg/kg	Concentration of chemical in soil	CS	
VF	m3/kg	Volatilization Factor	CS	
PEF	m3/kg	Particulate emission factor	1.32E+09	
RR	m3/hour	Respiration rate	0.55	
ET	hours/day	Exposure time	8.0	
EF	days/year	Exposure frequency	250	
ED	years	Exposure duration	4	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	1,460	

						Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	VF (m^3/kg)	Ca (mg/m3)	CSFi 1/(mg/kg/d)	RfDi (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.57	12,950	1.21E-04	2.2E-02	2.3E-01	3.0E-07	6.6E-09	84.2%	5.2E-06	2.3E-05	100.0%
2-Hexanone (MBK)	1.14	NA	8.62E-10	NA	NA	2.1E-12	--	--	3.7E-11	--	--
Acetophenone	0.212	257,001	8.25E-07	NA	NA	2.0E-09	--	--	3.6E-08	--	--
Benzo(a)anthracene	1.06	18,122,159	5.94E-08	7.3E-01	NA	1.5E-10	1.1E-10	1.4%	2.6E-09	--	--
Benzo(a)pyrene	1.23	35,225,659	3.58E-08	7.3E+00	NA	8.8E-11	6.4E-10	8.2%	1.5E-09	--	--
Benzo(b)fluoranthene	1.44	21,155,386	6.92E-08	7.3E-01	NA	1.7E-10	1.2E-10	1.6%	3.0E-09	--	--
Benzo(k)fluoranthene	1.63	45,186,627	3.73E-08	7.3E-02	NA	9.2E-11	6.7E-12	0.1%	1.6E-09	--	--
Carbazole	2.08	3,478,720	6.00E-07	2.0E-02	NA	1.5E-09	3.0E-11	0.4%	2.6E-08	--	--
Chrysene	1.61	2,726,331	5.91E-07	7.3E-03	NA	1.5E-09	1.1E-11	0.1%	2.5E-08	--	--
Dibenz(a,h)anthracene	0.639	86,595,201	7.86E-09	7.3E+00	NA	1.9E-11	1.4E-10	1.8%	3.4E-10	--	--
Indeno(1,2,3-cd)pyrene	1.15	81,978,041	1.49E-08	7.3E-01	NA	3.7E-11	2.7E-11	0.3%	6.4E-10	--	--
Arsenic	3.09	NA	2.34E-09	1.5E+01	NA	5.8E-12	8.7E-11	1.1%	1.0E-10	--	--
Cadmium	4.98	NA	3.77E-09	6.3E+00	NA	9.3E-12	5.8E-11	0.7%	1.6E-10	--	--
						Total ILCR:	7.8E-09	100.0%	Total HI:	2.3E-05	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADOLESCENT TRESPASSERS - FUTURE SCENARIO
ACCIDENTAL INGESTION OF SURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*CF*FI*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adolescent	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDo	mg/kg/d	Oral reference dose	CS	
C	mg/kg	Concentration of chemical in soil	CS	
IR-S	mg/day	Ingestion rate of soil	100	
CF	kg/mg	Conversion factor	1.00E-06	
FI	NA	Fraction of soil ingested from site	1	
EF	days/year	Exposure frequency	52	
ED	years	Exposure duration	10	
BW	kg	Body weight	45	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	3,650	

				Adolescent					
				Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	2.4E-02	3.0E-02	5.7E-08	1.4E-09	0.1%	4.0E-07	1.3E-05	0.2%
2-Hexanone (MBK)	1.08	NA	NA	4.9E-08	--	--	3.4E-07	--	--
Naphthalene	33.4	NA	2.0E-02	1.5E-06	--	--	1.1E-05	5.3E-04	7.5%
Acetophenone	1.30	NA	NA	5.9E-08	--	--	4.1E-07	--	--
Benzo(a)anthracene	1.36	7.3E-01	NA	6.2E-08	4.5E-08	3.6%	4.3E-07	--	--
Benzo(a)pyrene	1.47	7.3E+00	NA	6.6E-08	4.9E-07	39.2%	4.7E-07	--	--
Benzo(b)fluoranthene	2.98	7.3E-01	NA	1.3E-07	9.8E-08	8.0%	9.4E-07	--	--
Benzo(k)fluoranthene	1.75	7.3E-02	NA	7.9E-08	5.8E-09	0.5%	5.6E-07	--	--
Carbazole	3.96	2.0E-02	NA	1.8E-07	3.6E-09	0.3%	1.3E-06	--	--
Chrysene	1.74	7.3E-03	NA	7.9E-08	5.7E-10	0.0%	5.5E-07	--	--
Dibenz(a,h)anthracene	1.12	7.3E+00	NA	5.0E-08	3.7E-07	29.8%	3.5E-07	--	--
Indeno(1,2,3-cd)pyrene	1.41	7.3E-01	NA	6.4E-08	4.7E-08	3.8%	4.5E-07	--	--
Naphthalene	14.1	NA	2.0E-02	6.4E-07	--	--	4.5E-06	2.2E-04	3.2%
Arsenic	2.69	1.5E+00	3.0E-04	1.2E-07	1.8E-07	14.8%	8.5E-07	2.8E-03	40.1%
Cadmium	5.49	NA	5.0E-04	2.5E-07	--	--	1.7E-06	3.5E-03	49.1%
				Total ILCR:	1.2E-06	100.0%	Total HI:	7.1E-03	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADOLESCENT TRESPASSERS - FUTURE SCENARIO
DERMAL CONTACT WITH SURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*AF*ABS*SA*EF*ED)/(BW*AT)
ILCR = CDI*CSFd
HQ = CDI/RfDd

Parameter	Units	Description	Adolescent	
DAD	mg/kg/d	Dermally absorbed dose	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	
C	mg/kg	Concentration of chemical in soil	CS	
CF	kg/mg	Conversion factor	1.00E-06	
AF	mg/cm2	Soil to skin adherence factor	0.2	
ABS	NA	Absorption fraction	(1)	
SA	cm2/day	Skin surface area available for contact	5,300	
EF	days/year	Exposure frequency	52	
ED	years	Exposure duration	10	
BW	kg	Body weight	45	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	3,650	

					Adolescent					
					Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	ABS	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	0.01	2.4E-02	3.0E-02	6.0E-09	1.4E-10	0.0%	4.2E-08	1.4E-06	0.1%
2-Hexanone (MBK)	1.08	0.01	NA	NA	5.2E-09	--	--	3.6E-08	--	--
Naphthalene	33.4	0.01	NA	2.0E-02	1.6E-07	--	--	1.1E-06	5.6E-05	3.3%
Acetophenone	1.30	0.1	NA	NA	6.2E-08	--	--	4.3E-07	--	--
Benzo(a)anthracene	1.36	0.13	7.3E-01	NA	8.5E-08	6.2E-08	4.1%	5.9E-07	--	--
Benzo(a)pyrene	1.47	0.13	7.3E+00	NA	9.2E-08	6.7E-07	44.3%	6.4E-07	--	--
Benzo(b)fluoranthene	2.98	0.13	7.3E-01	NA	1.9E-07	1.4E-07	9.0%	1.3E-06	--	--
Benzo(k)fluoranthene	1.75	0.13	7.3E-02	NA	1.1E-07	8.0E-09	0.5%	7.7E-07	--	--
Carbazole	3.96	0.13	2.0E-02	NA	2.5E-07	4.9E-09	0.3%	1.7E-06	--	--
Chrysene	1.74	0.13	7.3E-03	NA	1.1E-07	7.9E-10	0.1%	7.6E-07	--	--
Dibenz(a,h)anthracene	1.12	0.13	7.3E+00	NA	7.0E-08	5.1E-07	33.6%	4.9E-07	--	--
Indeno(1,2,3-cd)pyrene	1.41	0.13	7.3E-01	NA	8.8E-08	6.4E-08	4.2%	6.2E-07	--	--
Naphthalene	14.1	0.01	NA	2.0E-02	6.8E-08	--	--	4.7E-07	2.4E-05	1.4%
Arsenic	2.69	0.03	1.5E+00	3.0E-04	3.9E-08	5.8E-08	3.8%	2.7E-07	9.0E-04	52.5%
Cadmium	5.49	0.001	NA	2.5E-05	2.6E-09	--	--	1.8E-08	7.4E-04	42.8%
					Total ILCR:	1.5E-06	100.0%	Total HI:	1.7E-03	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADOLESCENT TRESPASSERS - FUTURE SCENARIO
INHALATION OF FUGITIVE DUSTS EMANATING FROM SURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (Ca*RR*ET*EF*ED)/(BW*AT)
Where: Ca = C * (1/PEF)

ILCR = CDI*CSFi
HQ = CDI/RfDi

Parameter	Units	Description	Adolescent	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFi	1/(mg/kg/d)	Inhalation cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDi	mg/kg/d	Inhalation reference dose	CS	
Ca	mg/m3	Concentration of chemical in air as fugitive dusts	CS	
C	mg/kg	Concentration of chemical in soil	CS	
VF	m3/kg	Volatilization Factor	CS	
PEF	m3/kg	Particulate emission factor	1.32E+09	
RR	m3/hour	Respiration rate	0.58	
ET	hours/day	Exposure time	4.0	
EF	days/year	Exposure frequency	52	
ED	years	Exposure duration	10	
BW	kg	Body weight	45	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	3,650	

						Adolescent					
						Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	VF (m^3/kg)	Ca (mg/m^3)	CSFi 1/(mg/kg/d)	RfDi (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	12,950	9.66E-05	2.2E-02	2.3E-01	1.0E-07	2.2E-09	75.9%	7.1E-07	3.1E-06	0.0%
2-Hexanone (MBK)	1.08	NA	8.19E-10	NA	NA	8.6E-13	--	--	6.0E-12	--	--
Naphthalene	33.4	43,256	7.71E-04	NA	8.6E-04	8.1E-07	--	--	5.7E-06	6.6E-03	70.2%
Acetophenone	1.30	257,001	5.04E-06	NA	NA	5.3E-09	--	--	3.7E-08	--	--
Benzo(a)anthracene	1.36	18,122,159	7.61E-08	7.3E-01	NA	8.0E-11	5.8E-11	2.0%	5.6E-10	--	--
Benzo(a)pyrene	1.47	35,225,659	4.28E-08	7.3E+00	NA	4.5E-11	3.3E-10	11.2%	3.2E-10	--	--
Benzo(b)fluoranthene	2.98	21,155,386	1.43E-07	7.3E-01	NA	1.5E-10	1.1E-10	3.7%	1.1E-09	--	--
Benzo(k)fluoranthene	1.75	45,186,627	4.01E-08	7.3E-02	NA	4.2E-11	3.1E-12	0.1%	3.0E-10	--	--
Carbazole	3.96	3,478,720	1.14E-06	2.0E-02	NA	1.2E-09	2.4E-11	0.8%	8.4E-09	--	--
Chrysene	1.74	2,726,331	6.40E-07	7.3E-03	NA	6.7E-10	4.9E-12	0.2%	4.7E-09	--	--
Dibenz(a,h)anthracene	1.12	86,595,201	1.37E-08	7.3E+00	NA	1.4E-11	1.1E-10	3.6%	1.0E-10	--	--
Indeno(1,2,3-cd)pyrene	1.41	81,978,041	1.83E-08	7.3E-01	NA	1.9E-11	1.4E-11	0.5%	1.3E-10	--	--
Naphthalene	14.1	43,256	3.26E-04	NA	8.6E-04	3.4E-07	--	--	2.4E-06	2.8E-03	29.7%
Arsenic	2.69	NA	2.04E-09	1.5E+01	NA	2.1E-12	3.2E-11	1.1%	1.5E-11	--	--
Cadmium	5.49	NA	4.16E-09	6.3E+00	NA	4.4E-12	2.8E-11	0.9%	3.1E-11	--	--
						Total ILCR:	2.9E-09	100.0%	Total HI:	9.4E-03	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
ACCIDENTAL INGESTION OF SURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*CF*FI*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	Young Child	
CDI	mg/kg/d	Chronic daily intake	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDo	mg/kg/d	Oral reference dose	CS	CS	
C	mg/kg	Concentration of chemical in soil	CS	CS	
IR-S	mg/day	Ingestion rate of soil	100	200	
CF	kg/mg	Conversion factor	1.00E-06	1.00E-06	
FI	NA	Fraction of soil ingested from site	1	1	
EF	days/year	Exposure frequency	350	350	
ED	years	Exposure duration	24	6	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	8,760	2,190	

				Adult						Young Child					
				Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	2.4E-02	3.0E-02	5.9E-07	1.4E-08	0.1%	1.7E-06	5.7E-05	0.2%	1.4E-06	3.3E-08	0.1%	1.6E-05	5.3E-04	0.2%
2-Hexanone (MBK)	1.08	NA	NA	5.1E-07	--	--	1.5E-06	--	--	1.2E-06	--	--	1.4E-05	--	--
Naphthalene	33.4	NA	2.0E-02	1.6E-05	--	--	4.6E-05	2.3E-03	7.5%	3.7E-05	--	--	4.3E-04	2.1E-02	7.5%
Acetophenone	1.30	NA	NA	6.1E-07	--	--	1.8E-06	--	--	1.4E-06	--	--	1.7E-05	--	--
Benzo(a)anthracene	1.36	7.3E-01	NA	6.4E-07	4.7E-07	3.6%	1.9E-06	--	--	1.5E-06	1.1E-06	3.6%	1.7E-05	--	--
Benzo(a)pyrene	1.47	7.3E+00	NA	6.9E-07	5.0E-06	39.2%	2.0E-06	--	--	1.6E-06	1.2E-05	39.2%	1.9E-05	--	--
Benzo(b)fluoranthene	2.98	7.3E-01	NA	1.4E-06	1.0E-06	8.0%	4.1E-06	--	--	3.3E-06	2.4E-06	8.0%	3.8E-05	--	--
Benzo(k)fluoranthene	1.75	7.3E-02	NA	8.2E-07	6.0E-08	0.5%	2.4E-06	--	--	1.9E-06	1.4E-07	0.5%	2.2E-05	--	--
Carbazole	3.96	2.0E-02	NA	1.9E-06	3.7E-08	0.3%	5.4E-06	--	--	4.3E-06	8.7E-08	0.3%	5.1E-05	--	--
Chrysene	1.74	7.3E-03	NA	8.2E-07	6.0E-09	0.0%	2.4E-06	--	--	1.9E-06	1.4E-08	0.0%	2.2E-05	--	--
Dibenz(a,h)anthracene	1.12	7.3E+00	NA	5.2E-07	3.8E-06	29.8%	1.5E-06	--	--	1.2E-06	8.9E-06	29.8%	1.4E-05	--	--
Indeno(1,2,3-cd)pyrene	1.41	7.3E-01	NA	6.6E-07	4.8E-07	3.8%	1.9E-06	--	--	1.5E-06	1.1E-06	3.8%	1.8E-05	--	--
Naphthalene	14.1	NA	2.0E-02	6.6E-06	--	--	1.9E-05	9.7E-04	3.2%	1.5E-05	--	--	1.8E-04	9.0E-03	3.2%
Arsenic	2.69	1.5E+00	3.0E-04	1.3E-06	1.9E-06	14.8%	3.7E-06	1.2E-02	40.1%	2.9E-06	4.4E-06	14.8%	3.4E-05	1.1E-01	40.1%
Cadmium	5.49	NA	5.0E-04	2.6E-06	--	--	7.5E-06	1.5E-02	49.1%	6.0E-06	--	--	7.0E-05	1.4E-01	49.1%
				Total ILCR:	1.3E-05	100.0%	Total HI:	3.1E-02	100.0%	Total ILCR:	3.0E-05	100.0%	Total HI:	2.9E-01	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
DERMAL CONTACT WITH SURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*AF*ABS*SA*EF*ED)/(BW*AT)
ILCR = CDI*CSFd
HQ = CDI/RfDd

Parameter	Units	Description	Adult	Young Child	
DAD	mg/kg/d	Dermally absorbed dose	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	CS	
C	mg/kg	Concentration of chemical in soil	CS	CS	
CF	kg/mg	Conversion factor	1.00E-06	1.00E-06	
AF	mg/cm2	Soil to skin adherence factor	0.07	0.2	
ABS	NA	Absorption fraction	(1)	(1)	
SA	cm2/day	Skin surface area available for contact	5,700	2,800	
EF	days/year	Exposure frequency	350	350	
ED	years	Exposure duration	24	6	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	8,760	2,190	

					Adult						Young Child					
					Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	ABS	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	0.01	2.4E-02	3.0E-02	2.3E-08	5.6E-10	0.0%	6.8E-08	2.3E-06	0.1%	3.8E-08	9.2E-10	0.0%	4.5E-07	1.5E-05	0.1%
2-Hexanone (MBK)	1.08	0.01	NA	NA	2.0E-08	--	--	5.9E-08	--	--	3.3E-08	--	--	3.9E-07	--	--
Naphthalene	33.4	0.01	NA	2.0E-02	6.3E-07	--	--	1.8E-06	9.1E-05	3.3%	1.0E-06	--	--	1.2E-05	6.0E-04	3.3%
Acetophenone	1.30	0.1	NA	NA	2.4E-07	--	--	7.1E-07	--	--	4.0E-07	--	--	4.6E-06	--	--
Benzo(a)anthracene	1.36	0.13	7.3E-01	NA	3.3E-07	2.4E-07	4.1%	9.7E-07	--	--	5.4E-07	4.0E-07	4.1%	6.3E-06	--	--
Benzo(a)pyrene	1.47	0.13	7.3E+00	NA	3.6E-07	2.6E-06	44.3%	1.0E-06	--	--	5.9E-07	4.3E-06	44.3%	6.8E-06	--	--
Benzo(b)fluoranthene	2.98	0.13	7.3E-01	NA	7.3E-07	5.3E-07	9.0%	2.1E-06	--	--	1.2E-06	8.7E-07	9.0%	1.4E-05	--	--
Benzo(k)fluoranthene	1.75	0.13	7.3E-02	NA	4.3E-07	3.1E-08	0.5%	1.2E-06	--	--	7.0E-07	5.1E-08	0.5%	8.2E-06	--	--
Carbazole	3.96	0.13	2.0E-02	NA	9.6E-07	1.9E-08	0.3%	2.8E-06	--	--	1.6E-06	3.2E-08	0.3%	1.8E-05	--	--
Chrysene	1.74	0.13	7.3E-03	NA	4.2E-07	3.1E-09	0.1%	1.2E-06	--	--	6.9E-07	5.1E-09	0.1%	8.1E-06	--	--
Dibenz(a,h)anthracene	1.12	0.13	7.3E+00	NA	2.7E-07	2.0E-06	33.6%	7.9E-07	--	--	4.4E-07	3.2E-06	33.6%	5.2E-06	--	--
Indeno(1,2,3-cd)pyrene	1.41	0.13	7.3E-01	NA	3.4E-07	2.5E-07	4.2%	1.0E-06	--	--	5.6E-07	4.1E-07	4.2%	6.6E-06	--	--
Naphthalene	14.1	0.01	NA	2.0E-02	2.6E-07	--	--	7.7E-07	3.9E-05	1.4%	4.3E-07	--	--	5.1E-06	2.5E-04	1.4%
Arsenic	2.69	0.03	1.5E+00	3.0E-04	1.5E-07	2.3E-07	3.8%	4.4E-07	1.5E-03	52.5%	2.5E-07	3.7E-07	3.8%	2.9E-06	9.6E-03	52.5%
Cadmium	5.49	0.001	NA	2.5E-05	1.0E-08	--	--	3.0E-08	1.2E-03	42.8%	1.7E-08	--	--	2.0E-07	7.9E-03	42.8%
					Total ILCR:	5.9E-06	100.0%	Total HI:	2.8E-03	100.0%	Total ILCR:	9.7E-06	100.0%	Total HI:	1.8E-02	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
INHALATION OF FUGITIVE DUSTS EMANATING FROM SURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (Ca*RR*ET*EF*ED)/(BW*AT)
Where: Ca = C * (1/PEF)

ILCR = CDI*CSFi
HQ = CDI/RfDi

Parameter	Units	Description	Adult	Young Child	
CDI	mg/kg/d	Chronic daily intake	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFi	1/(mg/kg/d)	Inhalation cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDi	mg/kg/d	Inhalation reference dose	CS	CS	
Ca	mg/m3	Concentration of chemical in air as fugitive dusts	CS	CS	
C	mg/kg	Concentration of chemical in soil	CS	CS	
VF	m3/kg	Volatilization Factor	CS	CS	
PEF	m3/kg	Particulate emission factor	1.32E+09	1.32E+09	
RR	m3/hour	Respiration rate	0.55	0.31	
ET	hours/day	Exposure time	1.5	5.6	
EF	days/year	Exposure frequency	350	350	
ED	years	Exposure duration	24	6	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	8,760	2,190	

						Adult						Young Child					
						Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	VF (m^3/kg)	Ca (mg/m3)	CSFi 1/(mg/kg/d)	RfDi (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	12,950	9.66E-05	2.2E-02	2.3E-01	3.7E-07	8.2E-09	75.9%	1.1E-06	4.7E-06	0.0%	9.1E-07	2.0E-08	75.9%	1.1E-05	4.6E-05	0.0%
2-Hexanone (MBK)	1.08	NA	8.19E-10	NA	NA	3.2E-12	--	--	9.3E-12	--	--	7.7E-12	--	--	9.0E-11	--	--
Naphthalene	33.4	43,256	7.71E-04	NA	8.6E-04	3.0E-06	--	--	8.7E-06	1.0E-02	70.2%	7.3E-06	--	--	8.5E-05	9.9E-02	70.2%
Acetophenone	1.30	257,001	5.04E-06	NA	NA	2.0E-08	--	--	5.7E-08	--	--	4.7E-08	--	--	5.5E-07	--	--
Benzo(a)anthracene	1.36	18,122,159	7.61E-08	7.3E-01	NA	2.9E-10	2.2E-10	2.0%	8.6E-10	--	--	7.2E-10	5.2E-10	2.0%	8.3E-09	--	--
Benzo(a)pyrene	1.47	35,225,659	4.28E-08	7.3E+00	NA	1.7E-10	1.2E-09	11.2%	4.8E-10	--	--	4.0E-10	2.9E-09	11.2%	4.7E-09	--	--
Benzo(b)fluoranthene	2.98	21,155,386	1.43E-07	7.3E-01	NA	5.6E-10	4.1E-10	3.7%	1.6E-09	--	--	1.3E-09	9.8E-10	3.7%	1.6E-08	--	--
Benzo(k)fluoranthene	1.75	45,186,627	4.01E-08	7.3E-02	NA	1.6E-10	1.1E-11	0.1%	4.5E-10	--	--	3.8E-10	2.8E-11	0.1%	4.4E-09	--	--
Carbazole	3.96	3,478,720	1.14E-06	2.0E-02	NA	4.4E-09	8.8E-11	0.8%	1.3E-08	--	--	1.1E-08	2.1E-10	0.8%	1.3E-07	--	--
Chrysene	1.74	2,726,331	6.40E-07	7.3E-03	NA	2.5E-09	1.8E-11	0.2%	7.2E-09	--	--	6.0E-09	4.4E-11	0.2%	7.0E-08	--	--
Dibenz(a,h)anthracene	1.12	86,595,201	1.37E-08	7.3E+00	NA	5.3E-11	3.9E-10	3.6%	1.6E-10	--	--	1.3E-10	9.4E-10	3.6%	1.5E-09	--	--
Indeno(1,2,3-cd)pyrene	1.41	81,978,041	1.83E-08	7.3E-01	NA	7.1E-11	5.2E-11	0.5%	2.1E-10	--	--	1.7E-10	1.3E-10	0.5%	2.0E-09	--	--
Naphthalene	14.1	43,256	3.26E-04	NA	8.6E-04	1.3E-06	--	--	3.7E-06	4.3E-03	29.7%	3.1E-06	--	--	3.6E-05	4.2E-02	29.7%
Arsenic	2.69	NA	2.04E-09	1.5E+01	NA	7.9E-12	1.2E-10	1.1%	2.3E-11	--	--	1.9E-11	2.9E-10	1.1%	2.2E-10	--	--
Cadmium	5.49	NA	4.16E-09	6.3E+00	NA	1.6E-11	1.0E-10	0.9%	4.7E-11	--	--	3.9E-11	2.5E-10	0.9%	4.6E-10	--	--
						Total ILCR:	1.1E-08	100.0%	Total HI:	1.4E-02	100.0%	Total ILCR:	2.6E-08	100.0%	Total HI:	1.4E-01	100.0%

NOTES:
-- = Not applicable.
NA = Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
ACCIDENTAL INGESTION OF SUBSURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*CF*FI*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	Young Child	
CDI	mg/kg/d	Chronic daily intake	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDo	mg/kg/d	Oral reference dose	CS	CS	
C	mg/kg	Concentration of chemical in soil	CS	CS	
IR-S	mg/day	Ingestion rate of soil	100	200	
CF	kg/mg	Conversion factor	1.00E-06	1.00E-06	
FI	NA	Fraction of soil ingested from site	1	1	
EF	days/year	Exposure frequency	350	350	
ED	years	Exposure duration	24	6	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	8,760	2,190	

				Adult						Young Child					
				Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
2-Hexanone (MBK)	0.323	NA	NA	1.5E-07	--	--	4.4E-07	--	--	3.5E-07	--	--	4.1E-06	--	--
Benzo(a)anthracene	0.249	7.3E-01	NA	1.2E-07	8.5E-08	1.4%	3.4E-07	--	--	2.7E-07	2.0E-07	1.4%	3.2E-06	--	--
Benzo(a)pyrene	0.234	7.3E+00	NA	1.1E-07	8.0E-07	12.8%	3.2E-07	--	--	2.6E-07	1.9E-06	12.8%	3.0E-06	--	--
Benzo(b)fluoranthene	0.268	7.3E-01	NA	1.3E-07	9.2E-08	1.5%	3.7E-07	--	--	2.9E-07	2.1E-07	1.5%	3.4E-06	--	--
Benzo(k)fluoranthene	0.252	7.3E-02	NA	1.2E-07	8.6E-09	0.1%	3.5E-07	--	--	2.8E-07	2.0E-08	0.1%	3.2E-06	--	--
Carbazole	0.213	2.0E-02	NA	1.0E-07	2.0E-09	0.0%	2.9E-07	--	--	2.3E-07	4.7E-09	0.0%	2.7E-06	--	--
Chrysene	0.284	7.3E-03	NA	1.3E-07	9.7E-10	0.0%	3.9E-07	--	--	3.1E-07	2.3E-09	0.0%	3.6E-06	--	--
Dibenz(a,h)anthracene	0.213	7.3E+00	NA	1.0E-07	7.3E-07	11.6%	2.9E-07	--	--	2.3E-07	1.7E-06	11.6%	2.7E-06	--	--
Indeno(1,2,3-cd)pyrene	0.220	7.3E-01	NA	1.0E-07	7.6E-08	1.2%	3.0E-07	--	--	2.4E-07	1.8E-07	1.2%	2.8E-06	--	--
Arsenic	6.34	1.5E+00	3.0E-04	3.0E-06	4.5E-06	71.4%	8.7E-06	2.9E-02	100.0%	7.0E-06	1.0E-05	71.4%	8.1E-05	2.7E-01	100.0%
				Total ILCR:	6.3E-06	100.0%	Total HI:	2.9E-02	100.0%	Total ILCR:	1.5E-05	100.0%	Total HI:	2.7E-01	100.0%

NOTES:
-- = Not applicable.
NA = Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
DERMAL CONTACT WITH SUBSURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*AF*ABS*SA*EF*ED)/(BW*AT)
ILCR = CDI*CSFd
HQ = CDI/RfDd

Parameter	Units	Description	Adult	Young Child	
DAD	mg/kg/d	Dermally absorbed dose	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	CS	
C	mg/kg	Concentration of chemical in soil	CS	CS	
CF	kg/mg	Conversion factor	1.00E-06	1.00E-06	
AF	mg/cm2	Soil to skin adherence factor	0.07	0.2	
ABS	NA	Absorption fraction	(1)	(1)	
SA	cm2/day	Skin surface area available for contact	5,700	2,800	
EF	days/year	Exposure frequency	350	350	
ED	years	Exposure duration	24	6	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	8,760	2,190	

					Adult						Young Child					
					Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	ABS	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
2-Hexanone (MBK)	0.323	0.01	NA	NA	6.1E-09	--	--	1.8E-08	--	--	9.9E-09	--	--	1.2E-07	--	--
Benzo(a)anthracene	0.249	0.13	7.3E-01	NA	6.1E-08	4.4E-08	3.0%	1.8E-07	--	--	9.9E-08	7.3E-08	3.0%	1.2E-06	--	--
Benzo(a)pyrene	0.234	0.13	7.3E+00	NA	5.7E-08	4.2E-07	28.3%	1.7E-07	--	--	9.3E-08	6.8E-07	28.3%	1.1E-06	--	--
Benzo(b)fluoranthene	0.268	0.13	7.3E-01	NA	6.5E-08	4.8E-08	3.3%	1.9E-07	--	--	1.1E-07	7.8E-08	3.3%	1.2E-06	--	--
Benzo(k)fluoranthene	0.252	0.13	7.3E-02	NA	6.1E-08	4.5E-09	0.3%	1.8E-07	--	--	1.0E-07	7.3E-09	0.3%	1.2E-06	--	--
Carbazole	0.213	0.13	2.0E-02	NA	5.2E-08	1.0E-09	0.1%	1.5E-07	--	--	8.5E-08	1.7E-09	0.1%	9.9E-07	--	--
Chrysene	0.284	0.13	7.3E-03	NA	6.9E-08	5.1E-10	0.0%	2.0E-07	--	--	1.1E-07	8.3E-10	0.0%	1.3E-06	--	--
Dibenz(a,h)anthracene	0.213	0.13	7.3E+00	NA	5.2E-08	3.8E-07	25.8%	1.5E-07	--	--	8.5E-08	6.2E-07	25.8%	9.9E-07	--	--
Indeno(1,2,3-cd)pyrene	0.220	0.13	7.3E-01	NA	5.4E-08	3.9E-08	2.7%	1.6E-07	--	--	8.8E-08	6.4E-08	2.7%	1.0E-06	--	--
Arsenic	6.34	0.03	1.5E+00	3.0E-04	3.6E-07	5.3E-07	36.5%	1.0E-06	3.5E-03	100.0%	5.8E-07	8.8E-07	36.5%	6.8E-06	2.3E-02	100.0%
					Total ILCR:	1.5E-06	100.0%	Total HI:	3.5E-03	100.0%	Total ILCR:	2.4E-06	100.0%	Total HI:	2.3E-02	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
INHALATION OF FUGITIVE DUSTS EMANATING FROM SUBSURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (Ca*RR*ET*EF*ED)/(BW*AT)
Where: Ca = C * (1/PEF)

ILCR = CDI*CSFi
HQ = CDI/RfDi

Parameter	Units	Description	Adult	Young Child	
CDI	mg/kg/d	Chronic daily intake	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFi	1/(mg/kg/d)	Inhalation cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDi	mg/kg/d	Inhalation reference dose	CS	CS	
Ca	mg/m3	Concentration of chemical in air as fugitive dusts	CS	CS	
C	mg/kg	Concentration of chemical in soil	CS	CS	
VF	m3/kg	Volatilization Factor	CS	CS	
PEF	m3/kg	Particulate emission factor	1.32E+09	1.32E+09	
RR	m3/hour	Respiration rate	0.55	0.31	
ET	hours/day	Exposure time	1.5	5.6	
EF	days/year	Exposure frequency	350	350	
ED	years	Exposure duration	24	6	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	8,760	2,190	

						Adult						Young Child					
						Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	VF (m^3/kg)	Ca (mg/m3)	CSFi 1/(mg/kg/d)	RfDi (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
2-Hexanone (MBK)	0.323	NA	2.45E-10	NA	NA	9.5E-13	--	--	2.8E-12	--	--	2.3E-12	--	--	2.7E-11	--	--
Benzo(a)anthracene	0.249	18,122,159	1.39E-08	7.3E-01	NA	5.4E-11	3.9E-11	6.2%	1.6E-10	--	--	1.3E-10	9.6E-11	6.2%	1.5E-09	--	--
Benzo(a)pyrene	0.234	35,225,659	6.81E-09	7.3E+00	NA	2.6E-11	1.9E-10	30.1%	7.7E-11	--	--	6.4E-11	4.7E-10	30.1%	7.5E-10	--	--
Benzo(b)fluoranthene	0.268	21,155,386	1.29E-08	7.3E-01	NA	5.0E-11	3.6E-11	5.7%	1.5E-10	--	--	1.2E-10	8.8E-11	5.7%	1.4E-09	--	--
Benzo(k)fluoranthene	0.252	45,186,627	5.77E-09	7.3E-02	NA	2.2E-11	1.6E-12	0.3%	6.5E-11	--	--	5.4E-11	4.0E-12	0.3%	6.3E-10	--	--
Carbazole	0.213	3,478,720	6.13E-08	2.0E-02	NA	2.4E-10	4.8E-12	0.7%	6.9E-10	--	--	5.8E-10	1.2E-11	0.7%	6.7E-09	--	--
Chrysene	0.284	2,726,331	1.04E-07	7.3E-03	NA	4.0E-10	3.0E-12	0.5%	1.2E-09	--	--	9.8E-10	7.2E-12	0.5%	1.1E-08	--	--
Dibenz(a,h)anthracene	0.213	86,595,201	2.62E-09	7.3E+00	NA	1.0E-11	7.4E-11	11.6%	3.0E-11	--	--	2.5E-11	1.8E-10	11.6%	2.9E-10	--	--
Indeno(1,2,3-cd)pyrene	0.220	81,978,041	2.86E-09	7.3E-01	NA	1.1E-11	8.1E-12	1.3%	3.2E-11	--	--	2.7E-11	2.0E-11	1.3%	3.1E-10	--	--
Arsenic	6.34	NA	4.81E-09	1.5E+01	NA	1.9E-11	2.8E-10	43.8%	5.4E-11	--	--	4.5E-11	6.8E-10	43.8%	5.3E-10	--	--
						Total ILCR:	6.4E-10	100.0%	Total HI:	--	--	Total ILCR:	1.6E-09	100.0%	Total HI:	--	--

NOTES:
-- = Not applicable.
NA - Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
INGESTION OF GROUNDWATER AS DRINKING WATER - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	Young Child	
CDI	mg/kg/d	Chronic daily intake	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDo	mg/kg/d	Oral reference dose	CS	CS	
C	mg/L	Concentration of chemical in water	CS	CS	
IR-W	L/day	Ingestion rate of water	2	1	
EF	days/year	Exposure frequency	350	350	
ED	years	Exposure duration	24	6	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	8,760	2,190	

				Adult						Young Child					
				Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,1-Dichloroethene	0.00368	NA	5.0E-02	3.5E-05	--	--	1.0E-04	2.0E-03	0.0%	2.0E-05	--	--	2.3E-04	4.7E-03	0.0%
1,2,3-Trichlorobenzene	0.0024	NA	1.0E-02 (1)	2.3E-05	--	--	6.6E-05	6.6E-03	0.0%	1.3E-05	--	--	1.5E-04	1.5E-02	0.0%
1,2,4-Trimethylbenzene	0.00374	NA	5.0E-02	3.5E-05	--	--	1.0E-04	2.1E-03	0.0%	2.1E-05	--	--	2.4E-04	4.8E-03	0.0%
1,2-Dichloroethene (cis)	0.120	NA	1.0E-02	1.1E-03	--	--	3.3E-03	3.3E-01	1.1%	6.6E-04	--	--	7.7E-03	7.7E-01	1.1%
1,2-Dichloroethene (total)	0.175	NA	1.0E-02 (2)	1.6E-03	--	--	4.8E-03	4.8E-01	1.5%	9.6E-04	--	--	1.1E-02	1.1E+00	1.5%
1,2-Dichloroethene (trans)	0.00309	NA	2.0E-02	2.9E-05	--	--	8.5E-05	4.2E-03	0.0%	1.7E-05	--	--	2.0E-04	9.9E-03	0.0%
1,2-Dichloropropane	0.0003	6.8E-02	1.1E-03	2.8E-06	1.9E-07	0.0%	8.2E-06	7.5E-03	0.0%	1.6E-06	1.1E-07	0.0%	1.9E-05	1.7E-02	0.0%
1,3,5-Trimethylbenzene	0.00273	NA	5.0E-02	2.6E-05	--	--	7.5E-05	1.5E-03	0.0%	1.5E-05	--	--	1.7E-04	3.5E-03	0.0%
1,4-Dichlorobenzene (p-)	0.002	2.4E-02	3.0E-02	1.9E-05	4.5E-07	0.0%	5.5E-05	1.8E-03	0.0%	1.1E-05	2.6E-07	0.0%	1.3E-04	4.3E-03	0.0%
2-Chlorotoluene	0.00225	NA	2.0E-02	2.1E-05	--	--	6.2E-05	3.1E-03	0.0%	1.2E-05	--	--	1.4E-04	7.2E-03	0.0%
4-Isopropyltoluene	0.00547	NA	NA	5.1E-05	--	--	1.5E-04	--	--	3.0E-05	--	--	3.5E-04	--	--
Benzene	0.00982	5.5E-02	4.0E-03	9.2E-05	5.1E-06	0.4%	2.7E-04	6.7E-02	0.2%	5.4E-05	3.0E-06	0.4%	6.3E-04	1.6E-01	0.2%
Bromodichloromethane	0.002	6.2E-02	2.0E-02	1.9E-05	1.2E-06	0.1%	5.5E-05	2.7E-03	0.0%	1.1E-05	6.8E-07	0.1%	1.3E-04	6.4E-03	0.0%
Bromoform	0.00277	7.9E-03	2.0E-02	2.6E-05	2.1E-07	0.0%	7.6E-05	3.8E-03	0.0%	1.5E-05	1.2E-07	0.0%	1.8E-04	8.8E-03	0.0%
Chloroform	0.00044	NA	1.0E-02	4.1E-06	--	--	1.2E-05	1.2E-03	0.0%	2.4E-06	--	--	2.8E-05	2.8E-03	0.0%
Ethylbenzene	0.00707	NA	1.0E-01	6.6E-05	--	--	1.9E-04	1.9E-03	0.0%	3.9E-05	--	--	4.5E-04	4.5E-03	0.0%
Isopropylbenzene (Cumene)	0.00433	NA	1.0E-01	4.1E-05	--	--	1.2E-04	1.2E-03	0.0%	2.4E-05	--	--	2.8E-04	2.8E-03	0.0%
Naphthalene	0.165	NA	2.0E-02	1.5E-03	--	--	4.5E-03	2.3E-01	0.7%	9.0E-04	--	--	1.1E-02	5.3E-01	0.7%
n-Butylbenzene	0.00420	NA	4.0E-02	3.9E-05	--	--	1.2E-04	2.9E-03	0.0%	2.3E-05	--	--	2.7E-04	6.7E-03	0.0%
Tetrachloroethene (PCE)	0.00264	5.4E-01	1.0E-02	2.5E-05	1.3E-05	0.9%	7.2E-05	7.2E-03	0.0%	1.4E-05	7.8E-06	0.9%	1.7E-04	1.7E-02	0.0%
Toluene	0.0111	NA	2.0E-01	1.0E-04	--	--	3.1E-04	1.5E-03	0.0%	6.1E-05	--	--	7.1E-04	3.6E-03	0.0%
Trichloroethene (TCE)	0.318	4.0E-01	3.0E-04	3.0E-03	1.2E-03	83.1%	8.7E-03	2.9E+01	92.8%	1.7E-03	7.0E-04	83.1%	2.0E-02	6.8E+01	92.8%
Vinyl Chloride	0.0156	1.5E+00	3.0E-03	1.5E-04	2.2E-04	15.3%	4.3E-04	1.4E-01	0.5%	8.6E-05	1.3E-04	15.3%	1.0E-03	3.3E-01	0.5%
Xylene, m/p-	0.0101	NA	2.0E-01 (3)	9.4E-05	--	--	2.8E-04	1.4E-03	0.0%	5.5E-05	--	--	6.4E-04	3.2E-03	0.0%
Xylene, o-	0.00534	NA	2.0E-01 (3)	5.0E-05	--	--	1.5E-04	7.3E-04	0.0%	2.9E-05	--	--	3.4E-04	1.7E-03	0.0%
Xylenes, total	0.00956	NA	2.0E-01	9.0E-05	--	--	2.6E-04	1.3E-03	0.0%	5.2E-05	--	--	6.1E-04	3.1E-03	0.0%
1,1'-Biphenyl	0.00887	NA	5.0E-02	8.3E-05	--	--	2.4E-04	4.9E-03	0.0%	4.9E-05	--	--	5.7E-04	1.1E-02	0.0%
2,4-Dimethylphenol	0.06379	NA	2.0E-02	6.0E-04	--	--	1.7E-03	8.7E-02	0.3%	3.5E-04	--	--	4.1E-03	2.0E-01	0.3%
2-Methylnaphthalene	0.0457	NA	4.0E-03	4.3E-04	--	--	1.3E-03	3.1E-01	1.0%	2.5E-04	--	--	2.9E-03	7.3E-01	1.0%
2-Methylphenol (o-Cresol)	0.0266	NA	5.0E-02	2.5E-04	--	--	7.3E-04	1.5E-02	0.0%	1.5E-04	--	--	1.7E-03	3.4E-02	0.0%
4-Methylphenol (p-Cresol)	0.0181	NA	5.0E-03	1.7E-04	--	--	5.0E-04	9.9E-02	0.3%	9.9E-05	--	--	1.2E-03	2.3E-01	0.3%
Acenaphthene	0.0308	NA	6.0E-02	2.9E-04	--	--	8.4E-04	1.4E-02	0.0%	1.7E-04	--	--	2.0E-03	3.3E-02	0.0%
Bis(2-ethylhexyl) Phthalate (BEHP)	0.0055	1.4E-02	2.0E-02	5.2E-05	7.2E-07	0.1%	1.5E-04	7.5E-03	0.0%	3.0E-05	4.2E-07	0.1%	3.5E-04	1.8E-02	0.0%
Carbazole	0.0101	2.0E-02	NA	9.5E-05	1.9E-06	0.1%	2.8E-04	--	--	5.5E-05	1.1E-06	0.1%	6.4E-04	--	--
Dibenzofuran	0.0131	NA	2.0E-03	1.2E-04	--	--	3.6E-04	1.8E-01	0.6%	7.2E-05	--	--	8.4E-04	4.2E-01	0.6%
Fluorene	0.0107	NA	4.0E-02	1.0E-04	--	--	2.9E-04	7.3E-03	0.0%	5.8E-05	--	--	6.8E-04	1.7E-02	0.0%
Naphthalene	0.165	NA	2.0E-02	1.5E-03	--	--	4.5E-03	2.3E-01	0.7%	9.0E-04	--	--	1.1E-02	5.3E-01	0.7%
				Total ILCR:	1.4E-03	100.0%	Total HI:	3.1E+01	100.0%	Total ILCR:	8.4E-04	100.0%	Total HI:	7.3E+01	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

(1) Value for 1,2,4-Trichlorobenzene
(2) Value for 1,2-Dichloroethene (cis)
(3) Value for Xylenes (total)

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
DERMAL CONTACT WITH GROUNDWATER - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*Kp*SA*EF*ED*ET)/(BW*AT) Inorganics ILCR = CDI*CSFo Adj CSF Adj = CSF/AD
DAD (mg/kg/d) = (C*CF*(2*Kp*SQRT(6*tau*ET/pi))*SA*EF*ED)/(BW*AT) ET <= t* (Organics) HQ = CDI/RfDo Adj RfD Adj = RfD*AD
DAD (mg/kg/d) = (C*CF*(Kp*(ET/(1+B)+2*tau*((1+3*B)/(1+B)))*SA*EF*ED)/(BW*AT) ET > t* (Benzene & Vinyl Chloride)

Parameter	Units	Description	Adult	Young Child	
DAD	mg/kg/d	Dermally absorbed dose	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	CS	
SA	cm2	Skin surface area available for contact	18,000	6,600	
EF	days/year	Exposure frequency	350	350	
ED	years	Exposure duration	24	6	
ET	hours/day	Exposure time	0.58	1.00	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	8,760	2,190	
C	mg/L	Concentration of chemical in water	CS	CS	
CF	L/cm3	Conversion factor	1.00E-03	1.00E-03	
Kp	cm/hour	Dermal permeability coefficient	CS	CS	
AD	NA	Adjustment for absorbed dose	CS	CS	

								Adult						Young Child					
								Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	Kp (cm/hour)	tau (hours)	t* (hours)	B	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
1,1-Dichloroethene	0.00368	1.20E-02	0.37	0.89	0.013 (2)	NA	5.0E-02	4.8E-06	--	--	1.4E-05	2.8E-04	0.0%	2.8E-06	--	--	3.2E-05	6.5E-04	0.0%
1,2,3-Trichlorobenzene	0.0024	7.19E-02	1.11 (3)	2.66 (3)	0.3 (3)	NA	1.0E-02 (3)	3.2E-05	--	--	9.4E-05	9.4E-03	0.2%	1.8E-05	--	--	2.1E-04	2.1E-02	0.2%
1,2,4-Trimethylbenzene	0.00374	1.05E-01	NA	NA	NA	NA	5.0E-02	NA	--	--	NA	--	--	NA	--	--	NA	--	--
1,2-Dichloroethene (cis)	0.120	7.67E-03	0.37 (4)	0.89 (4)	0.0072 (2)(4)	NA	1.0E-02	1.0E-04	--	--	2.9E-04	2.9E-02	0.5%	5.8E-05	--	--	6.8E-04	6.8E-02	0.5%
1,2-Dichloroethene (total)	0.175	7.70E-03	0.37	0.89	0.0072 (2)	NA	1.0E-02 (4)	1.5E-04	--	--	4.3E-04	4.3E-02	0.7%	8.5E-05	--	--	9.9E-04	9.9E-02	0.7%
1,2-Dichloroethene (trans)	0.00309	1.09E-02	0.37 (4)	0.89 (4)	0.0072 (2)(4)	NA	2.0E-02	3.6E-06	--	--	1.1E-05	5.3E-04	0.0%	2.1E-06	--	--	2.5E-05	1.2E-03	0.0%
1,2-Dichloropropane	0.0003	7.80E-03	0.46	1.1	0.01 (2)	6.8E-02	1.1E-03	2.8E-07	1.9E-08	0.0%	8.2E-07	7.5E-04	0.0%	1.6E-07	1.1E-08	0.0%	1.9E-06	1.7E-03	0.0%
1,3,5-Trimethylbenzene	0.00273	6.08E-02	NA	NA	NA	NA	5.0E-02	NA	--	--	NA	--	--	NA	--	--	NA	--	--
1,4-Dichlorobenzene (p-)	0.002	4.20E-02	0.71	1.71	0.2	2.4E-02	3.0E-02	1.3E-05	3.0E-07	0.1%	3.7E-05	1.2E-03	0.0%	7.1E-06	1.7E-07	0.1%	8.3E-05	2.8E-03	0.0%
2-Chlorotoluene	0.00225	5.60E-02	NA	NA	NA	NA	2.0E-02	NA	--	--	NA	--	--	NA	--	--	NA	--	--
4-Isopropyltoluene	0.00547	1.43E-01	NA	NA	NA	NA	NA	NA	--	--	NA	--	--	NA	--	--	NA	--	--
Benzene	0.00982	1.50E-02	0.29	0.7	0.1	5.5E-02	4.0E-03	1.4E-05	7.8E-07	0.3%	4.1E-05	1.0E-02	0.2%	8.5E-06	4.7E-07	0.4%	9.9E-05	2.5E-02	0.2%
Bromodichloromethane	0.002	4.60E-03	0.88	2.12	0.012 (2)	6.2E-02	2.0E-02	1.5E-06	9.5E-08	0.0%	4.5E-06	2.2E-04	0.0%	8.6E-07	5.3E-08	0.0%	1.0E-05	5.0E-04	0.0%
Bromoform	0.00277	2.20E-03	2.79	6.7	0.023 (2)	7.9E-03	2.0E-02	1.8E-06	1.4E-08	0.0%	5.3E-06	2.6E-04	0.0%	1.0E-06	8.0E-09	0.0%	1.2E-05	5.9E-04	0.0%
Chloroform	0.00044	6.80E-03	0.5	1.19	0.0093 (2)	NA	1.0E-02	3.8E-07	--	--	1.1E-06	1.1E-04	0.0%	2.1E-07	--	--	2.5E-06	2.5E-04	0.0%
Ethylbenzene	0.00707	4.90E-02	0.42	1.01	0.2	NA	1.0E-01	4.0E-05	--	--	1.2E-04	1.2E-03	0.0%	2.2E-05	--	--	2.6E-04	2.6E-03	0.0%
Isopropylbenzene (Cumene)	0.00433	8.76E-02	NA	NA	NA	NA	1.0E-01	NA	--	--	NA	--	--	NA	--	--	NA	--	--
Naphthalene	0.165	4.70E-02	0.56	1.34	0.2	NA	2.0E-02	1.0E-03	--	--	3.0E-03	1.5E-01	2.4%	5.8E-04	--	--	6.8E-03	3.4E-01	2.4%
n-Butylbenzene	0.00420	1.82E-01	NA	NA	NA	NA	4.0E-02	NA	--	--	NA	--	--	NA	--	--	NA	--	--
Tetrachloroethene (PCE)	0.00264	3.30E-02	0.91	2.18	0.2	5.4E-01	1.0E-02	1.5E-05	8.0E-06	3.5%	4.3E-05	4.3E-03	0.1%	8.3E-06	4.5E-06	3.4%	9.7E-05	9.7E-03	0.1%
Toluene	0.0111	3.10E-02	0.35	0.84	0.1	NA	2.0E-01	3.6E-05	--	--	1.1E-04	5.3E-04	0.0%	2.2E-05	--	--	2.5E-04	1.3E-03	0.0%
Trichloroethene (TCE)	0.318	1.20E-02	0.58	1.39	0.1	4.0E-01	3.0E-04	5.2E-04	2.1E-04	89.5%	1.5E-03	5.0E+00	80.9%	2.9E-04	1.2E-04	89.2%	3.4E-03	1.1E+01	80.8%
Vinyl Chloride	0.0156	5.60E-03	0.24	0.57	0.0023 (2)	1.5E+00	3.0E-03	7.9E-06	1.2E-05	5.1%	2.3E-05	7.6E-03	0.1%	4.7E-06	7.0E-06	5.4%	5.5E-05	1.8E-02	0.1%
Xylene, m/p-	0.0101	5.22E-02 (1)	0.42 (5)	1.01 (5)	0.2 (5)	NA	2.0E-01 (5)	6.1E-05	--	--	1.8E-04	8.8E-04	0.0%	3.4E-05	--	--	4.0E-04	2.0E-03	0.0%
Xylene, o-	0.00534	4.62E-02	0.42 (5)	1.01 (5)	0.2 (5)	NA	2.0E-01 (5)	2.8E-05	--	--	8.3E-05	4.2E-04	0.0%	1.6E-05	--	--	1.9E-04	9.3E-04	0.0%
Xylenes, total	0.00956	2.99E-03	0.42 (5)	1.01 (5)	0.2 (5)	NA	2.0E-01	3.3E-06	--	--	9.6E-06	4.8E-05	0.0%	1.9E-06	--	--	2.2E-05	1.1E-04	0.0%
1,1'-Biphenyl	0.00887	1.09E-01	NA	NA	NA	NA	5.0E-02	NA	--	--	NA	--	--	NA	--	--	NA	--	--
2,4-Dimethylphenol	0.06379	1.10E-02	0.52	1.24	0.02 (2)	NA	2.0E-02	9.0E-05	--	--	2.6E-04	1.3E-02	0.2%	5.1E-05	--	--	5.9E-04	3.0E-02	0.2%
2-Methylnaphthalene	0.0457	8.94E-02	0.53 (6)	2.2 (6)	0.2 (6)	NA	4.0E-03	5.3E-04	--	--	1.5E-03	3.9E-01	6.2%	3.0E-04	--	--	3.5E-03	8.7E-01	6.2%
2-Methylphenol (o-Cresol)	0.0266	7.70E-03	0.43	1.03	0.0089 (2)	NA	5.0E-02	2.4E-05	--	--	7.0E-05	1.4E-03	0.0%	1.3E-05	--	--	1.6E-04	3.1E-03	0.0%
4-Methylphenol (p-Cresol)	0.0181	7.70E-03	0.43	1.03	0.0087 (2)	NA	5.0E-03	1.6E-05	--	--	4.8E-05	9.5E-03	0.2%	9.2E-06	--	--	1.1E-04	2.1E-02	0.2%
Acenaphthene	0.0308	8.39E-02	1.1 (6)	5.6 (6)	2.9 (6)	NA	6.0E-02	4.8E-04	--	--	1.4E-03	2.3E-02	0.4%	2.7E-04	--	--	3.2E-03	5.3E-02	0.4%
Bis(2-ethylhexyl) Phthalate (BEHP)	0.0055	2.50E-02	16.64	39.93	0.2	1.4E-02	2.0E-02	1.0E-04	1.4E-06	0.6%	2.9E-04	1.5E-02	0.2%	5.6E-05	7.8E-07	0.6%	6.5E-04	3.3E-02	0.2%
Carbazole	0.0101	5.23E-02	0.9159 (7)	6.8613 (7)	0.5248 (7)	2.0E-02	NA	9.0E-05	1.8E-06	0.8%	2.6E-04	--	--	5.0E-05	1.0E-06	0.8%	5.9E-04	--	--
Dibenzofuran	0.0131	9.49E-02	0.9286 (7)	6.3174 (7)	1.3183 (7)	NA	2.0E-03	2.1E-04	--	--	6.2E-04	3.1E-01	5.0%	1.2E-04	--	--	1.4E-03	7.0E-01	5.0%
Fluorene	0.0107	1.07E-01	1.5 (6)	7.3 (6)	8.9 (6)	NA	4.0E-02	2.5E-04	--	--	7.2E-04	1.8E-02	0.3%	1.4E-04	--	--	1.6E-03	4.1E-02	0.3%
Naphthalene	0.165	4.70E-02	0.56	1.34	0.2	NA	2.0E-02	1.0E-03	--	--	3.0E-03	1.5E-01	2.4%	5.8E-04	--	--	6.8E-03	3.4E-01	2.4%
								Total ILCR:	2.3E-04	100.0%	Total HI:	6.2E+00	100.0%	Total ILCR:	1.3E-04	100.0%	Total HI:	1.4E+01	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.
(1) Value for m-Xylene
(2) Dermal Exposure Assessment Value
Kp, tau, t*, and B values are derived from the USEPA RAGS E Guidance unless otherwise noted
(3) Value for 1,2,4-Trichlorobenzene
(4) Value for 1,2-Dichloroethene (total)
(5) Value for m-Xylene
(6) VA Voluntary Remediation Program (VRP) value
(7) Calculated from the Dermal Exposure Assessment report (USEPA, 1992)

ADULT RESIDENTS - FUTURE SCENARIO
INHALATION OF VOLATILES IN GROUNDWATER - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Sp
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDo	mg/kg/d	Oral reference dose	CS	
C	mg/L	Concentration of chemical in water	CS	
IR-W	L/day	Ingestion rate of water	2	
EF	days/year	Exposure frequency	350	
ED	years	Exposure duration	24	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	8,760	

				Adult					
				Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,1-Dichloroethene	0.0036759	NA	5.0E-02	3.5E-05	--	--	1.0E-04	2.0E-03	0.0%
1,2,3-Trichlorobenzene	0.0024	NA	1.0E-02 (1)	2.3E-05	--	--	6.6E-05	6.6E-03	0.0%
1,2,4-Trimethylbenzene	0.0037446	NA	5.0E-02	3.5E-05	--	--	1.0E-04	2.1E-03	0.0%
1,2-Dichloroethene (cis)	0.1201417	NA	1.0E-02	1.1E-03	--	--	3.3E-03	3.3E-01	1.1%
1,2-Dichloroethene (total)	0.1749933	NA	1.0E-02 (2)	1.6E-03	--	--	4.8E-03	4.8E-01	1.6%
1,2-Dichloroethene (trans)	0.0030874	NA	2.0E-02	2.9E-05	--	--	8.5E-05	4.2E-03	0.0%
1,2-Dichloropropane	0.0003	6.8E-02	1.1E-03	2.8E-06	1.9E-07	0.0%	8.2E-06	7.5E-03	0.0%
1,3,5-Trimethylbenzene	0.0027302	NA	5.0E-02	2.6E-05	--	--	7.5E-05	1.5E-03	0.0%
1,4-Dichlorobenzene (p-)	0.002	2.4E-02	3.0E-02	1.9E-05	4.5E-07	0.0%	5.5E-05	1.8E-03	0.0%
2-Chlorotoluene	0.00225	NA	2.0E-02	2.1E-05	--	--	6.2E-05	3.1E-03	0.0%
4-Isopropyltoluene	0.0054688	NA	NA	5.1E-05	--	--	1.5E-04	--	--
Benzene	0.0098219	5.5E-02	4.0E-03	9.2E-05	5.1E-06	0.4%	2.7E-04	6.7E-02	0.2%
Bromodichloromethane	0.002	6.2E-02	2.0E-02	1.9E-05	1.2E-06	0.1%	5.5E-05	2.7E-03	0.0%
Bromoform	0.0027685	7.9E-03	2.0E-02	2.6E-05	2.1E-07	0.0%	7.6E-05	3.8E-03	0.0%
Chloroform	0.00044	NA	1.0E-02	4.1E-06	--	--	1.2E-05	1.2E-03	0.0%
Ethylbenzene	0.0070666	NA	1.0E-01	6.6E-05	--	--	1.9E-04	1.9E-03	0.0%
Isopropylbenzene (Cumene)	0.0043321	NA	1.0E-01	4.1E-05	--	--	1.2E-04	1.2E-03	0.0%
Naphthalene	0.1649775	NA	2.0E-02	1.5E-03	--	--	4.5E-03	2.3E-01	0.7%
n-Butylbenzene	0.0042013	NA	4.0E-02	3.9E-05	--	--	1.2E-04	2.9E-03	0.0%
Tetrachloroethene (PCE)	0.002637	5.4E-01	1.0E-02	2.5E-05	1.3E-05	0.9%	7.2E-05	7.2E-03	0.0%
Toluene	0.0111461	NA	2.0E-01	1.0E-04	--	--	3.1E-04	1.5E-03	0.0%
Trichloroethene (TCE)	0.3177426	4.0E-01	3.0E-04	3.0E-03	1.2E-03	83.2%	8.7E-03	2.9E+01	95.7%
Vinyl Chloride	0.0156309	1.5E+00	3.0E-03	1.5E-04	2.2E-04	15.4%	4.3E-04	1.4E-01	0.5%
Xylene, m/p-	0.0100555	NA	2.0E-01 (3)	9.4E-05	--	--	2.8E-04	1.4E-03	0.0%
Xylene, o-	0.0053411	NA	2.0E-01 (3)	5.0E-05	--	--	1.5E-04	7.3E-04	0.0%
Xylenes, total	0.00956	NA	2.0E-01	9.0E-05	--	--	2.6E-04	1.3E-03	0.0%
				Total ILCR:	1.4E-03	100.0%	Total HI:	3.0E+01	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.
(1) Value for 1,2,4-Trichlorobenzene
(2) Value for 1,2-Dichloroethene (cis)
(3) Value for Xylenes (total)

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
INGESTION OF GROUNDWATER AS DRINKING WATER - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	Young Child	
CDI	mg/kg/d	Chronic daily intake	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDo	mg/kg/d	Oral reference dose	CS	CS	
C	mg/L	Concentration of chemical in water	CS	CS	
IR-W	L/day	Ingestion rate of water	2	1	
EF	days/year	Exposure frequency	350	350	
ED	years	Exposure duration	24	6	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	8,760	2,190	

				Adult						Young Child					
				Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,2-Dichloroethene (cis)	0.05840	NA	1.0E-02	5.5E-04	--	--	1.6E-03	1.6E-01	3.3%	3.2E-04	--	--	3.7E-03	3.7E-01	3.3%
1,2-Dichloroethene (trans)	0.00415	NA	2.0E-02	3.9E-05	--	--	1.1E-04	5.7E-03	0.1%	2.3E-05	--	--	2.7E-04	1.3E-02	0.1%
Benzene	0.00121	5.5E-02	4.0E-03	1.1E-05	6.3E-07	0.1%	3.3E-05	8.3E-03	0.2%	6.6E-06	3.6E-07	0.1%	7.7E-05	1.9E-02	0.2%
Naphthalene	0.00100	NA	2.0E-02	9.4E-06	--	--	2.7E-05	1.4E-03	0.0%	5.5E-06	--	--	6.4E-05	3.2E-03	0.0%
Trichloroethene (TCE)	0.04548	4.0E-01	3.0E-04	4.3E-04	1.7E-04	18.6%	1.2E-03	4.2E+00	86.3%	2.5E-04	1.0E-04	18.6%	2.9E-03	9.7E+00	86.3%
Vinyl Chloride	0.05296	1.5E+00	3.0E-03	5.0E-04	7.5E-04	81.3%	1.5E-03	4.8E-01	10.1%	2.9E-04	4.4E-04	81.3%	3.4E-03	1.1E+00	10.1%
				Total ILCR:	9.2E-04	100.0%	Total HI:	4.8E+00	100.0%	Total ILCR:	5.4E-04	100.0%	Total HI:	1.1E+01	100.0%

NOTES:
-- = Not applicable.
NA = Toxicity criterion not available.

(1) Value for 1,2,4-Trichlorobenzene
(2) Value for 1,2-Dichloroethene (cis)
(3) Value for Xylenes (total)

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
DERMAL CONTACT WITH GROUNDWATER - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*Kp*SA*EF*ED*ET)/(BW*AT) Inorganics ILCR = CDI*CSFo Adj CSF Adj = CSF/AD
DAD (mg/kg/d) = (C*CF*(2*Kp*SQRT(6*tau*ET/pi))*SA*EF*ED)/(BW*AT) ET <= t* (Organics) HQ = CDI/RfDo Adj RfD Adj = RfD*AD
DAD (mg/kg/d) = (C*CF*(Kp*(ET/(1+B)+2*tau*((1+3*B)/(1+B)))*SA*EF*ED)/(BW*AT) ET > t* (Benzene & Vinyl Chloride)

Parameter	Units	Description	Adult	Young Child	
DAD	mg/kg/d	Dermally absorbed dose	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	CS	
SA	cm2	Skin surface area available for contact	18,000	6,600	
EF	days/year	Exposure frequency	350	350	
ED	years	Exposure duration	24	6	
ET	hours/day	Exposure time	0.58	1.00	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	8,760	2,190	
C	mg/L	Concentration of chemical in water	CS	CS	
CF	L/cm3	Conversion factor	1.00E-03	1.00E-03	
Kp	cm/hour	Dermal permeability coefficient	CS	CS	
AD	NA	Adjustment for absorbed dose	CS	CS	

								Adult						Young Child					
								Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	Kp (cm/hour)	tau (hours)	t* (hours)	B	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
1,2-Dichloroethene (cis)	0.05840	7.67E-03	0.37 (1)	0.89 (1)	0.0072 (1)(2)	NA	1.0E-02	4.8E-05	--	--	1.4E-04	1.4E-02	1.9%	2.8E-05	--	--	3.3E-04	3.3E-02	1.9%
1,2-Dichloroethene (trans)	0.00415	1.09E-02	0.37 (1)	0.89 (1)	0.0072 (1)(2)	NA	2.0E-02 (3)	4.9E-06	--	--	1.4E-05	7.1E-04	0.1%	2.8E-06	--	--	3.3E-05	1.7E-03	0.1%
Benzene	0.00121	1.50E-02	0.29	0.7	0.1	5.5E-02	4.0E-03	1.7E-06	9.6E-08	0.1%	5.1E-06	1.3E-03	0.2%	1.0E-06	5.8E-08	0.1%	1.2E-05	3.1E-03	0.2%
Naphthalene	0.00100	4.70E-02	0.56	1.34	0.2	NA	2.0E-02	6.3E-06	--	--	1.8E-05	9.1E-04	0.1%	3.5E-06	--	--	4.1E-05	2.1E-03	0.1%
Trichloroethene (TCE)	0.04548	1.20E-02	0.58	1.39	0.1	4.0E-01	3.0E-04 (4)	7.4E-05	3.0E-05	42.5%	2.2E-04	7.2E-01	94.4%	4.2E-05	1.7E-05	41.0%	4.8E-04	1.6E+00	94.1%
Vinyl Chloride	0.05296	5.60E-03	0.24	0.57	0.0023 (2)	1.5E+00	3.0E-03	2.7E-05	4.0E-05	57.3%	7.8E-05	2.6E-02	3.4%	1.6E-05	2.4E-05	58.8%	1.9E-04	6.2E-02	3.6%
								Total ILCR:	7.0E-05	100.0%	Total HI:	7.6E-01	100.0%	Total ILCR:	4.0E-05	100.0%	Total HI:	1.7E+00	100.0%

NOTES:
-- Not applicable.
NA - Toxicity criterion not available.
(1) Value for 1,2-Dichloroethene (total)
(2) Dermal Exposure Assessment Value

Kp, tau, t*, and B values are derived from the USEPA RAGS E Guidance unless otherwise noted

ADULT RESIDENTS - FUTURE SCENARIO
INHALATION OF VOLATILES IN GROUNDWATER - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Sp
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDo	mg/kg/d	Oral reference dose	CS	
C	mg/L	Concentration of chemical in water	CS	
IR-W	L/day	Ingestion rate of water	2	
EF	days/year	Exposure frequency	350	
ED	years	Exposure duration	24	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	8,760	

				Adult					
				Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,2-Dichloroethene (cis)	0.0584	NA	1.0E-02	5.5E-04	--	--	1.6E-03	1.6E-01	--
1,2-Dichloroethene (trans)	0.00415	NA	2.0E-02	3.9E-05	--	--	1.1E-04	5.7E-03	--
Benzene	0.001211	5.5E-02	4.0E-03	1.1E-05	6.3E-07	0.1%	3.3E-05	8.3E-03	0.2%
Naphthalene	0.001	NA	2.0E-02	9.4E-06	--	--	2.7E-05	1.4E-03	--
Trichloroethene (TCE)	0.045476	4.0E-01	3.0E-04	4.3E-04	1.7E-04	18.6%	1.2E-03	4.2E+00	86.3%
Vinyl Chloride	0.05296	1.5E+00	3.0E-03	5.0E-04	7.5E-04	81.3%	1.5E-03	4.8E-01	10.1%

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
ACCIDENTAL INGESTION OF SURFACE SOIL - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*CF*FI*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	Young Child	
CDI	mg/kg/d	Chronic daily intake	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDo	mg/kg/d	Oral reference dose	CS	CS	
C	mg/kg	Concentration of chemical in soil	CS	CS	
IR-S	mg/day	Ingestion rate of soil	50	100	
CF	kg/mg	Conversion factor	1.00E-06	1.00E-06	
FI	NA	Fraction of soil ingested from site	1	1	
EF	days/year	Exposure frequency	234	234	
ED	years	Exposure duration	7	2	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	2,555	730	

				Adult						Young Child					
				Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	2.4E-02	3.0E-02	5.7E-08	1.4E-09	0.1%	5.7E-07	1.9E-05	0.2%	1.5E-07	3.7E-09	0.1%	5.3E-06	1.8E-04	0.2%
2-Hexanone (MBK)	1.08	NA	NA	4.9E-08	--	--	4.9E-07	--	--	1.3E-07	--	--	4.6E-06	--	--
Naphthalene	33.4	NA	2.0E-02	1.5E-06	--	--	1.5E-05	7.6E-04	7.5%	4.1E-06	--	--	1.4E-04	7.1E-03	7.5%
Acetophenone	1.30	NA	NA	5.9E-08	--	--	5.9E-07	--	--	1.6E-07	--	--	5.5E-06	--	--
Benzo(a)anthracene	1.36	7.3E-01	NA	6.2E-08	4.5E-08	3.6%	6.2E-07	--	--	1.7E-07	1.2E-07	3.6%	5.8E-06	--	--
Benzo(a)pyrene	1.47	7.3E+00	NA	6.7E-08	4.9E-07	39.2%	6.7E-07	--	--	1.8E-07	1.3E-06	39.2%	6.3E-06	--	--
Benzo(b)fluoranthene	2.98	7.3E-01	NA	1.4E-07	1.0E-07	8.0%	1.4E-06	--	--	3.6E-07	2.7E-07	8.0%	1.3E-05	--	--
Benzo(k)fluoranthene	1.75	7.3E-02	NA	8.0E-08	5.9E-09	0.5%	8.0E-07	--	--	2.1E-07	1.6E-08	0.5%	7.5E-06	--	--
Carbazole	3.96	2.0E-02	NA	1.8E-07	3.6E-09	0.3%	1.8E-06	--	--	4.8E-07	9.7E-09	0.3%	1.7E-05	--	--
Chrysene	1.74	7.3E-03	NA	8.0E-08	5.8E-10	0.0%	8.0E-07	--	--	2.1E-07	1.6E-09	0.0%	7.4E-06	--	--
Dibenz(a,h)anthracene	1.12	7.3E+00	NA	5.1E-08	3.7E-07	29.8%	5.1E-07	--	--	1.4E-07	9.9E-07	29.8%	4.8E-06	--	--
Indeno(1,2,3-cd)pyrene	1.41	7.3E-01	NA	6.5E-08	4.7E-08	3.8%	6.5E-07	--	--	1.7E-07	1.3E-07	3.8%	6.0E-06	--	--
Naphthalene	14.1	NA	2.0E-02	6.5E-07	--	--	6.5E-06	3.2E-04	3.2%	1.7E-06	--	--	6.0E-05	3.0E-03	3.2%
Arsenic	2.69	1.5E+00	3.0E-04	1.2E-07	1.8E-07	14.8%	1.2E-06	4.1E-03	40.1%	3.3E-07	4.9E-07	14.8%	1.1E-05	3.8E-02	40.1%
Cadmium	5.49	NA	5.0E-04	2.5E-07	--	--	2.5E-06	5.0E-03	49.1%	6.7E-07	--	--	2.3E-05	4.7E-02	49.1%
				Total ILCR:	1.3E-06	100.0%	Total HI:	1.0E-02	100.0%	Total ILCR:	3.3E-06	100.0%	Total HI:	9.6E-02	100.0%

NOTES:
-- Not applicable.
NA - Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
DERMAL CONTACT WITH SURFACE SOIL - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*AF*ABS*SA*EF*ED)/(BW*AT)
ILCR = CDI*CSFd
HQ = CDI/RfDd

Parameter	Units	Description	Adult	Young Child	
DAD	mg/kg/d	Dermally absorbed dose	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	CS	
C	mg/kg	Concentration of chemical in soil	CS	CS	
CF	kg/mg	Conversion factor	1.00E-06	1.00E-06	
AF	mg/cm2	Soil to skin adherence factor	0.01	0.04	
ABS	NA	Absorption fraction	(1)	(1)	
SA	cm2/day	Skin surface area available for contact	5,700	2,800	
EF	days/year	Exposure frequency	234	234	
ED	years	Exposure duration	7	2	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	2,555	730	

					Adult						Young Child					
					Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	ABS	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	0.01	2.4E-02	3.0E-02	6.5E-10	1.6E-11	0.0%	6.5E-09	2.2E-07	0.1%	1.7E-09	4.1E-11	0.0%	6.0E-08	2.0E-06	0.1%
2-Hexanone (MBK)	1.08	0.01	NA	NA	5.6E-10	--	--	5.6E-09	--	--	1.5E-09	--	--	5.2E-08	--	--
Naphthalene	33.4	0.01	NA	2.0E-02	1.7E-08	--	--	1.7E-07	8.7E-06	3.3%	4.6E-08	--	--	1.6E-06	8.0E-05	3.3%
Acetophenone	1.30	0.1	NA	NA	6.8E-09	--	--	6.8E-08	--	--	1.8E-08	--	--	6.2E-07	--	--
Benzo(a)anthracene	1.36	0.13	7.3E-01	NA	9.2E-09	6.7E-09	4.1%	9.2E-08	--	--	2.4E-08	1.8E-08	4.1%	8.5E-07	--	--
Benzo(a)pyrene	1.47	0.13	7.3E+00	NA	1.0E-08	7.3E-08	44.3%	1.0E-07	--	--	2.6E-08	1.9E-07	44.3%	9.1E-07	--	--
Benzo(b)fluoranthene	2.98	0.13	7.3E-01	NA	2.0E-08	1.5E-08	9.0%	2.0E-07	--	--	5.3E-08	3.9E-08	9.0%	1.9E-06	--	--
Benzo(k)fluoranthene	1.75	0.13	7.3E-02	NA	1.2E-08	8.7E-10	0.5%	1.2E-07	--	--	3.1E-08	2.3E-09	0.5%	1.1E-06	--	--
Carbazole	3.96	0.13	2.0E-02	NA	2.7E-08	5.4E-10	0.3%	2.7E-07	--	--	7.0E-08	1.4E-09	0.3%	2.5E-06	--	--
Chrysene	1.74	0.13	7.3E-03	NA	1.2E-08	8.6E-11	0.1%	1.2E-07	--	--	3.1E-08	2.3E-10	0.1%	1.1E-06	--	--
Dibenz(a,h)anthracene	1.12	0.13	7.3E+00	NA	7.6E-09	5.5E-08	33.6%	7.6E-08	--	--	2.0E-08	1.4E-07	33.6%	6.9E-07	--	--
Indeno(1,2,3-cd)pyrene	1.41	0.13	7.3E-01	NA	9.6E-09	7.0E-09	4.2%	9.6E-08	--	--	2.5E-08	1.8E-08	4.2%	8.8E-07	--	--
Naphthalene	14.1	0.01	NA	2.0E-02	7.4E-09	--	--	7.4E-08	3.7E-06	1.4%	1.9E-08	--	--	6.8E-07	3.4E-05	1.4%
Arsenic	2.69	0.03	1.5E+00	3.0E-04	4.2E-09	6.3E-09	3.8%	4.2E-08	1.4E-04	52.5%	1.1E-08	1.7E-08	3.8%	3.9E-07	1.3E-03	52.5%
Cadmium	5.49	0.001	NA	2.5E-05	2.9E-10	--	--	2.9E-09	1.1E-04	42.8%	7.5E-10	--	--	2.6E-08	1.1E-03	42.8%
					Total ILCR:	1.6E-07	100.0%	Total HI:	2.7E-04	100.0%	Total ILCR:	4.3E-07	100.0%	Total HI:	2.5E-03	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
INHALATION OF FUGITIVE DUSTS EMANATING FROM SURFACE SOIL - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (Ca*RR*ET*EF*ED)/(BW*AT)
Where: Ca = C * (1/PEF)

ILCR = CDI*CSFi
HQ = CDI/RfDi

Parameter	Units	Description	Adult	Young Child	
CDI	mg/kg/d	Chronic daily intake	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFi	1/(mg/kg/d)	Inhalation cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDi	mg/kg/d	Inhalation reference dose	CS	CS	
Ca	mg/m3	Concentration of chemical in air as fugitive dusts	CS	CS	
C	mg/kg	Concentration of chemical in soil	CS	CS	
VF	m3/kg	Volatilization Factor	CS	CS	
PEF	m3/kg	Particulate emission factor	1.32E+09	1.32E+09	
RR	m3/hour	Respiration rate	0.55	0.31	
ET	hours/day	Exposure time	1.5	5.6	
EF	days/year	Exposure frequency	234	234	
ED	years	Exposure duration	7	2	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	2,555	730	

						Adult						Young Child					
						Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	VF (m^3/kg)	Ca (mg/m3)	CSFi 1/(mg/kg/d)	RfDi (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	12,950	9.66E-05	2.2E-02	2.3E-01	7.3E-08	1.6E-09	75.9%	7.3E-07	3.2E-06	0.0%	2.0E-07	4.5E-09	75.9%	7.1E-06	3.1E-05	0.0%
2-Hexanone (MBK)	1.08	NA	8.19E-10	NA	NA	6.2E-13	--	--	6.2E-12	--	--	1.7E-12	--	--	6.0E-11	--	--
Naphthalene	33.4	43,256	7.71E-04	NA	8.6E-04	5.8E-07	--	--	5.8E-06	6.8E-03	70.2%	1.6E-06	--	--	5.7E-05	6.6E-02	70.2%
Acetophenone	1.30	257,001	5.04E-06	NA	NA	3.8E-09	--	--	3.8E-08	--	--	1.1E-08	--	--	3.7E-07	--	--
Benzo(a)anthracene	1.36	18,122,159	7.61E-08	7.3E-01	NA	5.8E-11	4.2E-11	2.0%	5.8E-10	--	--	1.6E-10	1.2E-10	2.0%	5.6E-09	--	--
Benzo(a)pyrene	1.47	35,225,659	4.28E-08	7.3E+00	NA	3.2E-11	2.4E-10	11.2%	3.2E-10	--	--	9.0E-11	6.6E-10	11.2%	3.1E-09	--	--
Benzo(b)fluoranthene	2.98	21,155,386	1.43E-07	7.3E-01	NA	1.1E-10	7.9E-11	3.7%	1.1E-09	--	--	3.0E-10	2.2E-10	3.7%	1.1E-08	--	--
Benzo(k)fluoranthene	1.75	45,186,627	4.01E-08	7.3E-02	NA	3.0E-11	2.2E-12	0.1%	3.0E-10	--	--	8.4E-11	6.1E-12	0.1%	2.9E-09	--	--
Carbazole	3.96	3,478,720	1.14E-06	2.0E-02	NA	8.6E-10	1.7E-11	0.8%	8.6E-09	--	--	2.4E-09	4.8E-11	0.8%	8.4E-08	--	--
Chrysene	1.74	2,726,331	6.40E-07	7.3E-03	NA	4.8E-10	3.5E-12	0.2%	4.8E-09	--	--	1.3E-09	9.8E-12	0.2%	4.7E-08	--	--
Dibenz(a,h)anthracene	1.12	86,595,201	1.37E-08	7.3E+00	NA	1.0E-11	7.6E-11	3.6%	1.0E-10	--	--	2.9E-11	2.1E-10	3.6%	1.0E-09	--	--
Indeno(1,2,3-cd)pyrene	1.41	81,978,041	1.83E-08	7.3E-01	NA	1.4E-11	1.0E-11	0.5%	1.4E-10	--	--	3.8E-11	2.8E-11	0.5%	1.3E-09	--	--
Naphthalene	14.1	43,256	3.26E-04	NA	8.6E-04	2.5E-07	--	--	2.5E-06	2.9E-03	29.7%	6.8E-07	--	--	2.4E-05	2.8E-02	29.7%
Arsenic	2.69	NA	2.04E-09	1.5E+01	NA	1.5E-12	2.3E-11	1.1%	1.5E-11	--	--	4.3E-12	6.4E-11	1.1%	1.5E-10	--	--
Cadmium	5.49	NA	4.16E-09	6.3E+00	NA	3.1E-12	2.0E-11	0.9%	3.1E-11	--	--	8.7E-12	5.5E-11	0.9%	3.0E-10	--	--
						Total ILCR:	2.1E-09	100.0%	Total HI:	9.7E-03	100.0%	Total ILCR:	5.9E-09	100.0%	Total HI:	9.4E-02	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
ACCIDENTAL INGESTION OF SUBSURFACE SOIL - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*CF*FI*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	Young Child	
CDI	mg/kg/d	Chronic daily intake	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDo	mg/kg/d	Oral reference dose	CS	CS	
C	mg/kg	Concentration of chemical in soil	CS	CS	
IR-S	mg/day	Ingestion rate of soil	50	100	
CF	kg/mg	Conversion factor	1.00E-06	1.00E-06	
FI	NA	Fraction of soil ingested from site	1	1	
EF	days/year	Exposure frequency	234	234	
ED	years	Exposure duration	7	2	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	2,555	730	

				Adult						Young Child					
				Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
2-Hexanone (MBK)	0.323	NA	NA	1.5E-08	--	--	1.5E-07	--	--	3.9E-08	--	--	1.4E-06	--	--
Benzo(a)anthracene	0.249	7.3E-01	NA	1.1E-08	8.3E-09	1.4%	1.1E-07	--	--	3.0E-08	2.2E-08	1.4%	1.1E-06	--	--
Benzo(a)pyrene	0.234	7.3E+00	NA	1.1E-08	7.8E-08	12.8%	1.1E-07	--	--	2.9E-08	2.1E-07	12.8%	1.0E-06	--	--
Benzo(b)fluoranthene	0.268	7.3E-01	NA	1.2E-08	9.0E-09	1.5%	1.2E-07	--	--	3.3E-08	2.4E-08	1.5%	1.1E-06	--	--
Benzo(k)fluoranthene	0.252	7.3E-02	NA	1.2E-08	8.4E-10	0.1%	1.2E-07	--	--	3.1E-08	2.2E-09	0.1%	1.1E-06	--	--
Carbazole	0.213	2.0E-02	NA	9.7E-09	1.9E-10	0.0%	9.7E-08	--	--	2.6E-08	5.2E-10	0.0%	9.1E-07	--	--
Chrysene	0.284	7.3E-03	NA	1.3E-08	9.5E-11	0.0%	1.3E-07	--	--	3.5E-08	2.5E-10	0.0%	1.2E-06	--	--
Dibenz(a,h)anthracene	0.213	7.3E+00	NA	9.7E-09	7.1E-08	11.6%	9.7E-08	--	--	2.6E-08	1.9E-07	11.6%	9.1E-07	--	--
Indeno(1,2,3-cd)pyrene	0.220	7.3E-01	NA	1.0E-08	7.4E-09	1.2%	1.0E-07	--	--	2.7E-08	2.0E-08	1.2%	9.4E-07	--	--
Arsenic	6.34	1.5E+00	3.0E-04	2.9E-07	4.4E-07	71.4%	2.9E-06	9.7E-03	100.0%	7.7E-07	1.2E-06	71.4%	2.7E-05	9.0E-02	100.0%
				Total ILCR:	6.1E-07	100.0%	Total HI:	9.7E-03	100.0%	Total ILCR:	1.6E-06	100.0%	Total HI:	9.0E-02	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
DERMAL CONTACT WITH SUBSURFACE SOIL - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*AF*ABS*SA*EF*ED)/(BW*AT)
ILCR = CDI*CSFd
HQ = CDI/RfDd

Parameter	Units	Description	Adult	Young Child	
DAD	mg/kg/d	Dermally absorbed dose	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	CS	
C	mg/kg	Concentration of chemical in soil	CS	CS	
CF	kg/mg	Conversion factor	1.00E-06	1.00E-06	
AF	mg/cm2	Soil to skin adherence factor	0.07	0.04	
ABS	NA	Absorption fraction	(1)	(1)	
SA	cm2/day	Skin surface area available for contact	5,700	2,800	
EF	days/year	Exposure frequency	234	234	
ED	years	Exposure duration	7	2	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	2,555	730	

					Adult						Young Child					
					Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	ABS	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
2-Hexanone (MBK)	0.323	0.01	NA	NA	1.2E-09	--	--	1.2E-08	--	--	4.4E-10	--	--	1.5E-08	--	--
Benzo(a)anthracene	0.249	0.13	7.3E-01	NA	1.2E-08	8.6E-09	3.0%	1.2E-07	--	--	4.4E-09	3.2E-09	3.0%	1.6E-07	--	--
Benzo(a)pyrene	0.234	0.13	7.3E+00	NA	1.1E-08	8.1E-08	28.3%	1.1E-07	--	--	4.2E-09	3.0E-08	28.3%	1.5E-07	--	--
Benzo(b)fluoranthene	0.268	0.13	7.3E-01	NA	1.3E-08	9.3E-09	3.3%	1.3E-07	--	--	4.8E-09	3.5E-09	3.3%	1.7E-07	--	--
Benzo(k)fluoranthene	0.252	0.13	7.3E-02	NA	1.2E-08	8.7E-10	0.3%	1.2E-07	--	--	4.5E-09	3.3E-10	0.3%	1.6E-07	--	--
Carbazole	0.213	0.13	2.0E-02	NA	1.0E-08	2.0E-10	0.1%	1.0E-07	--	--	3.8E-09	7.6E-11	0.1%	1.3E-07	--	--
Chrysene	0.284	0.13	7.3E-03	NA	1.3E-08	9.9E-11	0.0%	1.3E-07	--	--	5.1E-09	3.7E-11	0.0%	1.8E-07	--	--
Dibenz(a,h)anthracene	0.213	0.13	7.3E+00	NA	1.0E-08	7.4E-08	25.8%	1.0E-07	--	--	3.8E-09	2.8E-08	25.8%	1.3E-07	--	--
Indeno(1,2,3-cd)pyrene	0.220	0.13	7.3E-01	NA	1.0E-08	7.6E-09	2.7%	1.0E-07	--	--	3.9E-09	2.9E-09	2.7%	1.4E-07	--	--
Arsenic	6.34	0.03	1.5E+00	3.0E-04	7.0E-08	1.0E-07	36.5%	7.0E-07	2.3E-03	100.0%	2.6E-08	3.9E-08	36.5%	9.1E-07	3.0E-03	100.0%
					Total ILCR:	2.9E-07	100.0%	Total HI:	2.3E-03	100.0%	Total ILCR:	1.1E-07	100.0%	Total HI:	3.0E-03	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
INHALATION OF FUGITIVE DUSTS EMANATING FROM SUBSURFACE SOIL - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (Ca*RR*ET*EF*ED)/(BW*AT)
Where: Ca = C * (1/PEF)

ILCR = CDI*CSFi
HQ = CDI/RfDi

Parameter	Units	Description	Adult	Young Child	
CDI	mg/kg/d	Chronic daily intake	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFi	1/(mg/kg/d)	Inhalation cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDi	mg/kg/d	Inhalation reference dose	CS	CS	
Ca	mg/m3	Concentration of chemical in air as fugitive dusts	CS	CS	
C	mg/kg	Concentration of chemical in soil	CS	CS	
VF	m3/kg	Volatilization Factor	CS	CS	
PEF	m3/kg	Particulate emission factor	1.32E+09	1.32E+09	
RR	m3/hour	Respiration rate	0.55	0.31	
ET	hours/day	Exposure time	1.5	5.6	
EF	days/year	Exposure frequency	234	234	
ED	years	Exposure duration	7	2	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	2,555	730	

						Adult						Young Child					
						Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	VF (m^3/kg)	Ca (mg/m3)	CSFi 1/(mg/kg/d)	RfDi (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
2-Hexanone (MBK)	0.323	NA	2.45E-10	NA	NA	1.8E-13	--	--	1.8E-12	--	--	5.1E-13	--	--	1.8E-11	--	--
Benzo(a)anthracene	0.249	18,122,159	1.39E-08	7.3E-01	NA	1.1E-11	7.7E-12	6.2%	1.1E-10	--	--	2.9E-11	2.1E-11	6.2%	1.0E-09	--	--
Benzo(a)pyrene	0.234	35,225,659	6.81E-09	7.3E+00	NA	5.1E-12	3.8E-11	30.1%	5.1E-11	--	--	1.4E-11	1.0E-10	30.1%	5.0E-10	--	--
Benzo(b)fluoranthene	0.268	21,155,386	1.29E-08	7.3E-01	NA	9.7E-12	7.1E-12	5.7%	9.7E-11	--	--	2.7E-11	2.0E-11	5.7%	9.4E-10	--	--
Benzo(k)fluoranthene	0.252	45,186,627	5.77E-09	7.3E-02	NA	4.4E-12	3.2E-13	0.3%	4.4E-11	--	--	1.2E-11	8.8E-13	0.3%	4.2E-10	--	--
Carbazole	0.213	3,478,720	6.13E-08	2.0E-02	NA	4.6E-11	9.3E-13	0.7%	4.6E-10	--	--	1.3E-10	2.6E-12	0.7%	4.5E-09	--	--
Chrysene	0.284	2,726,331	1.04E-07	7.3E-03	NA	7.9E-11	5.8E-13	0.5%	7.9E-10	--	--	2.2E-10	1.6E-12	0.5%	7.7E-09	--	--
Dibenz(a,h)anthracene	0.213	86,595,201	2.62E-09	7.3E+00	NA	2.0E-12	1.4E-11	11.6%	2.0E-11	--	--	5.5E-12	4.0E-11	11.6%	1.9E-10	--	--
Indeno(1,2,3-cd)pyrene	0.220	81,978,041	2.86E-09	7.3E-01	NA	2.2E-12	1.6E-12	1.3%	2.2E-11	--	--	6.0E-12	4.4E-12	1.3%	2.1E-10	--	--
Arsenic	6.34	NA	4.81E-09	1.5E+01	NA	3.6E-12	5.5E-11	43.8%	3.6E-11	--	--	1.0E-11	1.5E-10	43.8%	3.5E-10	--	--
						Total ILCR:	1.2E-10	100.0%	Total HI:	--	--	Total ILCR:	3.5E-10	100.0%	Total HI:	--	--

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
INGESTION OF GROUNDWATER AS DRINKING WATER - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	Young Child	
CDI	mg/kg/d	Chronic daily intake	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDo	mg/kg/d	Oral reference dose	CS	CS	
C	mg/L	Concentration of chemical in water	CS	CS	
IR-W	L/day	Ingestion rate of water	1.4	1	
EF	days/year	Exposure frequency	234	234	
ED	years	Exposure duration	7	2	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	2,555	730	

				Adult						Young Child					
				Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,1-Dichloroethene	0.00368	NA	5.0E-02	4.7E-06	--	--	4.7E-05	9.4E-04	0.0%	4.5E-06	--	--	1.6E-04	3.1E-03	0.0%
1,2,3-Trichlorobenzene	0.0024	NA	1.0E-02 (1)	3.1E-06	--	--	3.1E-05	3.1E-03	0.0%	2.9E-06	--	--	1.0E-04	1.0E-02	0.0%
1,2,4-Trimethylbenzene	0.00374	NA	5.0E-02	4.8E-06	--	--	4.8E-05	9.6E-04	0.0%	4.6E-06	--	--	1.6E-04	3.2E-03	0.0%
1,2-Dichloroethene (cis)	0.120	NA	1.0E-02	1.5E-04	--	--	1.5E-03	1.5E-01	1.1%	1.5E-04	--	--	5.1E-03	5.1E-01	1.1%
1,2-Dichloroethene (total)	0.175	NA	1.0E-02 (2)	2.2E-04	--	--	2.2E-03	2.2E-01	1.5%	2.1E-04	--	--	7.5E-03	7.5E-01	1.5%
1,2-Dichloroethene (trans)	0.00309	NA	2.0E-02	4.0E-06	--	--	4.0E-05	2.0E-03	0.0%	3.8E-06	--	--	1.3E-04	6.6E-03	0.0%
1,2-Dichloropropane	0.0003	6.8E-02	1.1E-03	3.8E-07	2.6E-08	0.0%	3.8E-06	3.5E-03	0.0%	3.7E-07	2.5E-08	0.0%	1.3E-05	1.2E-02	0.0%
1,3,5-Trimethylbenzene	0.00273	NA	5.0E-02	3.5E-06	--	--	3.5E-05	7.0E-04	0.0%	3.3E-06	--	--	1.2E-04	2.3E-03	0.0%
1,4-Dichlorobenzene (p-)	0.002	2.4E-02	3.0E-02	2.6E-06	6.2E-08	0.0%	2.6E-05	8.5E-04	0.0%	2.4E-06	5.9E-08	0.0%	8.5E-05	2.8E-03	0.0%
2-Chlorotoluene	0.00225	NA	2.0E-02	2.9E-06	--	--	2.9E-05	1.4E-03	0.0%	2.7E-06	--	--	9.6E-05	4.8E-03	0.0%
4-Isopropyltoluene	0.00547	NA	NA	7.0E-06	--	--	7.0E-05	--	--	6.7E-06	--	--	2.3E-04	--	--
Benzene	0.00982	5.5E-02	4.0E-03	1.3E-05	6.9E-07	0.4%	1.3E-04	3.1E-02	0.2%	1.2E-05	6.6E-07	0.4%	4.2E-04	1.0E-01	0.2%
Bromodichloromethane	0.002	6.2E-02	2.0E-02	2.6E-06	1.6E-07	0.1%	2.6E-05	1.3E-03	0.0%	2.4E-06	1.5E-07	0.1%	8.5E-05	4.3E-03	0.0%
Bromoform	0.00277	7.9E-03	2.0E-02	3.5E-06	2.8E-08	0.0%	3.5E-05	1.8E-03	0.0%	3.4E-06	2.7E-08	0.0%	1.2E-04	5.9E-03	0.0%
Chloroform	0.00044	NA	1.0E-02	5.6E-07	--	--	5.6E-06	5.6E-04	0.0%	5.4E-07	--	--	1.9E-05	1.9E-03	0.0%
Ethylbenzene	0.00707	NA	1.0E-01	9.1E-06	--	--	9.1E-05	9.1E-04	0.0%	8.6E-06	--	--	3.0E-04	3.0E-03	0.0%
Isopropylbenzene (Cumene)	0.00433	NA	1.0E-01	5.6E-06	--	--	5.6E-05	5.6E-04	0.0%	5.3E-06	--	--	1.9E-04	1.9E-03	0.0%
Naphthalene	0.165	NA	2.0E-02	2.1E-04	--	--	2.1E-03	1.1E-01	0.7%	2.0E-04	--	--	7.1E-03	3.5E-01	0.7%
n-Butylbenzene	0.00420	NA	4.0E-02	5.4E-06	--	--	5.4E-05	1.3E-03	0.0%	5.1E-06	--	--	1.8E-04	4.5E-03	0.0%
Tetrachloroethene (PCE)	0.00264	5.4E-01	1.0E-02	3.4E-06	1.8E-06	0.9%	3.4E-05	3.4E-03	0.0%	3.2E-06	1.7E-06	0.9%	1.1E-04	1.1E-02	0.0%
Toluene	0.0111	NA	2.0E-01	1.4E-05	--	--	1.4E-04	7.1E-04	0.0%	1.4E-05	--	--	4.8E-04	2.4E-03	0.0%
Trichloroethene (TCE)	0.318	4.0E-01	3.0E-04	4.1E-04	1.6E-04	83.1%	4.1E-03	1.4E+01	92.8%	3.9E-04	1.6E-04	83.1%	1.4E-02	4.5E+01	92.8%
Vinyl Chloride	0.0156	1.5E+00	3.0E-03	2.0E-05	3.0E-05	15.3%	2.0E-04	6.7E-02	0.5%	1.9E-05	2.9E-05	15.3%	6.7E-04	2.2E-01	0.5%
Xylene, m/p-	0.0101	NA	2.0E-01 (3)	1.3E-05	--	--	1.3E-04	6.4E-04	0.0%	1.2E-05	--	--	4.3E-04	2.1E-03	0.0%
Xylene, o-	0.00534	NA	2.0E-01 (3)	6.8E-06	--	--	6.8E-05	3.4E-04	0.0%	6.5E-06	--	--	2.3E-04	1.1E-03	0.0%
Xylenes, total	0.00956	NA	2.0E-01	1.2E-05	--	--	1.2E-04	6.1E-04	0.0%	1.2E-05	--	--	4.1E-04	2.0E-03	0.0%
1,1'-Biphenyl	0.00887	NA	5.0E-02	1.1E-05	--	--	1.1E-04	2.3E-03	0.0%	1.1E-05	--	--	3.8E-04	7.6E-03	0.0%
2,4-Dimethylphenol	0.06379	NA	2.0E-02	8.2E-05	--	--	8.2E-04	4.1E-02	0.3%	7.8E-05	--	--	2.7E-03	1.4E-01	0.3%
2-Methylnaphthalene	0.0457	NA	4.0E-03	5.9E-05	--	--	5.9E-04	1.5E-01	1.0%	5.6E-05	--	--	2.0E-03	4.9E-01	1.0%
2-Methylphenol (o-Cresol)	0.0266	NA	5.0E-02	3.4E-05	--	--	3.4E-04	6.8E-03	0.0%	3.2E-05	--	--	1.1E-03	2.3E-02	0.0%
4-Methylphenol (p-Cresol)	0.0181	NA	5.0E-03	2.3E-05	--	--	2.3E-04	4.6E-02	0.3%	2.2E-05	--	--	7.7E-04	1.5E-01	0.3%
Acenaphthene	0.0308	NA	6.0E-02	3.9E-05	--	--	3.9E-04	6.6E-03	0.0%	3.8E-05	--	--	1.3E-03	2.2E-02	0.0%
Bis(2-ethylhexyl) Phthalate (BEHP)	0.0055	1.4E-02	2.0E-02	7.1E-06	9.9E-08	0.1%	7.1E-05	3.5E-03	0.0%	6.7E-06	9.4E-08	0.1%	2.4E-04	1.2E-02	0.0%
Carbazole	0.0101	2.0E-02	NA	1.3E-05	2.6E-07	0.1%	1.3E-04	--	--	1.2E-05	2.5E-07	0.1%	4.3E-04	--	--
Dibenzofuran	0.0131	NA	2.0E-03	1.7E-05	--	--	1.7E-04	8.4E-02	0.6%	1.6E-05	--	--	5.6E-04	2.8E-01	0.6%
Fluorene	0.0107	NA	4.0E-02	1.4E-05	--	--	1.4E-04	3.4E-03	0.0%	1.3E-05	--	--	4.6E-04	1.1E-02	0.0%
Naphthalene	0.165	NA	2.0E-02	2.1E-04	--	--	2.1E-03	1.1E-01	0.7%	2.0E-04	--	--	7.1E-03	3.5E-01	0.7%
				Total ILCR:	2.0E-04	100.0%	Total HI:	1.5E+01	100.0%	Total ILCR:	1.9E-04	100.0%	Total HI:	4.9E+01	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

(1) Value for 1,2,4-Trichlorobenzene
(2) Value for 1,2-Dichloroethene (cis)
(3) Value for Xylenes (total)

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
DERMAL CONTACT WITH GROUNDWATER - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*Kp*SA*EF*ED*ET)/(BW*AT) — Inorganics — ILCR = CDI*CSFo Adj — CSF Adj = CSF/AD
DAD (mg/kg/d) = (C*CF*(2*Kp*SQRT(6*tau*ET/pi))*SA*EF*ED)/(BW*AT) — ET <= t* (Organics) — HQ = CDI/RfDo Adj — RfD Adj = RfD*AD
DAD (mg/kg/d) = (C*CF*(Kp*(ET/(1+B)+2*tau*((1+3*B)/(1+B)))*SA*EF*ED)/(BW*AT) — ET > t* (Benzene & Vinyl Chloride)

Parameter	Units	Description	Adult	Young Child	
DAD	mg/kg/d	Dermally absorbed dose	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	CS	
SA	cm2	Skin surface area available for contact	18,000	6,600	
EF	days/year	Exposure frequency	234	234	
ED	years	Exposure duration	7	2	
ET	hours/day	Exposure time	0.25	0.33	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	2,555	730	
C	mg/L	Concentration of chemical in water	CS	CS	
CF	L/cm3	Conversion factor	1.00E-03	1.00E-03	
Kp	cm/hour	Dermal permeability coefficient	CS	CS	
AD	NA	Adjustment for absorbed dose	CS	CS	

								Adult						Young Child					
								Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	Kp (cm/hour)	tau (hours)	t* (hours)	B	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
1,1-Dichloroethene	0.00368	1.20E-02	0.37	0.89	0.013 (2)	NA	5.0E-02	6.1E-07	--	--	6.1E-06	1.2E-04	0.0%	3.4E-07	--	--	1.2E-05	2.4E-04	0.0%
1,2,3-Trichlorobenzene	0.0024	7.19E-02	1.11 (3)	2.66 (3)	0.3 (3)	NA	1.0E-02 (3)	4.1E-06	--	--	4.1E-05	4.1E-03	0.2%	2.3E-06	--	--	8.1E-05	8.1E-03	0.2%
1,2,4-Trimethylbenzene	0.00374	1.05E-01	NA	NA	NA	NA	5.0E-02	NA	--	--	NA	--	--	NA	--	--	NA	--	--
1,2-Dichloroethene (cis)	0.120	7.67E-03	0.37 (4)	0.89 (4)	0.0072 (2)(4)	NA	1.0E-02	1.3E-05	--	--	1.3E-04	1.3E-02	0.5%	7.2E-06	--	--	2.5E-04	2.5E-02	0.5%
1,2-Dichloroethene (total)	0.175	7.70E-03	0.37	0.89	0.0072 (2)	NA	1.0E-02 (4)	1.9E-05	--	--	1.9E-04	1.9E-02	0.7%	1.0E-05	--	--	3.7E-04	3.7E-02	0.7%
1,2-Dichloroethene (trans)	0.00309	1.09E-02	0.37 (4)	0.89 (4)	0.0072 (2)(4)	NA	2.0E-02	4.7E-07	--	--	4.7E-06	2.3E-04	0.0%	2.6E-07	--	--	9.1E-06	4.6E-04	0.0%
1,2-Dichloropropane	0.0003	7.80E-03	0.46	1.1	0.01 (2)	6.8E-02	1.1E-03	3.6E-08	2.5E-09	0.0%	3.6E-07	3.3E-04	0.0%	2.0E-08	1.4E-09	0.0%	7.1E-07	6.5E-04	0.0%
1,3,5-Trimethylbenzene	0.00273	6.08E-02	NA	NA	NA	NA	5.0E-02	NA	--	--	NA	--	--	NA	--	--	NA	--	--
1,4-Dichlorobenzene (p-)	0.002	4.20E-02	0.71	1.71	0.2	2.4E-02	3.0E-02	1.6E-06	3.9E-08	0.1%	1.6E-05	5.4E-04	0.0%	9.1E-07	2.2E-08	0.1%	3.2E-05	1.1E-03	0.0%
2-Chlorotoluene	0.00225	5.60E-02	NA	NA	NA	NA	2.0E-02	NA	--	--	NA	--	--	NA	--	--	NA	--	--
4-Isopropyltoluene	0.00547	1.43E-01	NA	NA	NA	NA	NA	NA	--	--	NA	--	--	NA	--	--	NA	--	--
Benzene	0.00982	1.50E-02	0.29	0.7	0.1	5.5E-02	4.0E-03	1.8E-06	9.9E-08	0.3%	1.8E-05	4.5E-03	0.2%	1.0E-06	5.6E-08	0.3%	3.6E-05	8.9E-03	0.2%
Bromodichloromethane	0.002	4.60E-03	0.88	2.12	0.012 (2)	6.2E-02	2.0E-02	2.0E-07	1.2E-08	0.0%	2.0E-06	9.8E-05	0.0%	1.1E-07	6.8E-09	0.0%	3.9E-06	1.9E-04	0.0%
Bromoform	0.00277	2.20E-03	2.79	6.7	0.023 (2)	7.9E-03	2.0E-02	2.3E-07	1.8E-09	0.0%	2.3E-06	1.2E-04	0.0%	1.3E-07	1.0E-09	0.0%	4.6E-06	2.3E-04	0.0%
Chloroform	0.00044	6.80E-03	0.5	1.19	0.0093 (2)	NA	1.0E-02	4.8E-08	--	--	4.8E-07	4.8E-05	0.0%	2.7E-08	--	--	9.5E-07	9.5E-05	0.0%
Ethylbenzene	0.00707	4.90E-02	0.42	1.01	0.2	NA	1.0E-01	5.1E-06	--	--	5.1E-05	5.1E-04	0.0%	2.9E-06	--	--	1.0E-04	1.0E-03	0.0%
Isopropylbenzene (Cumene)	0.00433	8.76E-02	NA	NA	NA	NA	1.0E-01	NA	--	--	NA	--	--	NA	--	--	NA	--	--
Naphthalene	0.165	4.70E-02	0.56	1.34	0.2	NA	2.0E-02	1.3E-04	--	--	1.3E-03	6.6E-02	2.4%	7.4E-05	--	--	2.6E-03	1.3E-01	2.4%
n-Butylbenzene	0.00420	1.82E-01	NA	NA	NA	NA	4.0E-02	NA	--	--	NA	--	--	NA	--	--	NA	--	--
Tetrachloroethene (PCE)	0.00264	3.30E-02	0.91	2.18	0.2	5.4E-01	1.0E-02	1.9E-06	1.0E-06	3.5%	1.9E-05	1.9E-03	0.1%	1.1E-06	5.7E-07	3.5%	3.7E-05	3.7E-03	0.1%
Toluene	0.0111	3.10E-02	0.35	0.84	0.1	NA	2.0E-01	4.7E-06	--	--	4.7E-05	2.3E-04	0.0%	2.6E-06	--	--	9.2E-05	4.6E-04	0.0%
Trichloroethene (TCE)	0.318	1.20E-02	0.58	1.39	0.1	4.0E-01	3.0E-04	6.6E-05	2.6E-05	89.7%	6.6E-04	2.2E+00	80.9%	3.7E-05	1.5E-05	89.7%	1.3E-03	4.3E+00	80.9%
Vinyl Chloride	0.0156	5.60E-03	0.24	0.57	0.0023 (2)	1.5E+00	3.0E-03	9.8E-07	1.5E-06	5.0%	9.8E-06	3.3E-03	0.1%	5.5E-07	8.2E-07	5.0%	1.9E-05	6.4E-03	0.1%
Xylene, m/p-	0.0101	5.22E-02 (1)	0.42 (5)	1.01 (5)	0.2 (5)	NA	2.0E-01 (5)	7.7E-06	--	--	7.7E-05	3.9E-04	0.0%	4.4E-06	--	--	1.5E-04	7.6E-04	0.0%
Xylene, o-	0.00534	4.62E-02	0.42 (5)	1.01 (5)	0.2 (5)	NA	2.0E-01 (5)	3.6E-06	--	--	3.6E-05	1.8E-04	0.0%	2.0E-06	--	--	7.2E-05	3.6E-04	0.0%
Xylenes, total	0.00956	2.99E-03	0.42 (5)	1.01 (5)	0.2 (5)	NA	2.0E-01	4.2E-07	--	--	4.2E-06	2.1E-05	0.0%	2.4E-07	--	--	8.3E-06	4.1E-05	0.0%
1,1'-Biphenyl	0.00887	1.09E-01	NA	NA	NA	NA	5.0E-02	NA	--	--	NA	--	--	NA	--	--	NA	--	--
2,4-Dimethylphenol	0.06379	1.10E-02	0.52	1.24	0.02 (2)	NA	2.0E-02	1.2E-05	--	--	1.2E-04	5.8E-03	0.2%	6.5E-06	--	--	2.3E-04	1.1E-02	0.2%
2-Methylnaphthalene	0.0457	8.94E-02	0.53 (6)	2.2 (6)	0.2 (6)	NA	4.0E-03	6.8E-05	--	--	6.8E-04	1.7E-01	6.2%	3.8E-05	--	--	1.3E-03	3.3E-01	6.2%
2-Methylphenol (o-Cresol)	0.0266	7.70E-03	0.43	1.03	0.0089 (2)	NA	5.0E-02	3.1E-06	--	--	3.1E-05	6.1E-04	0.0%	1.7E-06	--	--	6.0E-05	1.2E-03	0.0%
4-Methylphenol (p-Cresol)	0.0181	7.70E-03	0.43	1.03	0.0087 (2)	NA	5.0E-03	2.1E-06	--	--	2.1E-05	4.2E-03	0.2%	1.2E-06	--	--	4.1E-05	8.2E-03	0.2%
Acenaphthene	0.0308	8.39E-02	1.1 (6)	5.6 (6)	2.9 (6)	NA	6.0E-02	6.2E-05	--	--	6.2E-04	1.0E-02	0.4%	3.5E-05	--	--	1.2E-03	2.0E-02	0.4%
Bis(2-ethylhexyl) Phthalate (BEHP)	0.0055	2.50E-02	16.64	39.93	0.2	1.4E-02	2.0E-02	1.3E-05	1.8E-07	0.6%	1.3E-04	6.4E-03	0.2%	7.2E-06	1.0E-07	0.6%	2.5E-04	1.3E-02	0.2%
Carbazole	0.0101	5.23E-02	0.9159 (7)	6.8613 (7)	0.5248 (7)	2.0E-02	NA	1.2E-05	2.3E-07	0.8%	1.2E-04	--	--	6.5E-06	1.3E-07	0.8%	2.3E-04	--	--
Dibenzofuran	0.0131	9.49E-02	0.9286 (7)	6.3174 (7)	1.3183 (7)	NA	2.0E-03	2.7E-05	--	--	2.7E-04	1.4E-01	5.0%	1.5E-05	--	--	5.4E-04	2.7E-01	5.0%
Fluorene	0.0107	1.07E-01	1.5 (6)	7.3 (6)	8.9 (6)	NA	4.0E-02	3.2E-05	--	--	3.2E-04	7.9E-03	0.3%	1.8E-05	--	--	6.2E-04	1.6E-02	0.3%
Naphthalene	0.165	4.70E-02	0.56	1.34	0.2	NA	2.0E-02	1.3E-04	--	--	1.3E-03	6.6E-02	2.4%	7.4E-05	--	--	2.6E-03	1.3E-01	2.4%
								Total ILCR:	3.0E-05	100.0%	Total HI:	2.7E+00	100.0%	Total ILCR:	1.7E-05	100.0%	Total HI:	5.4E+00	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.
(1) Value for m-Xylene
(2) Dermal Exposure Assessment Value
Kp, tau, t*, and B values are derived from the USEPA RAGS E Guidance unless otherwise noted
(3) Value for 1,2,4-Trichlorobenzene
(4) Value for 1,2-Dichloroethene (total)
(5) Value for m-Xylene
(6) VA Voluntary Remediation Program (VRP) value
(7) Calculated from the Dermal Exposure Assessment report (USEPA, 1992)

ADULT RESIDENTS - FUTURE SCENARIO
INHALATION OF VOLATILES IN GROUNDWATER - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Sp
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDo	mg/kg/d	Oral reference dose	CS	
C	mg/L	Concentration of chemical in water	CS	
IR-W	L/day	Ingestion rate of water	1.4	
EF	days/year	Exposure frequency	234	
ED	years	Exposure duration	7	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	2,555	

				Adult					
				Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,1-Dichloroethene	0.0036759	NA	5.0E-02	4.7E-06	--	--	4.7E-05	9.4E-04	0.0%
1,2,3-Trichlorobenzene	0.0024	NA	1.0E-02 (1)	3.1E-06	--	--	3.1E-05	3.1E-03	0.0%
1,2,4-Trimethylbenzene	0.0037446	NA	5.0E-02	4.8E-06	--	--	4.8E-05	9.6E-04	0.0%
1,2-Dichloroethene (cis)	0.1201417	NA	1.0E-02	1.5E-04	--	--	1.5E-03	1.5E-01	1.1%
1,2-Dichloroethene (total)	0.1749933	NA	1.0E-02 (2)	2.2E-04	--	--	2.2E-03	2.2E-01	1.6%
1,2-Dichloroethene (trans)	0.0030874	NA	2.0E-02	4.0E-06	--	--	4.0E-05	2.0E-03	0.0%
1,2-Dichloropropane	0.0003	6.8E-02	1.1E-03	3.8E-07	2.6E-08	0.0%	3.8E-06	3.5E-03	0.0%
1,3,5-Trimethylbenzene	0.0027302	NA	5.0E-02	3.5E-06	--	--	3.5E-05	7.0E-04	0.0%
1,4-Dichlorobenzene (p-)	0.002	2.4E-02	3.0E-02	2.6E-06	6.2E-08	0.0%	2.6E-05	8.5E-04	0.0%
2-Chlorotoluene	0.00225	NA	2.0E-02	2.9E-06	--	--	2.9E-05	1.4E-03	0.0%
4-Isopropyltoluene	0.0054688	NA	NA	7.0E-06	--	--	7.0E-05	--	--
Benzene	0.0098219	5.5E-02	4.0E-03	1.3E-05	6.9E-07	0.4%	1.3E-04	3.1E-02	0.2%
Bromodichloromethane	0.002	6.2E-02	2.0E-02	2.6E-06	1.6E-07	0.1%	2.6E-05	1.3E-03	0.0%
Bromoform	0.0027685	7.9E-03	2.0E-02	3.5E-06	2.8E-08	0.0%	3.5E-05	1.8E-03	0.0%
Chloroform	0.00044	NA	1.0E-02	5.6E-07	--	--	5.6E-06	5.6E-04	0.0%
Ethylbenzene	0.0070666	NA	1.0E-01	9.1E-06	--	--	9.1E-05	9.1E-04	0.0%
Isopropylbenzene (Cumene)	0.0043321	NA	1.0E-01	5.6E-06	--	--	5.6E-05	5.6E-04	0.0%
Naphthalene	0.1649775	NA	2.0E-02	2.1E-04	--	--	2.1E-03	1.1E-01	0.7%
n-Butylbenzene	0.0042013	NA	4.0E-02	5.4E-06	--	--	5.4E-05	1.3E-03	0.0%
Tetrachloroethene (PCE)	0.002637	5.4E-01	1.0E-02	3.4E-06	1.8E-06	0.9%	3.4E-05	3.4E-03	0.0%
Toluene	0.0111461	NA	2.0E-01	1.4E-05	--	--	1.4E-04	7.1E-04	0.0%
Trichloroethene (TCE)	0.3177426	4.0E-01	3.0E-04	4.1E-04	1.6E-04	83.2%	4.1E-03	1.4E+01	95.7%
Vinyl Chloride	0.0156309	1.5E+00	3.0E-03	2.0E-05	3.0E-05	15.4%	2.0E-04	6.7E-02	0.5%
Xylene, m/p-	0.0100555	NA	2.0E-01 (3)	1.3E-05	--	--	1.3E-04	6.4E-04	0.0%
Xylene, o-	0.0053411	NA	2.0E-01 (3)	6.8E-06	--	--	6.8E-05	3.4E-04	0.0%
Xylenes, total	0.00956	NA	2.0E-01	1.2E-05	--	--	1.2E-04	6.1E-04	0.0%
				Total ILCR:	2.0E-04	100.0%	Total HI:	1.4E+01	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.
(1) Value for 1,2,4-Trichlorobenzene
(2) Value for 1,2-Dichloroethene (cis)
(3) Value for Xylenes (total)

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
INGESTION OF GROUNDWATER AS DRINKING WATER - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	Young Child	
CDI	mg/kg/d	Chronic daily intake	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDo	mg/kg/d	Oral reference dose	CS	CS	
C	mg/L	Concentration of chemical in water	CS	CS	
IR-W	L/day	Ingestion rate of water	1.4	1	
EF	days/year	Exposure frequency	234	234	
ED	years	Exposure duration	7	2	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	2,555	730	

				Adult						Young Child					
				Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,2-Dichloroethene (cis)	0.05840	NA	1.0E-02	7.5E-05	--	--	7.5E-04	7.5E-02	3.3%	7.1E-05	--	--	2.5E-03	2.5E-01	3.3%
1,2-Dichloroethene (trans)	0.00415	NA	2.0E-02	5.3E-06	--	--	5.3E-05	2.7E-03	0.1%	5.1E-06	--	--	1.8E-04	8.9E-03	0.1%
Benzene	0.00121	5.5E-02	4.0E-03	1.6E-06	8.5E-08	0.1%	1.6E-05	3.9E-03	0.2%	1.5E-06	8.1E-08	0.1%	5.2E-05	1.3E-02	0.2%
Naphthalene	0.00100	NA	2.0E-02	1.3E-06	--	--	1.3E-05	6.4E-04	0.0%	1.2E-06	--	--	4.3E-05	2.1E-03	0.0%
Trichloroethene (TCE)	0.04548	4.0E-01	3.0E-04	5.8E-05	2.3E-05	18.6%	5.8E-04	1.9E+00	86.3%	5.6E-05	2.2E-05	18.6%	1.9E-03	6.5E+00	86.3%
Vinyl Chloride	0.05296	1.5E+00	3.0E-03	6.8E-05	1.0E-04	81.3%	6.8E-04	2.3E-01	10.1%	6.5E-05	9.7E-05	81.3%	2.3E-03	7.5E-01	10.1%
				Total ILCR:	1.3E-04	100.0%	Total HI:	2.3E+00	100.0%	Total ILCR:	1.2E-04	100.0%	Total HI:	7.5E+00	100.0%

NOTES:
-- = Not applicable.
NA = Toxicity criterion not available.

(1) Value for 1,2,4-Trichlorobenzene
(2) Value for 1,2-Dichloroethene (cis)
(3) Value for Xylenes (total)

ADULT AND YOUNG CHILD RESIDENTS - FUTURE SCENARIO
DERMAL CONTACT WITH GROUNDWATER - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*Kp*SA*EF*ED*ET)/(BW*AT) Inorganics ILCR = CDI*CSFo Adj CSF Adj = CSF/AD
DAD (mg/kg/d) = (C*CF*(2*Kp*SQRT(6*tau*ET/pi))*SA*EF*ED)/(BW*AT) ET <= t* (Organics) HQ = CDI/RfDo Adj RfD Adj = RfD*AD
DAD (mg/kg/d) = (C*CF*(Kp*(ET/(1+B)+2*tau*((1+3*B)/(1+B)))*SA*EF*ED)/(BW*AT) ET > t* (Benzene & Vinyl Chloride)

Parameter	Units	Description	Adult	Young Child	
DAD	mg/kg/d	Dermally absorbed dose	CS	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	CS	
HQ	NA	Hazard quotient	CS	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	CS	
SA	cm2	Skin surface area available for contact	18,000	6,600	
EF	days/year	Exposure frequency	234	234	
ED	years	Exposure duration	7	2	
ET	hours/day	Exposure time	0.25	0.33	
BW	kg	Body weight	70	15	
AT-C	days	Averaging time, carcinogens	25,550	25,550	
AT-N	days	Averaging time, noncarcinogens	2,555	730	
C	mg/L	Concentration of chemical in water	CS	CS	
CF	L/cm3	Conversion factor	1.00E-03	1.00E-03	
Kp	cm/hour	Dermal permeability coefficient	CS	CS	
AD	NA	Adjustment for absorbed dose	CS	CS	

								Adult						Young Child					
								Carcinogens			Noncarcinogens			Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	Kp (cm/hour)	tau (hours)	t* (hours)	B	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
1,2-Dichloroethene (cis)	0.05840	7.67E-03	0.37 (1)	0.89 (1)	0.0072 (1)(2)	NA	1.0E-02	6.2E-06	--	--	6.2E-05	6.2E-03	1.9%	3.5E-06	--	--	1.2E-04	1.2E-02	1.9%
1,2-Dichloroethene (trans)	0.00415	1.09E-02	0.37 (1)	0.89 (1)	0.0072 (1)(2)	NA	2.0E-02 (3)	6.3E-07	--	--	6.3E-06	3.1E-04	0.1%	3.5E-07	--	--	1.2E-05	6.1E-04	0.1%
Benzene	0.00121	1.50E-02	0.29	0.7	0.1	5.5E-02	4.0E-03	2.2E-07	1.2E-08	0.1%	2.2E-06	5.6E-04	0.2%	1.3E-07	6.9E-09	0.1%	4.4E-06	1.1E-03	0.2%
Naphthalene	0.00100	4.70E-02	0.56	1.34	0.2	NA	2.0E-02	8.0E-07	--	--	8.0E-06	4.0E-04	0.1%	4.5E-07	--	--	1.6E-05	7.9E-04	0.1%
Trichloroethene (TCE)	0.04548	1.20E-02	0.58	1.39	0.1	4.0E-01	3.0E-04 (4)	9.5E-06	3.8E-06	43.2%	9.5E-05	3.2E-01	94.5%	5.3E-06	2.1E-06	43.2%	1.9E-04	6.2E-01	94.5%
Vinyl Chloride	0.05296	5.60E-03	0.24	0.57	0.0023 (2)	1.5E+00	3.0E-03	3.3E-06	5.0E-06	56.6%	3.3E-05	1.1E-02	3.3%	1.9E-06	2.8E-06	56.6%	6.5E-05	2.2E-02	3.3%
								Total ILCR:	8.8E-06	100.0%	Total HI:	3.3E-01	100.0%	Total ILCR:	4.9E-06	100.0%	Total HI:	6.6E-01	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.
(1) Value for 1,2-Dichloroethene (total)
(2) Dermal Exposure Assessment Value

Kp, tau, t*, and B values are derived from the USEPA RAGS E Guidance unless otherwise noted

ADULT RESIDENTS - FUTURE SCENARIO
INHALATION OF VOLATILES IN GROUNDWATER - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Sp
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDo	mg/kg/d	Oral reference dose	CS	
C	mg/L	Concentration of chemical in water	CS	
IR-W	L/day	Ingestion rate of water	1.4	
EF	days/year	Exposure frequency	234	
ED	years	Exposure duration	7	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	2,555	

				Adult					
				Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,2-Dichloroethene (cis)	0.0584	NA	1.0E-02	7.5E-05	--	--	7.5E-04	7.5E-02	--
1,2-Dichloroethene (trans)	0.00415	NA	2.0E-02	5.3E-06	--	--	5.3E-05	2.7E-03	--
Benzene	0.001211	5.5E-02	4.0E-03	1.6E-06	8.5E-08	0.1%	1.6E-05	3.9E-03	0.2%
Naphthalene	0.001	NA	2.0E-02	1.3E-06	--	--	1.3E-05	6.4E-04	--
Trichloroethene (TCE)	0.045476	4.0E-01	3.0E-04	5.8E-05	2.3E-05	18.6%	5.8E-04	1.9E+00	86.3%
Vinyl Chloride	0.05296	1.5E+00	3.0E-03	6.8E-05	1.0E-04	81.3%	6.8E-04	2.3E-01	10.1%

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
ACCIDENTAL INGESTION OF SURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*CF*FI*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDo	mg/kg/d	Oral reference dose	CS	
C	mg/kg	Concentration of chemical in soil	CS	
IR-S	mg/day	Ingestion rate of soil	480	
CF	kg/mg	Conversion factor	1.00E-06	
FI	NA	Fraction of soil ingested from site	1	
EF	days/year	Exposure frequency	250	
ED	years	Exposure duration	1	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	

				Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	2.4E-02	3.0E-02	8.4E-08	2.0E-09	0.1%	5.9E-06	2.0E-04	0.2%
2-Hexanone (MBK)	1.08	NA	NA	7.3E-08	--	--	5.1E-06	--	--
Naphthalene	33.4	NA	2.0E-02	2.2E-06	--	--	1.6E-04	7.8E-03	7.5%
Acetophenone	1.30	NA	NA	8.7E-08	--	--	6.1E-06	--	--
Benzo(a)anthracene	1.36	7.3E-01	NA	9.1E-08	6.7E-08	3.6%	6.4E-06	--	--
Benzo(a)pyrene	1.47	7.3E+00	NA	9.9E-08	7.2E-07	39.2%	6.9E-06	--	--
Benzo(b)fluoranthene	2.98	7.3E-01	NA	2.0E-07	1.5E-07	8.0%	1.4E-05	--	--
Benzo(k)fluoranthene	1.75	7.3E-02	NA	1.2E-07	8.6E-09	0.5%	8.2E-06	--	--
Carbazole	3.96	2.0E-02	NA	2.7E-07	5.3E-09	0.3%	1.9E-05	--	--
Chrysene	1.74	7.3E-03	NA	1.2E-07	8.5E-10	0.0%	8.2E-06	--	--
Dibenz(a,h)anthracene	1.12	7.3E+00	NA	7.5E-08	5.5E-07	29.8%	5.2E-06	--	--
Indeno(1,2,3-cd)pyrene	1.41	7.3E-01	NA	9.5E-08	6.9E-08	3.8%	6.6E-06	--	--
Naphthalene	14.1	NA	2.0E-02	9.5E-07	--	--	6.6E-05	3.3E-03	3.2%
Arsenic	2.69	1.5E+00	3.0E-04	1.8E-07	2.7E-07	14.8%	1.3E-05	4.2E-02	40.1%
Cadmium	5.49	NA	5.0E-04	3.7E-07	--	--	2.6E-05	5.2E-02	49.1%
				Total ILCR:	1.8E-06	100.0%	Total HI:	1.0E-01	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
DERMAL CONTACT WITH SURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*AF*ABS*SA*EF*ED)/(BW*AT)
ILCR = CDI*CSFd
HQ = CDI/RfDd

Parameter	Units	Description	Adult	
DAD	mg/kg/d	Dermally absorbed dose	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	
C	mg/kg	Concentration of chemical in soil	CS	
CF	kg/mg	Conversion factor	1.00E-06	
AF	mg/cm2	Soil to skin adherence factor	0.2	
ABS	NA	Absorption fraction	(1)	
SA	cm2/day	Skin surface area available for contact	3,300	
EF	days/year	Exposure frequency	250	
ED	years	Exposure duration	1	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	

					Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	ABS	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	0.01	2.4E-02	3.0E-02	1.2E-09	2.8E-11	0.0%	8.1E-08	2.7E-06	0.1%
2-Hexanone (MBK)	1.08	0.01	NA	NA	1.0E-09	--	--	7.0E-08	--	--
Naphthalene	33.4	0.01	NA	2.0E-02	3.1E-08	--	--	2.2E-06	1.1E-04	3.3%
Acetophenone	1.30	0.1	NA	NA	1.2E-08	--	--	8.4E-07	--	--
Benzo(a)anthracene	1.36	0.13	7.3E-01	NA	1.6E-08	1.2E-08	4.1%	1.1E-06	--	--
Benzo(a)pyrene	1.47	0.13	7.3E+00	NA	1.8E-08	1.3E-07	44.3%	1.2E-06	--	--
Benzo(b)fluoranthene	2.98	0.13	7.3E-01	NA	3.6E-08	2.6E-08	9.0%	2.5E-06	--	--
Benzo(k)fluoranthene	1.75	0.13	7.3E-02	NA	2.1E-08	1.5E-09	0.5%	1.5E-06	--	--
Carbazole	3.96	0.13	2.0E-02	NA	4.7E-08	9.5E-10	0.3%	3.3E-06	--	--
Chrysene	1.74	0.13	7.3E-03	NA	2.1E-08	1.5E-10	0.1%	1.5E-06	--	--
Dibenz(a,h)anthracene	1.12	0.13	7.3E+00	NA	1.3E-08	9.8E-08	33.6%	9.4E-07	--	--
Indeno(1,2,3-cd)pyrene	1.41	0.13	7.3E-01	NA	1.7E-08	1.2E-08	4.2%	1.2E-06	--	--
Naphthalene	14.1	0.01	NA	2.0E-02	1.3E-08	--	--	9.1E-07	4.6E-05	1.4%
Arsenic	2.69	0.03	1.5E+00	3.0E-04	7.4E-09	1.1E-08	3.8%	5.2E-07	1.7E-03	52.5%
Cadmium	5.49	0.001	NA	2.5E-05	5.1E-10	--	--	3.5E-08	1.4E-03	42.8%
					Total ILCR:	2.9E-07	100.0%	Total HI:	3.3E-03	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
INHALATION OF FUGITIVE DUSTS EMANATING FROM SURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (Ca*RR*ET*EF*ED)/(BW*AT)
Where: Ca = C * (1/PEF)

ILCR = CDI*CSFi
HQ = CDI/RfDi

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFi	1/(mg/kg/d)	Inhalation cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDi	mg/kg/d	Inhalation reference dose	CS	
Ca	mg/m3	Concentration of chemical in air as fugitive dusts	CS	
C	mg/kg	Concentration of chemical in soil	CS	
VF	m3/kg	Volatilization Factor	CS	
PEF	m3/kg	Particulate emission factor	2.00E+06	
RR	m3/hour	Respiration rate	3.30	
ET	hours/day	Exposure time	8.0	
EF	days/year	Exposure frequency	250	
ED	years	Exposure duration	1	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	

						Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	VF (m^3/kg)	Ca (mg/m3)	CSFi 1/(mg/kg/d)	RfDi (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	12,950	9.72E-05	2.2E-02	2.3E-01	3.6E-07	7.9E-09	4.1%	2.5E-05	1.1E-04	0.0%
2-Hexanone (MBK)	1.08	NA	5.42E-07	NA	NA	2.0E-09	--	--	1.4E-07	--	--
Naphthalene	33.4	43,256	7.88E-04	NA	8.6E-04	2.9E-06	--	--	2.0E-04	2.4E-01	70.2%
Acetophenone	1.30	257,001	5.69E-06	NA	NA	2.1E-08	--	--	1.5E-06	--	--
Benzo(a)anthracene	1.36	18,122,159	7.57E-07	7.3E-01	NA	2.8E-09	2.0E-09	1.1%	2.0E-07	--	--
Benzo(a)pyrene	1.47	35,225,659	7.78E-07	7.3E+00	NA	2.9E-09	2.1E-08	10.9%	2.0E-07	--	--
Benzo(b)fluoranthene	2.98	21,155,386	1.64E-06	7.3E-01	NA	6.0E-09	4.4E-09	2.3%	4.2E-07	--	--
Benzo(k)fluoranthene	1.75	45,186,627	9.18E-07	7.3E-02	NA	3.4E-09	2.5E-10	0.1%	2.4E-07	--	--
Carbazole	3.96	3,478,720	3.12E-06	2.0E-02	NA	1.2E-08	2.3E-10	0.1%	8.1E-07	--	--
Chrysene	1.74	2,726,331	1.51E-06	7.3E-03	NA	5.6E-09	4.1E-11	0.0%	3.9E-07	--	--
Dibenz(a,h)anthracene	1.12	86,595,201	5.72E-07	7.3E+00	NA	2.1E-09	1.5E-08	8.0%	1.5E-07	--	--
Indeno(1,2,3-cd)pyrene	1.41	81,978,041	7.24E-07	7.3E-01	NA	2.7E-09	1.9E-09	1.0%	1.9E-07	--	--
Naphthalene	14.1	43,256	3.33E-04	NA	8.6E-04	1.2E-06	--	--	8.6E-05	1.0E-01	29.7%
Arsenic	2.69	NA	1.35E-06	1.5E+01	NA	5.0E-09	7.5E-08	39.0%	3.5E-07	--	--
Cadmium	5.49	NA	2.75E-06	6.3E+00	NA	1.0E-08	6.4E-08	33.3%	7.1E-07	--	--
						Total ILCR:	1.9E-07	100.0%	Total HI:	3.4E-01	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
ACCIDENTAL INGESTION OF SUBSURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*CF*FI*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDo	mg/kg/d	Oral reference dose	CS	
C	mg/kg	Concentration of chemical in soil	CS	
IR-S	mg/day	Ingestion rate of soil	480	
CF	kg/mg	Conversion factor	1.00E-06	
FI	NA	Fraction of soil ingested from site	1	
EF	days/year	Exposure frequency	250	
ED	years	Exposure duration	1	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	

				Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
2-Hexanone (MBK)	0.323	NA	NA	2.2E-08	--	--	1.5E-06	--	--
Benzo(a)anthracene	0.249	7.3E-01	NA	1.7E-08	1.2E-08	1.4%	1.2E-06	--	--
Benzo(a)pyrene	0.234	7.3E+00	NA	1.6E-08	1.1E-07	12.8%	1.1E-06	--	--
Benzo(b)fluoranthene	0.268	7.3E-01	NA	1.8E-08	1.3E-08	1.5%	1.3E-06	--	--
Benzo(k)fluoranthene	0.252	7.3E-02	NA	1.7E-08	1.2E-09	0.1%	1.2E-06	--	--
Carbazole	0.213	2.0E-02	NA	1.4E-08	2.9E-10	0.0%	1.0E-06	--	--
Chrysene	0.284	7.3E-03	NA	1.9E-08	1.4E-10	0.0%	1.3E-06	--	--
Dibenz(a,h)anthracene	0.213	7.3E+00	NA	1.4E-08	1.0E-07	11.6%	1.0E-06	--	--
Indeno(1,2,3-cd)pyrene	0.220	7.3E-01	NA	1.5E-08	1.1E-08	1.2%	1.0E-06	--	--
Arsenic	6.34	1.5E+00	3.0E-04	4.3E-07	6.4E-07	71.4%	3.0E-05	9.9E-02	100.0%
				Total ILCR:	8.9E-07	100.0%	Total HI:	9.9E-02	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
DERMAL CONTACT WITH SUBSURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*AF*ABS*SA*EF*ED)/(BW*AT)
ILCR = CDI*CSFd
HQ = CDI/RfDd

Parameter	Units	Description	Adult	
DAD	mg/kg/d	Dermally absorbed dose	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	
C	mg/kg	Concentration of chemical in soil	CS	
CF	kg/mg	Conversion factor	1.00E-06	
AF	mg/cm2	Soil to skin adherence factor	0.2	
ABS	NA	Absorption fraction	(1)	
SA	cm2/day	Skin surface area available for contact	3,300	
EF	days/year	Exposure frequency	250	
ED	years	Exposure duration	1	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	

					Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	ABS	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
2-Hexanone (MBK)	0.323	0.01	NA	NA	3.0E-10	--	--	2.1E-08	--	--
Benzo(a)anthracene	0.249	0.13	7.3E-01	NA	3.0E-09	2.2E-09	3.0%	2.1E-07	--	--
Benzo(a)pyrene	0.234	0.13	7.3E+00	NA	2.8E-09	2.0E-08	28.3%	2.0E-07	--	--
Benzo(b)fluoranthene	0.268	0.13	7.3E-01	NA	3.2E-09	2.3E-09	3.3%	2.2E-07	--	--
Benzo(k)fluoranthene	0.252	0.13	7.3E-02	NA	3.0E-09	2.2E-10	0.3%	2.1E-07	--	--
Carbazole	0.213	0.13	2.0E-02	NA	2.6E-09	5.1E-11	0.1%	1.8E-07	--	--
Chrysene	0.284	0.13	7.3E-03	NA	3.4E-09	2.5E-11	0.0%	2.4E-07	--	--
Dibenz(a,h)anthracene	0.213	0.13	7.3E+00	NA	2.5E-09	1.9E-08	25.8%	1.8E-07	--	--
Indeno(1,2,3-cd)pyrene	0.220	0.13	7.3E-01	NA	2.6E-09	1.9E-09	2.7%	1.9E-07	--	--
Arsenic	6.34	0.03	1.5E+00	3.0E-04	1.8E-08	2.6E-08	36.5%	1.2E-06	4.1E-03	100.0%
					Total ILCR:	7.2E-08	100.0%	Total HI:	4.1E-03	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
INHALATION OF FUGITIVE DUSTS EMANATING FROM SUBSURFACE SOIL - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (Ca*RR*ET*EF*ED)/(BW*AT)
Where: Ca = C * (1/PEF)

ILCR = CDI*CSFi
HQ = CDI/RfDi

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFi	1/(mg/kg/d)	Inhalation cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDi	mg/kg/d	Inhalation reference dose	CS	
Ca	mg/m3	Concentration of chemical in air as fugitive dusts	CS	
C	mg/kg	Concentration of chemical in soil	CS	
VF	m3/kg	Volatilization Factor	CS	
PEF	m3/kg	Particulate emission factor	2.00E+06	
RR	m3/hour	Respiration rate	3.30	
ET	hours/day	Exposure time	8.0	
EF	days/year	Exposure frequency	250	
ED	years	Exposure duration	1	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	

						Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	VF (m^3/kg)	Ca (mg/m3)	CSFi 1/(mg/kg/d)	RfDi (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
2-Hexanone (MBK)	0.323	NA	1.62E-07	NA	NA	6.0E-10	--	--	4.2E-08	--	--
Benzo(a)anthracene	0.249	18,122,159	1.39E-07	7.3E-01	NA	5.1E-10	3.7E-10	0.2%	3.6E-08	--	--
Benzo(a)pyrene	0.234	35,225,659	1.24E-07	7.3E+00	NA	4.6E-10	3.3E-09	1.8%	3.2E-08	--	--
Benzo(b)fluoranthene	0.268	21,155,386	1.47E-07	7.3E-01	NA	5.4E-10	4.0E-10	0.2%	3.8E-08	--	--
Benzo(k)fluoranthene	0.252	45,186,627	1.32E-07	7.3E-02	NA	4.9E-10	3.6E-11	0.0%	3.4E-08	--	--
Carbazole	0.213	3,478,720	1.68E-07	2.0E-02	NA	6.2E-10	1.2E-11	0.0%	4.3E-08	--	--
Chrysene	0.284	2,726,331	2.47E-07	7.3E-03	NA	9.1E-10	6.6E-12	0.0%	6.4E-08	--	--
Dibenz(a,h)anthracene	0.213	86,595,201	1.09E-07	7.3E+00	NA	4.0E-10	2.9E-09	1.6%	2.8E-08	--	--
Indeno(1,2,3-cd)pyrene	0.220	81,978,041	1.13E-07	7.3E-01	NA	4.2E-10	3.0E-10	0.2%	2.9E-08	--	--
Arsenic	6.34	NA	3.18E-06	1.5E+01	NA	1.2E-08	1.8E-07	96.0%	8.2E-07	--	--
						Total ILCR:	1.8E-07	100.0%	Total HI:	--	--

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
DERMAL CONTACT WITH GROUNDWATER - SWMU 303/318
REASONABLE MAXIMUM EXPOSURE
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*Kp*SA*EF*ED*ET)/(BW*AT) Inorganics ILCR = CDI*CSFo Adj CSF Adj = CSF/AD
DAD (mg/kg/d) = (C*CF*(2*Kp*SQRT(6*tau*ET/pi))*SA*EF*ED)/(BW*AT) ET <= t* (Organics) HQ = CDI/RfDo Adj RfD Adj = RfD*AD
DAD (mg/kg/d) = (C*CF*(Kp*(ET/(1+B)+2*tau*((1+3*B)/(1+B)))*SA*EF*ED)/(BW*AT) ET > t* (Benzene & Vinyl Chloride)

Parameter	Units	Description	Adult	
DAD	mg/kg/d	Dermally absorbed dose	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	
SA	cm2	Skin surface area available for contact	3,300	
EF	days/year	Exposure frequency	250	
ED	years	Exposure duration	1	
ET	hours/day	Exposure time	2.60	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	
C	mg/L	Concentration of chemical in water	CS	
CF	L/cm3	Conversion factor	1.00E-03	
Kp	cm/hour	Dermal permeability coefficient	CS	
AD	NA	Adjustment for absorbed dose	CS	

								Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	Kp (cm/hour)	tau (hours)	t* (hours)	B	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
1,1-Dichloroethene	0.00368	1.20E-02	0.37	0.89	0.013 (2)	NA	5.0E-02	6.8E-08	--	--	4.7E-06	9.5E-05	0.0%
1,2,3-Trichlorobenzene	0.0024	7.19E-02	1.11 (3)	2.66 (3)	0.3 (3)	NA	1.0E-02 (3)	3.7E-07	--	--	2.6E-05	2.6E-03	0.1%
1,2,4-Trimethylbenzene	0.00374	1.05E-01	NA	NA	NA	NA	5.0E-02	NA	--	--	NA	--	--
1,2-Dichloroethene (cis)	0.120	7.67E-03	0.37 (4)	0.89 (4)	0.0072 (2)(4)	NA	1.0E-02	1.4E-06	--	--	9.9E-05	9.9E-03	0.5%
1,2-Dichloroethene (total)	0.175	7.70E-03	0.37	0.89	0.0072 (2)	NA	1.0E-02 (4)	2.1E-06	--	--	1.4E-04	1.4E-02	0.8%
1,2-Dichloroethene (trans)	0.00309	1.09E-02	0.37 (4)	0.89 (4)	0.0072 (2)(4)	NA	2.0E-02	5.2E-08	--	--	3.6E-06	1.8E-04	0.0%
1,2-Dichloropropane	0.0003	7.80E-03	0.46	1.1	0.01 (2)	6.8E-02	1.1E-03	3.8E-09	2.6E-10	0.0%	2.7E-07	2.4E-04	0.0%
1,3,5-Trimethylbenzene	0.00273	6.08E-02	NA	NA	NA	NA	5.0E-02	NA	--	--	NA	--	--
1,4-Dichlorobenzene (p-)	0.002	4.20E-02	0.71	1.71	0.2	2.4E-02	3.0E-02	1.6E-07	3.8E-09	0.1%	1.1E-05	3.7E-04	0.0%
2-Chlorotoluene	0.00225	5.60E-02	NA	NA	NA	NA	2.0E-02	NA	--	--	NA	--	--
4-Isopropyltoluene	0.00547	1.43E-01	NA	NA	NA	NA	NA	NA	--	--	NA	--	--
Benzene	0.00982	1.50E-02	0.29	0.7	0.1	5.5E-02	4.0E-03	2.1E-07	1.1E-08	0.4%	1.5E-05	3.6E-03	0.2%
Bromodichloromethane	0.002	4.60E-03	0.88	2.12	0.012 (2)	6.2E-02	2.0E-02	1.9E-08	1.2E-09	0.0%	1.3E-06	6.5E-05	0.0%
Bromoform	0.00277	2.20E-03	2.79	6.7	0.023 (2)	7.9E-03	2.0E-02	2.1E-08	1.7E-10	0.0%	1.5E-06	7.3E-05	0.0%
Chloroform	0.00044	6.80E-03	0.5	1.19	0.0093 (2)	NA	1.0E-02	5.0E-09	--	--	3.5E-07	3.5E-05	0.0%
Ethylbenzene	0.00707	4.90E-02	0.42	1.01	0.2	NA	1.0E-01	5.2E-07	--	--	3.7E-05	3.7E-04	0.0%
Isopropylbenzene (Cumene)	0.00433	8.76E-02	NA	NA	NA	NA	1.0E-01	NA	--	--	NA	--	--
Naphthalene	0.165	4.70E-02	0.56	1.34	0.2	NA	2.0E-02	1.3E-05	--	--	9.2E-04	4.6E-02	2.4%
n-Butylbenzene	0.00420	1.82E-01	NA	NA	NA	NA	4.0E-02	NA	--	--	NA	--	--
Tetrachloroethene (PCE)	0.00264	3.30E-02	0.91	2.18	0.2	5.4E-01	1.0E-02	1.8E-07	1.0E-07	3.4%	1.3E-05	1.3E-03	0.1%
Toluene	0.0111	3.10E-02	0.35	0.84	0.1	NA	2.0E-01	5.1E-07	--	--	3.6E-05	1.8E-04	0.0%
Trichloroethene (TCE)	0.318	1.20E-02	0.58	1.39	0.1	4.0E-01	3.0E-04	6.6E-06	2.6E-06	88.6%	4.6E-04	1.5E+00	81.2%
Vinyl Chloride	0.0156	5.60E-03	0.24	0.57	0.0023 (2)	1.5E+00	3.0E-03	1.2E-07	1.9E-07	6.3%	8.7E-06	2.9E-03	0.2%
Xylene, m/p-	0.0101	5.22E-02 (1)	0.42 (5)	1.01 (5)	0.2 (5)	NA	2.0E-01 (5)	8.0E-07	--	--	5.6E-05	2.8E-04	0.0%
Xylene, o-	0.00534	4.62E-02	0.42 (5)	1.01 (5)	0.2 (5)	NA	2.0E-01 (5)	3.7E-07	--	--	2.6E-05	1.3E-04	0.0%
Xylenes, total	0.00956	2.99E-03	0.42 (5)	1.01 (5)	0.2 (5)	NA	2.0E-01	4.3E-08	--	--	3.0E-06	1.5E-05	0.0%
1,1'-Biphenyl	0.00887	1.09E-01	NA	NA	NA	NA	5.0E-02	NA	--	--	NA	--	--
2,4-Dimethylphenol	0.06379	1.10E-02	0.52	1.24	0.02 (2)	NA	2.0E-02	1.2E-06	--	--	8.2E-05	4.1E-03	0.2%
2-Methylnaphthalene	0.0457	8.94E-02	0.53 (6)	2.2 (6)	0.2 (6)	NA	4.0E-03	6.7E-06	--	--	4.7E-04	1.2E-01	6.2%
2-Methylphenol (o-Cresol)	0.0266	7.70E-03	0.43	1.03	0.0089 (2)	NA	5.0E-02	3.3E-07	--	--	2.3E-05	4.6E-04	0.0%
4-Methylphenol (p-Cresol)	0.0181	7.70E-03	0.43	1.03	0.0087 (2)	NA	5.0E-03	2.2E-07	--	--	1.6E-05	3.1E-03	0.2%
Acenaphthene	0.0308	8.39E-02	1.1 (6)	5.6 (6)	2.9 (6)	NA	6.0E-02	5.6E-06	--	--	3.9E-04	6.5E-03	0.3%
Bis(2-ethylhexyl) Phthalate (BEHP)	0.0055	2.50E-02	16.64	39.93	0.2	1.4E-02	2.0E-02	1.2E-06	1.6E-08	0.5%	8.1E-05	4.0E-03	0.2%
Carbazole	0.0101	5.23E-02	0.9159 (7)	6.8613 (7)	0.5248 (7)	2.0E-02	NA	1.0E-06	2.1E-08	0.7%	7.3E-05	--	--
Dibenzofuran	0.0131	9.49E-02	0.9286 (7)	6.3174 (7)	1.3183 (7)	NA	2.0E-03	2.5E-06	--	--	1.7E-04	8.6E-02	4.6%
Fluorene	0.0107	1.07E-01	1.5 (6)	7.3 (6)	8.9 (6)	NA	4.0E-02	2.9E-06	--	--	2.0E-04	5.0E-03	0.3%
Naphthalene	0.165	4.70E-02	0.56	1.34	0.2	NA	2.0E-02	1.3E-05	--	--	9.2E-04	4.6E-02	2.4%
								Total ILCR:	3.0E-06	100.0%	Total HI:	1.9E+00	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.
Kp, tau, t*, and B values are derived from the USEPA RAGS E Guidance unless otherwise noted
(1) Value for m-Xylene
(2) Dermal Exposure Assessment Value
(3) Value for 1,2,4-Trichlorobenzene
(4) Value for 1,2-Dichloroethene (total)
(5) Value for m-Xylene
(6) VA Voluntary Remediation Program (VRP) value
(7) Calculated from the Dermal Exposure Assessment report (USEPA, 1992)

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
ACCIDENTAL INGESTION OF SURFACE SOIL - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*CF*FI*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDo	mg/kg/d	Oral reference dose	CS	
C	mg/kg	Concentration of chemical in soil	CS	
IR-S	mg/day	Ingestion rate of soil	240	
CF	kg/mg	Conversion factor	1.00E-06	
FI	NA	Fraction of soil ingested from site	1	
EF	days/year	Exposure frequency	219	
ED	years	Exposure duration	1	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	

				Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	2.4E-02	3.0E-02	3.7E-08	8.8E-10	0.1%	2.6E-06	8.6E-05	0.2%
2-Hexanone (MBK)	1.08	NA	NA	3.2E-08	--	--	2.2E-06	--	--
Naphthalene	33.4	NA	2.0E-02	9.8E-07	--	--	6.9E-05	3.4E-03	7.5%
Acetophenone	1.30	NA	NA	3.8E-08	--	--	2.7E-06	--	--
Benzo(a)anthracene	1.36	7.3E-01	NA	4.0E-08	2.9E-08	3.6%	2.8E-06	--	--
Benzo(a)pyrene	1.47	7.3E+00	NA	4.3E-08	3.2E-07	39.2%	3.0E-06	--	--
Benzo(b)fluoranthene	2.98	7.3E-01	NA	8.8E-08	6.4E-08	8.0%	6.1E-06	--	--
Benzo(k)fluoranthene	1.75	7.3E-02	NA	5.2E-08	3.8E-09	0.5%	3.6E-06	--	--
Carbazole	3.96	2.0E-02	NA	1.2E-07	2.3E-09	0.3%	8.1E-06	--	--
Chrysene	1.74	7.3E-03	NA	5.1E-08	3.7E-10	0.0%	3.6E-06	--	--
Dibenz(a,h)anthracene	1.12	7.3E+00	NA	3.3E-08	2.4E-07	29.8%	2.3E-06	--	--
Indeno(1,2,3-cd)pyrene	1.41	7.3E-01	NA	4.1E-08	3.0E-08	3.8%	2.9E-06	--	--
Naphthalene	14.1	NA	2.0E-02	4.1E-07	--	--	2.9E-05	1.5E-03	3.2%
Arsenic	2.69	1.5E+00	3.0E-04	7.9E-08	1.2E-07	14.8%	5.5E-06	1.8E-02	40.1%
Cadmium	5.49	NA	5.0E-04	1.6E-07	--	--	1.1E-05	2.3E-02	49.1%
				Total ILCR:	8.0E-07	100.0%	Total HI:	4.6E-02	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
DERMAL CONTACT WITH SURFACE SOIL - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*AF*ABS*SA*EF*ED)/(BW*AT)
ILCR = CDI*CSFd
HQ = CDI/RfDd

Parameter	Units	Description	Adult	
DAD	mg/kg/d	Dermally absorbed dose	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	
C	mg/kg	Concentration of chemical in soil	CS	
CF	kg/mg	Conversion factor	1.00E-06	
AF	mg/cm2	Soil to skin adherence factor	0.02	
ABS	NA	Absorption fraction	(1)	
SA	cm2/day	Skin surface area available for contact	3,300	
EF	days/year	Exposure frequency	219	
ED	years	Exposure duration	1	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	

					Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	ABS	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	0.01	2.4E-02	3.0E-02	1.0E-10	2.4E-12	0.0%	7.1E-09	2.4E-07	0.1%
2-Hexanone (MBK)	1.08	0.01	NA	NA	8.7E-11	--	--	6.1E-09	--	--
Naphthalene	33.4	0.01	NA	2.0E-02	2.7E-09	--	--	1.9E-07	9.4E-06	3.3%
Acetophenone	1.30	0.1	NA	NA	1.0E-09	--	--	7.3E-08	--	--
Benzo(a)anthracene	1.36	0.13	7.3E-01	NA	1.4E-09	1.0E-09	4.1%	1.0E-07	--	--
Benzo(a)pyrene	1.47	0.13	7.3E+00	NA	1.5E-09	1.1E-08	44.3%	1.1E-07	--	--
Benzo(b)fluoranthene	2.98	0.13	7.3E-01	NA	3.1E-09	2.3E-09	9.0%	2.2E-07	--	--
Benzo(k)fluoranthene	1.75	0.13	7.3E-02	NA	1.8E-09	1.3E-10	0.5%	1.3E-07	--	--
Carbazole	3.96	0.13	2.0E-02	NA	4.2E-09	8.3E-11	0.3%	2.9E-07	--	--
Chrysene	1.74	0.13	7.3E-03	NA	1.8E-09	1.3E-11	0.1%	1.3E-07	--	--
Dibenz(a,h)anthracene	1.12	0.13	7.3E+00	NA	1.2E-09	8.6E-09	33.6%	8.2E-08	--	--
Indeno(1,2,3-cd)pyrene	1.41	0.13	7.3E-01	NA	1.5E-09	1.1E-09	4.2%	1.0E-07	--	--
Naphthalene	14.1	0.01	NA	2.0E-02	1.1E-09	--	--	8.0E-08	4.0E-06	1.4%
Arsenic	2.69	0.03	1.5E+00	3.0E-04	6.5E-10	9.8E-10	3.8%	4.6E-08	1.5E-04	52.5%
Cadmium	5.49	0.001	NA	2.5E-05	4.4E-11	--	--	3.1E-09	1.2E-04	42.8%
					Total ILCR:	2.5E-08	100.0%	Total HI:	2.9E-04	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
INHALATION OF FUGITIVE DUSTS EMANATING FROM SURFACE SOIL - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (Ca*RR*ET*EF*ED)/(BW*AT)
Where: Ca = C * (1/PEF)

ILCR = CDI*CSFi
HQ = CDI/RfDi

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFi	1/(mg/kg/d)	Inhalation cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDi	mg/kg/d	Inhalation reference dose	CS	
Ca	mg/m3	Concentration of chemical in air as fugitive dusts	CS	
C	mg/kg	Concentration of chemical in soil	CS	
VF	m3/kg	Volatilization Factor	CS	
PEF	m3/kg	Particulate emission factor	2.00E+06	
RR	m3/hour	Respiration rate	1.30	
ET	hours/day	Exposure time	8.0	
EF	days/year	Exposure frequency	219	
ED	years	Exposure duration	1	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	

						Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	VF (m^3/kg)	Ca (mg/m3)	CSFi 1/(mg/kg/d)	RfDi (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
1,4-Dichlorobenzene (p-)	1.25	12,950	9.72E-05	2.2E-02	2.3E-01	1.2E-07	2.7E-09	4.1%	8.7E-06	3.8E-05	0.0%
2-Hexanone (MBK)	1.08	NA	5.42E-07	NA	NA	6.9E-10	--	--	4.8E-08	--	--
Naphthalene	33.4	43,256	7.88E-04	NA	8.6E-04	1.0E-06	--	--	7.0E-05	8.2E-02	70.2%
Acetophenone	1.30	257,001	5.69E-06	NA	NA	7.2E-09	--	--	5.1E-07	--	--
Benzo(a)anthracene	1.36	18,122,159	7.57E-07	7.3E-01	NA	9.6E-10	7.0E-10	1.1%	6.7E-08	--	--
Benzo(a)pyrene	1.47	35,225,659	7.78E-07	7.3E+00	NA	9.9E-10	7.2E-09	10.9%	6.9E-08	--	--
Benzo(b)fluoranthene	2.98	21,155,386	1.64E-06	7.3E-01	NA	2.1E-09	1.5E-09	2.3%	1.5E-07	--	--
Benzo(k)fluoranthene	1.75	45,186,627	9.18E-07	7.3E-02	NA	1.2E-09	8.5E-11	0.1%	8.2E-08	--	--
Carbazole	3.96	3,478,720	3.12E-06	2.0E-02	NA	4.0E-09	8.0E-11	0.1%	2.8E-07	--	--
Chrysene	1.74	2,726,331	1.51E-06	7.3E-03	NA	1.9E-09	1.4E-11	0.0%	1.3E-07	--	--
Dibenz(a,h)anthracene	1.12	86,595,201	5.72E-07	7.3E+00	NA	7.3E-10	5.3E-09	8.0%	5.1E-08	--	--
Indeno(1,2,3-cd)pyrene	1.41	81,978,041	7.24E-07	7.3E-01	NA	9.2E-10	6.7E-10	1.0%	6.5E-08	--	--
Naphthalene	14.1	43,256	3.33E-04	NA	8.6E-04	4.2E-07	--	--	3.0E-05	3.5E-02	29.7%
Arsenic	2.69	NA	1.35E-06	1.5E+01	NA	1.7E-09	2.6E-08	39.0%	1.2E-07	--	--
Cadmium	5.49	NA	2.75E-06	6.3E+00	NA	3.5E-09	2.2E-08	33.3%	2.5E-07	--	--
						Total ILCR:	6.6E-08	100.0%	Total HI:	1.2E-01	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
ACCIDENTAL INGESTION OF SUBSURFACE SOIL - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (C*IR*CF*FI*EF*ED)/(BW*AT)
ILCR = CDI*CSFo
HQ = CDI/RfDo

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFo	1/(mg/kg/d)	Oral cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDo	mg/kg/d	Oral reference dose	CS	
C	mg/kg	Concentration of chemical in soil	CS	
IR-S	mg/day	Ingestion rate of soil	240	
CF	kg/mg	Conversion factor	1.00E-06	
FI	NA	Fraction of soil ingested from site	1	
EF	days/year	Exposure frequency	219	
ED	years	Exposure duration	1	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	

				Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	CSFo 1/(mg/kg/d)	RfDo (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
2-Hexanone (MBK)	0.323	NA	NA	9.5E-09	--	--	6.6E-07	--	--
Benzo(a)anthracene	0.249	7.3E-01	NA	7.3E-09	5.3E-09	1.4%	5.1E-07	--	--
Benzo(a)pyrene	0.234	7.3E+00	NA	6.9E-09	5.0E-08	12.8%	4.8E-07	--	--
Benzo(b)fluoranthene	0.268	7.3E-01	NA	7.9E-09	5.7E-09	1.5%	5.5E-07	--	--
Benzo(k)fluoranthene	0.252	7.3E-02	NA	7.4E-09	5.4E-10	0.1%	5.2E-07	--	--
Carbazole	0.213	2.0E-02	NA	6.3E-09	1.3E-10	0.0%	4.4E-07	--	--
Chrysene	0.284	7.3E-03	NA	8.3E-09	6.1E-11	0.0%	5.8E-07	--	--
Dibenz(a,h)anthracene	0.213	7.3E+00	NA	6.2E-09	4.6E-08	11.6%	4.4E-07	--	--
Indeno(1,2,3-cd)pyrene	0.220	7.3E-01	NA	6.5E-09	4.7E-09	1.2%	4.5E-07	--	--
Arsenic	6.34	1.5E+00	3.0E-04	1.9E-07	2.8E-07	71.4%	1.3E-05	4.3E-02	100.0%
				Total ILCR:	3.9E-07	100.0%	Total HI:	4.3E-02	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
DERMAL CONTACT WITH SUBSURFACE SOIL - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*AF*ABS*SA*EF*ED)/(BW*AT)
ILCR = CDI*CSFd
HQ = CDI/RfDd

Parameter	Units	Description	Adult	
DAD	mg/kg/d	Dermally absorbed dose	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	
C	mg/kg	Concentration of chemical in soil	CS	
CF	kg/mg	Conversion factor	1.00E-06	
AF	mg/cm2	Soil to skin adherence factor	0.02	
ABS	NA	Absorption fraction	(1)	
SA	cm2/day	Skin surface area available for contact	3,300	
EF	days/year	Exposure frequency	219	
ED	years	Exposure duration	1	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	

					Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	ABS	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
2-Hexanone (MBK)	0.323	0.01	NA	NA	2.6E-11	--	--	1.8E-09	--	--
Benzo(a)anthracene	0.249	0.13	7.3E-01	NA	2.6E-10	1.9E-10	3.0%	1.8E-08	--	--
Benzo(a)pyrene	0.234	0.13	7.3E+00	NA	2.5E-10	1.8E-09	28.3%	1.7E-08	--	--
Benzo(b)fluoranthene	0.268	0.13	7.3E-01	NA	2.8E-10	2.1E-10	3.3%	2.0E-08	--	--
Benzo(k)fluoranthene	0.252	0.13	7.3E-02	NA	2.6E-10	1.9E-11	0.3%	1.9E-08	--	--
Carbazole	0.213	0.13	2.0E-02	NA	2.2E-10	4.5E-12	0.1%	1.6E-08	--	--
Chrysene	0.284	0.13	7.3E-03	NA	3.0E-10	2.2E-12	0.0%	2.1E-08	--	--
Dibenz(a,h)anthracene	0.213	0.13	7.3E+00	NA	2.2E-10	1.6E-09	25.8%	1.6E-08	--	--
Indeno(1,2,3-cd)pyrene	0.220	0.13	7.3E-01	NA	2.3E-10	1.7E-10	2.7%	1.6E-08	--	--
Arsenic	6.34	0.03	1.5E+00	3.0E-04	1.5E-09	2.3E-09	36.5%	1.1E-07	3.6E-04	100.0%
					Total ILCR:	6.3E-09	100.0%	Total HI:	3.6E-04	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
INHALATION OF FUGITIVE DUSTS EMANATING FROM SUBSURFACE SOIL - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

CDI (mg/kg/d) = (Ca*RR*ET*EF*ED)/(BW*AT)
Where: Ca = C * (1/PEF)

ILCR = CDI*CSFi
HQ = CDI/RfDi

Parameter	Units	Description	Adult	
CDI	mg/kg/d	Chronic daily intake	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFi	1/(mg/kg/d)	Inhalation cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDi	mg/kg/d	Inhalation reference dose	CS	
Ca	mg/m3	Concentration of chemical in air as fugitive dusts	CS	
C	mg/kg	Concentration of chemical in soil	CS	
VF	m3/kg	Volatilization Factor	CS	
PEF	m3/kg	Particulate emission factor	2.00E+06	
RR	m3/hour	Respiration rate	1.30	
ET	hours/day	Exposure time	8.0	
EF	days/year	Exposure frequency	219	
ED	years	Exposure duration	1	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	

						Carcinogens			Noncarcinogens		
Parameter	C (mg/kg)	VF (m^3/kg)	Ca (mg/m3)	CSFi 1/(mg/kg/d)	RfDi (mg/kg/d)	CDI (mg/kg/d)	ILCR	% Contrib. Total ILCR	CDI (mg/kg/d)	HQ	% Contrib. HI
2-Hexanone (MBK)	0.323	NA	1.62E-07	NA	NA	2.1E-10	--	--	1.4E-08	--	--
Benzo(a)anthracene	0.249	18,122,159	1.39E-07	7.3E-01	NA	1.8E-10	1.3E-10	0.2%	1.2E-08	--	--
Benzo(a)pyrene	0.234	35,225,659	1.24E-07	7.3E+00	NA	1.6E-10	1.1E-09	1.8%	1.1E-08	--	--
Benzo(b)fluoranthene	0.268	21,155,386	1.47E-07	7.3E-01	NA	1.9E-10	1.4E-10	0.2%	1.3E-08	--	--
Benzo(k)fluoranthene	0.252	45,186,627	1.32E-07	7.3E-02	NA	1.7E-10	1.2E-11	0.0%	1.2E-08	--	--
Carbazole	0.213	3,478,720	1.68E-07	2.0E-02	NA	2.1E-10	4.3E-12	0.0%	1.5E-08	--	--
Chrysene	0.284	2,726,331	2.47E-07	7.3E-03	NA	3.1E-10	2.3E-12	0.0%	2.2E-08	--	--
Dibenz(a,h)anthracene	0.213	86,595,201	1.09E-07	7.3E+00	NA	1.4E-10	1.0E-09	1.6%	9.7E-09	--	--
Indeno(1,2,3-cd)pyrene	0.220	81,978,041	1.13E-07	7.3E-01	NA	1.4E-10	1.1E-10	0.2%	1.0E-08	--	--
Arsenic	6.34	NA	3.18E-06	1.5E+01	NA	4.0E-09	6.1E-08	96.0%	2.8E-07	--	--
						Total ILCR:	6.3E-08	100.0%	Total HI:	--	--

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.

ADULT CONSTRUCTION WORKERS - FUTURE SCENARIO
DERMAL CONTACT WITH GROUNDWATER - SWMU 303/318
CENTRAL TENDENCY
POTENTIAL CARCINOGENIC AND NONCARCINOGENIC RISKS
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

DAD (mg/kg/d) = (C*CF*Kp*SA*EF*ED*ET)/(BW*AT) Inorganics ILCR = CDI*CSFo Adj CSF Adj = CSF/AD
DAD (mg/kg/d) = (C*CF*(2*Kp*SQRT(6*tau*ET/pi))*SA*EF*ED)/(BW*AT) ET <= t* (Organics) HQ = CDI/RfDo Adj RfD Adj = RfD*AD
DAD (mg/kg/d) = (C*CF*(Kp*(ET/(1+B)+2*tau*((1+3*B)/(1+B)))*SA*EF*ED)/(BW*AT) ET > t* (Benzene & Vinyl Chloride)

Parameter	Units	Description	Adult	
DAD	mg/kg/d	Dermally absorbed dose	CS	(Chemical Specific)
ILCR	NA	Incremental lifetime cancer risk	CS	
CSFd	1/(mg/kg/d)	Dermal cancer slope factor	CS	
HQ	NA	Hazard quotient	CS	
RfDd	mg/kg/d	Dermal reference dose	CS	
SA	cm2	Skin surface area available for contact	3,300	
EF	days/year	Exposure frequency	219	
ED	years	Exposure duration	1	
ET	hours/day	Exposure time	2.60	
BW	kg	Body weight	70	
AT-C	days	Averaging time, carcinogens	25,550	
AT-N	days	Averaging time, noncarcinogens	365	
C	mg/L	Concentration of chemical in water	CS	
CF	L/cm3	Conversion factor	1.00E-03	
Kp	cm/hour	Dermal permeability coefficient	CS	
AD	NA	Adjustment for absorbed dose	CS	

								Carcinogens			Noncarcinogens		
Parameter	C (mg/L)	Kp (cm/hour)	tau (hours)	t* (hours)	B	CSFd 1/(mg/kg/d)	RfDd (mg/kg/d)	DAD (mg/kg/d)	ILCR	% Contrib. Total ILCR	DAD (mg/kg/d)	HQ	% Contrib. HI
1,1-Dichloroethene	0.00368	1.20E-02	0.37	0.89	0.013 (2)	NA	5.0E-02	5.9E-08	--	--	4.1E-06	8.3E-05	0.0%
1,2,3-Trichlorobenzene	0.0024	7.19E-02	1.11 (3)	2.66 (3)	0.3 (3)	NA	1.0E-02 (3)	3.3E-07	--	--	2.3E-05	2.3E-03	0.1%
1,2,4-Trimethylbenzene	0.00374	1.05E-01	NA	NA	NA	NA	5.0E-02	NA	--	--	NA	--	--
1,2-Dichloroethene (cis)	0.120	7.67E-03	0.37 (4)	0.89 (4)	0.0072 (2)(	NA	1.0E-02	1.2E-06	--	--	8.7E-05	8.7E-03	0.5%
1,2-Dichloroethene (total)	0.175	7.70E-03	0.37	0.89	0.0072 (2)	NA	1.0E-02 (4)	1.8E-06	--	--	1.3E-04	1.3E-02	0.8%
1,2-Dichloroethene (trans)	0.00309	1.09E-02	0.37 (4)	0.89 (4)	0.0072 (2)(	NA	2.0E-02	4.5E-08	--	--	3.2E-06	1.6E-04	0.0%
1,2-Dichloropropane	0.0003	7.80E-03	0.46	1.1	0.01 (2)	6.8E-02	1.1E-03	3.3E-09	2.3E-10	0.0%	2.3E-07	2.1E-04	0.0%
1,3,5-Trimethylbenzene	0.00273	6.08E-02	NA	NA	NA	NA	5.0E-02	NA	--	--	NA	--	--
1,4-Dichlorobenzene (p-)	0.002	4.20E-02	0.71	1.71	0.2	2.4E-02	3.0E-02	1.4E-07	3.3E-09	0.1%	9.6E-06	3.2E-04	0.0%
2-Chlorotoluene	0.00225	5.60E-02	NA	NA	NA	NA	2.0E-02	NA	--	--	NA	--	--
4-Isopropyltoluene	0.00547	1.43E-01	NA	NA	NA	NA	NA	NA	--	--	NA	--	--
Benzene	0.00982	1.50E-02	0.29	0.7	0.1	5.5E-02	4.0E-03	1.8E-07	1.0E-08	0.4%	1.3E-05	3.2E-03	0.2%
Bromodichloromethane	0.002	4.60E-03	0.88	2.12	0.012 (2)	6.2E-02	2.0E-02	1.6E-08	1.0E-09	0.0%	1.1E-06	5.7E-05	0.0%
Bromoform	0.00277	2.20E-03	2.79	6.7	0.023 (2)	7.9E-03	2.0E-02	1.8E-08	1.4E-10	0.0%	1.3E-06	6.4E-05	0.0%
Chloroform	0.00044	6.80E-03	0.5	1.19	0.0093 (2)	NA	1.0E-02	4.3E-09	--	--	3.0E-07	3.0E-05	0.0%
Ethylbenzene	0.00707	4.90E-02	0.42	1.01	0.2	NA	1.0E-01	4.6E-07	--	--	3.2E-05	3.2E-04	0.0%
Isopropylbenzene (Cumene)	0.00433	8.76E-02	NA	NA	NA	NA	1.0E-01	NA	--	--	NA	--	--
Naphthalene	0.165	4.70E-02	0.56	1.34	0.2	NA	2.0E-02	1.1E-05	--	--	8.0E-04	4.0E-02	2.4%
n-Butylbenzene	0.00420	1.82E-01	NA	NA	NA	NA	4.0E-02	NA	--	--	NA	--	--
Tetrachloroethene (PCE)	0.00264	3.30E-02	0.91	2.18	0.2	5.4E-01	1.0E-02	1.6E-07	8.7E-08	3.4%	1.1E-05	1.1E-03	0.1%
Toluene	0.0111	0.00E+00	0.35	0.84	0.1	NA	2.0E-01	0.0E+00	--	--	0.0E+00	0.0E+00	0.0%
Trichloroethene (TCE)	0.318	1.20E-02	0.58	1.39	0.1	4.0E-01	3.0E-04	5.8E-06	2.3E-06	88.6%	4.0E-04	1.3E+00	81.2%
Vinyl Chloride	0.0156	5.60E-03	0.24	0.57	0.0023 (2)	1.5E+00	3.0E-03	1.1E-07	1.6E-07	6.3%	7.6E-06	2.5E-03	0.2%
Xylene, m/p-	0.0101	5.22E-02 (1)	0.42 (5)	1.01 (5)	0.2 (5)	NA	2.0E-01 (5)	7.0E-07	--	--	4.9E-05	2.4E-04	0.0%
Xylene, o-	0.00534	4.62E-02	0.42 (5)	1.01 (5)	0.2 (5)	NA	2.0E-01 (5)	3.3E-07	--	--	2.3E-05	1.1E-04	0.0%
Xylenes, total	0.00956	2.99E-03	0.42 (5)	1.01 (5)	0.2 (5)	NA	2.0E-01	3.8E-08	--	--	2.7E-06	1.3E-05	0.0%
1,1'-Biphenyl	0.00887	1.09E-01	NA	NA	NA	NA	5.0E-02	NA	--	--	NA	--	--
2,4-Dimethylphenol	0.06379	1.10E-02	0.52	1.24	0.02 (2)	NA	2.0E-02	1.0E-06	--	--	7.2E-05	3.6E-03	0.2%
2-Methylnaphthalene	0.0457	8.94E-02	0.53 (6)	2.2 (6)	0.2 (6)	NA	4.0E-03	5.9E-06	--	--	4.1E-04	1.0E-01	6.2%
2-Methylphenol (o-Cresol)	0.0266	7.70E-03	0.43	1.03	0.0089 (2)	NA	5.0E-02	2.9E-07	--	--	2.0E-05	4.0E-04	0.0%
4-Methylphenol (p-Cresol)	0.0181	7.70E-03	0.43	1.03	0.0087 (2)	NA	5.0E-03	1.9E-07	--	--	1.4E-05	2.7E-03	0.2%
Acenaphthene	0.0308	8.39E-02	1.1 (6)	5.6 (6)	2.9 (6)	NA	6.0E-02	4.9E-06	--	--	3.4E-04	5.7E-03	0.3%
Bis(2-ethylhexyl) Phthalate (BEHP)	0.0055	2.50E-02	16.64	39.93	0.2	1.4E-02	2.0E-02	1.0E-06	1.4E-08	0.5%	7.1E-05	3.5E-03	0.2%
Carbazole	0.0101	5.23E-02	0.9159 (7)	6.8613 (7)	0.5248 (7)	2.0E-02	NA	9.1E-07	1.8E-08	0.7%	6.4E-05	--	--
Dibenzofuran	0.0131	9.49E-02	0.9286 (7)	6.3174 (7)	1.3183 (7)	NA	2.0E-03	2.2E-06	--	--	1.5E-04	7.5E-02	4.6%
Fluorene	0.0107	1.07E-01	1.5 (6)	7.3 (6)	8.9 (6)	NA	4.0E-02	2.5E-06	--	--	1.8E-04	4.4E-03	0.3%
Naphthalene	0.165	4.70E-02	0.56	1.34	0.2	NA	2.0E-02	1.1E-05	--	--	8.0E-04	4.0E-02	2.4%
								Total ILCR:	2.6E-06	100.0%	Total HI:	1.7E+00	100.0%

NOTES:
-- - Not applicable.
NA - Toxicity criterion not available.
Kp, tau, t*, and B values are derived from the USEPA RAGS E Guidance unless otherwise noted
(1) Value for m-Xylene
(2) Dermal Exposure Assessment Value
(3) Value for 1,2,4-Trichlorobenzene
(4) Value for 1,2-Dichloroethene (total)
(5) Value for m-Xylene
(6) VA Voluntary Remediation Program (VRP) value
(7) Calculated from the Dermal Exposure Assessment report (USEPA, 1992)

PARTICULATE EMISSION FACTOR - CONSTRUCTION WORKERS
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0091) - MCB CAMP LEJEUNE, NORTH CAROLINA

$$PEF = Q/C_{sr} \times 1/F_D \times \left[\frac{T \times A_R}{556 \times (W/3)^{0.4} \times (365-p)/365 \times Sum(VKT)} \right]$$

$$Q/C_{sr} = A \times \exp\left((\ln A_S - B)^2/C\right)$$

Symbol	Definition (units)	Default	Reference
Q/C_{sr}	Inverse of a 1-h avg. air concentration along a straight road bisecting a 29.84 acre square site (g/m2 -s/kg/m3)	14.0	USEPA 2001
A	Constant (unitless)	12.9351	USEPA 2001
A_S	Arial extent of site surface soil contamination (acres)	29.84	Site-specific
B	Constant (unitless)	5.7383	USEPA 2001
C	Constant (unitless)	71.7711	USEPA 2001
F_D	Dispersion correction factor	0.185	USEPA 2001
T	Total time over which construction occurs (s)	7.20E+06	USEPA 2001
A_R	Surface area of contaminated road segment (m^2)	5,296	Site-specific
W	Mean vehicle weight (tons)	8	USEPA 2001
p	Number of days with at least 0.01 inches of precipitation (days/year)	120	USEPA 2001
Sum(VKT)	Sum of fleet vehicle kilometers traveled during the exposure duration (km)	2610	USEPA 2001
PEF	Particulate Emission Factor (m^3/kg)	2.00E+06	Site-specific

Q/C_{sr} Calculation

Ln A_S	3.396	
$(\text{Ln } A_S - B)^2$	5.5	
$(\text{Ln } A_S - B)^2/C$	0.076	
$e^{(\text{Ln AS - B})2/C}$	1.08	
$A \times e^{(\text{Ln AS - B})2/C}$	14.0	Q/C_{sr}

PEF Calculation

$Q/C_{sr} \times 1/F_D$	75	
$T \times A_R$	38,130,639,145	
$(W/3)^{0.4}$	1.48	
(365-p)/365	0.671	
$556 \times (W/3)^{0.4} \times (365-p)/365 \times Sum(VKT)$	1,442,036	
$T \times A_R/556 \times (W/3)^{0.4} \times (365-p)/365 \times Sum(VKT)$	26,442	
PEF	1,995,717	
29.84 acres / 0.000247 acres / m2 =	120,810	m^2
sqrt (120810) / 1000 =	0.348	km

Assumptions

W assumptions: 20 - 2-ton cars and 10 - 20-ton trucks = 30 vehicles

Sum(VKT) assumptions:

Assume that the site is 29.84 acres configured as a square with the unpaved road segment dividing the square evenly. The road length equals the square root of the 29.84 acres (0.348 km). Assume that each vehicle travels the length of the road 1 time per day, 5 days per week, for a total of 12 months (1 year) = 30 vehicles x 0.348 km/day x 50 weeks/yr x 5 days/week = 2610 km

A_R assumptions:

Based on VKT, the road length is 348 m and assume the road width is 50 ft. (15.24).

Reference

USEPA 2001. Draft Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

APPENDIX K

Checklist for Ecological Assessment

CHECKLIST FOR ECOLOGICAL ASSESSMENTS/SAMPLING

I. SITE LOCATION

1. Site Name *SWMU 303/318*
   US EPA ID Number *NA*
   Location *Marine Corps Base Camp Lejeune*
   County *Onslow* City *Jacksonville* State *NC*

2. Latitude *34°45' N* Longitude *77°25' W*

3. Attach site maps, including a topographical map, a diagram that illustrates the layout of the facility (e.g., site boundaries, structures, etc.), and maps showing all habitat areas identified in Section III of the checklist. Also, include maps that illustrate known and suspected release areas, sampling locations and any other important features, if available.

   Site maps are included within the main text of this report (RFI Report).

II. SITE CHARACTERIZATION

1. Indicate the approximate area of the site (i.e., acres or sq. ft.)

   SWMU 303 – 15'x15' concrete pad supporting two above ground storage tanks.
   SWMU 318 – 20'x20' area of oil/water separator.

2. Is this the first site visit? ☐ *X* Yes ☐ No *(first visit by ecologist)*
   If no, attach trip report of previous site visit(s), if available.

   Dates(s) of previous site visit(s) *NA*

3. Are aerial or other site photographs available? ☐ *X* Yes ☐ No
   If yes, please attach any available photo(s) to the site map to the report.

   An aerial photo is presented as Figure 7-1 of this report. Additional site photos follow this checklist.

4. Provide an approximate breakdown of the land uses on the site:

_____% Heavy Industrial	*100* % Light Industrial*/airfield*	_____% Urban
_____% Residential	_____% Rural	_____% Agricultural[b]
_____% Recreational[a]	_____% Undisturbed	_____% Other[c]

[a]For recreational areas, please describe the use of the area (e.g., park, playing field, etc).
_____

[b]For agricultural areas, please list the crops and/or livestock which are present.

_____

[c]For areas designated as "other," please describe the use of the area.

_____

5. Provide an approximate breakdown of the land uses in the area surrounding the site. Indicate the radius (in miles) of the area described: *1/4 mile*

_____% Heavy Industrial	_*100*_% Light Industrial*/airfield*	_____% Urban
_____% Residential	_____% Rural	_____% Agricultural[b]
_____% Recreational[a]	_____% Undisturbed	_____% Other [c]

[a]For recreational areas, please describe the use of the area (e.g., park, playing field, golf course, etc).

_____

[b]For agricultural areas, please list the crops and/or livestock which are present.

_____

[c]For areas designated as "other," please describe the use of the area.

_____

_____

6. Has any movement of soil taken place at the site? ☐ Yes ☐ *X* No
If yes, indicate the likely source of the disturbance, (e.g., erosion, agricultural, mining, industrial activities, removals, etc.) degree of disturbance, and estimate when these events occurred.

There is a drainage way in the area but it is well vegetated and there is no evidence of substantial soil erosion.

7. Do any sensitive environmental areas exist adjacent to or in proximity to the site, (e.g. Federal and State parks, National and State monuments, wetlands)? *Remember, flood plains and wetlands are not always obvious; do not answer "no" without confirming information. See Table 1 for a list of contacts.*

None observed. There is an area of saturated soils within the man-made drainage way. Saturation may be attributed to recent precipitation, although some standing water and/or saturated soils may be more persistent based on vegetation within drainage way (water pennywort, algae). This area is not a natural area and is not classified as a wetland on National Wetland Inventory mapping.

Please provide the source(s) of information used to identify these sensitive areas, and indicate their general location on the site map.

Consulted Inventory of the Rare Species, Natural Communities, and Critical Areas of the Camp Lejeune Marine Corps Base, North Carolina (LeBlond, Fussell, and Braswell 1994) to determine if sensitive areas were present in the vicinity of the site. Also checked National Wetland Inventory mapping on Camp Lejeune GIS website (www.bakerenv.com/camplejeune_irp)

8. What type of facility is located at the site?

☐ Chemical ☐ Manufacturing ☐ Mixing

☐ Waste Disposal ☐ *X* Other (specify)

The study area borders a helicopter wash pad adjacent to the tarmac at the Marine Corps Air Station.

9. Identify the contaminants of potential concern (COPCs) at the site. If known, include the maximum contaminant levels. Please indicate the source of data cited (e.g., RFI, confirmatory sampling, etc).

SWMU 303 - Hydraulic fluid, engine and transmission oil stored in above ground storage tank.

SWMU 318 - Oil, grease, soap, and miscellaneous debris associated with oil/water separator.

10. Check any potential routes of off-site migration of contaminants observed at the site:

☐ Swales ☐ Depressions ☐*X* Drainage Ditches

☐ *X* Runoff ☐ Windblown Particulates ☐ Vehicular Traffic

☐ Other (specify):

11. Indicate the approximate depth to groundwater (in feet below ground surface [(bgs)].
According to Phase II CSI – SWMU 303 depth to groundwater approx. 6.6 to 6.7 feet bgs.
- SWMU 318 depth to groundwater approx. 5.2 to 6.3 feet bgs.

12. Indicate the direction of groundwater flow (e.g., north, southeast, etc.)
According to Phase II CSI – SWMU 303 groundwater flow is north/northeast
- SWMU 318 groundwater flow is east/northeast

13. Is the direction of surface runoff apparent from site observations? ☐ *X* Yes ☐ No
If yes, to which of the following does the surface runoff discharge? Indicate all that apply.

☐ Surface water ☐ *X* Groundwater *(via direct infiltration)* ☐ *X* Sewer *(via drainage way)*

☐ Collection Impoundment

14. Is there a navigable water body or tributary to a navigable water body?
☐ Yes ☐ *X* No

15. Is there a water body anywhere on or in the vicinity of the site? If yes, also complete Section III.B.1: Aquatic Habitat Checklist -- Non-Flowing Systems and/or Section III.B.2: Aquatic Habitat Checklist -- Flowing Systems.

☐ Yes (approx. distance _____) ☐ *X* No

New River is approximately 4200 feet east of the SWMU.

16. Is there evidence of flooding? ☐ Yes ☐ *X* No
Wetlands and flood plains are not always obvious. Do not answer "no" without confirming information. If yes, complete Section III.C: Wetland Habitat Checklist.

17. If a field guide was used to aid any of the identifications, please provide a reference. Also, estimate the time spent identifying fauna. (Use a blank sheet if additional space is needed for text.)

NA

18. Are any threatened and/or endangered species (plant or animal) known to inhabit the area of the site? ☐ Yes ☐ *X* No
If yes, you are required to verify this information with the U.S. Fish and Wildlife Service or other appropriate agencies (see Table 1 for a list of contacts). If species' identities are known, please list them next.

19. Record weather conditions at the site at the time of the site visit when information for completion of this checklist was prepared:

DATE *31 March 2004*

60s Temperature (°C/°F)

Wind (direction/speed): *light breeze*

Cloud Cover: *cumulous*

Normal daily high temperature (°C/°F): *approx. 67 °F*
(source: http://www.city-data.com/city/Jacksonville-North-Carolina.html)

Precipitation (rain, snow): *dry afternoon after heavy night and morning rains*

20. Describe reasonable and likely future land and/or water use(s) at the site.

Study area will continue to be used as an air station for the foreseeable future.

21. Describe the historical uses of the site. Include information on chemical releases that may have occurred as a result of previous land uses. For each chemical release, provide information on the form of the chemical released (i.e., solid, liquid, vapor) and the known or suspected causes or mechanism of the release (i.e., spills, leaks, material disposal, dumping, explosion, etc.).

No historical chemical releases are known.

22. Identify the media (e.g., soil [surface or subsurface], surface water, air, groundwater) which are known or suspected to contain COCs.

Soil (surface and subsurface) and groundwater were identified as media of concern in the Phase II CSI.

II.A. SUMMARY OF OBSERVATIONS AND SITE SETTING

Include information on significant source areas and migration pathways that are likely to constitute complete exposure pathways.

SWMUs 303/318 are located in the middle of a highly industrialized area of the Base, adjacent to the airfield. Access (to humans and larger bodied upper trophic level receptors) is restricted by fencing that secures the airfield. No habitat suitable to fully support upper trophic level receptors was viewable from the study area; therefore, it is not anticipated that this study area would be used as a foraging area by flightless receptors (i.e., receptors [such as small mammals] probably do not live close enough to this area that they would forage here [unless pest species – mice, etc in buildings?]). Access to avian receptors is not restricted; however, no birds (or mammals) were observed at the site during the site visit, and use of this area by avian receptors may be limited due to the active nature of the site. Ecological receptors that may be exposed to contamination in this area include terrestrial flora (grass and other herbaceous species) and fauna (invertebrates, microbes) inhabiting the maintained lawn surrounding the SWMUs.

Additional flora and fauna may be associated with the drainage way. Flora included grasses, rushes, and some herbaceous species that are fond of wetter conditions (e.g., watter pennywort). Algae in freestanding water suggests the area may not fully dry out between rain events (perhaps this season is wetter than average). Although there was standing water in this drainage way, there was no evidence of amphibians or reptiles in these wet areas.

Consider potential for groundwater contamination to adversely impact off-site aquatic habitat.

Checklist Completed by	*Heather G. Wojdak*
Affiliation	*Michael Baker Jr., Inc.*
Author Assisted by	*NA*
Date	*31 March 2004*

III. HABITAT EVALUATION

III.A Terrestrial Habitat Checklist

III.A.1 Wooded

Are any wooded areas on or adjacent to the site? ☐ Yes ☐ X No

If yes, indicate the wooded area on the attached site map and answer the following questions. If more than one wooded area is present on or adjacent to the site, make additional copies of the following questions and fill out for each individual wooded area. Distinguish between wooded areas by using names or other designations, and clearly identify each area on the site map.

If no, proceed to Section III.A.2: Shrub/Scrub

III.A.2 Shrub/Scrub

Are any shrub/scrub areas on or adjacent to the site? ☐ Yes ☐ X No

If yes, indicate the shrub/scrub area on the attached site map and answer the following questions. If more than one shrub/scrub area is present on or adjacent to the site, make additional copies of the following questions and fill out for each individual shrub/scrub area. Distinguish between shrub/scrub areas, using names or other designations, and clearly identify each area on the site map.

If no, proceed to Section III.A.3: Open Field

III.A.3 Open Field

Are any open field areas on or adjacent to the site? ☐ Yes ☐ X No

If yes, indicate the open field area on the attached site map and answer the following questions. If more than one open field area is present on or adjacent to the site, make additional copies of the following questions and fill out for each individual open field area. Distinguish between open field areas, using names or other designations, and clearly identify each area on the site map.

If no, proceed to Section III.A.4: Miscellaneous

III.A.4 Miscellaneous

Are other types of terrestrial habitats present at the site, other than woods, scrub/shrub and open field? ☐ Yes ☐ X No

If yes, indicate the area on the attached site map and answer the following questions. If more than one of these areas are present on or adjacent to the site, make additional copies of the following questions and fill out for each individual area. Distinguish between areas by using names or other designations. Clearly identify each area on the site map.

If no, proceed to Section III.B: Aquatic Habitats.

III.B Aquatic Habitats

Note: Aquatic systems are often associated with wetland habitats. Please refer to Section III.C, Wetland Habitat Checklist.

III.B.1 Non-Flowing Systems

Are any non-flowing aquatic features (such as ponds or lakes) located at or adjacent to the site?

☐ Yes ☐ X No

(site contains a drainage way – this was evaluated as aquatic habitat in the RFI)

If yes, indicate the aquatic feature on the attached site map and answer the following questions regarding the non-flowing aquatic features. If more than one non-flowing aquatic feature is present on or adjacent to the site, make additional copies of the following questions and fill out for each individual aquatic feature. Distinguish between aquatic features by using names or other designations. Clearly identify each area on the site map.

If no, proceed to Section III.B.2: Flowing Systems

III.B.2 Flowing Systems

Note: Aquatic systems are often associated with wetland habitats. Please refer to Section III.C, Wetland Habitat Checklist.

Are any flowing aquatic features (such as streams or rivers) located at or adjacent to the site?

☐ Yes ☐ X No

If yes, indicate the system on the attached site map and answer the following questions regarding the flowing system. If more than one flowing system is present on or adjacent to the site, make additional copies of the following questions and complete one set for each individual aquatic feature. Distinguish between flowing systems by using names or other designation. Clearly identify each area on the site map

If no, proceed to Section III.C: Wetlands Habitats.

III.C Wetland Habitats

Are any wetland[1] areas such as marshes or swamps on or adjacent to the site?

☐ Yes ☐ X No

If yes, indicate the wetland area on the attached site map and answer the following questions regarding the wetland area. If more than one wetland area is present on or adjacent to the site, make additional copies of the following questions and fill out one for each individual wetland area. Distinguish between wetland areas by using names or other designations (such as location). Clearly identify each area on the site map. Also, obtain and attach a National Wetlands Inventory Map (or maps) to illustrate each wetland area.

Identify the sources of the observations and information (e.g., National Wetland Inventory, Federal or State Agency, USGS topographic maps) used to make the determination whether or not wetland areas are present.

_____
_____
_____
_____
_____
_____

If no wetland areas are present, proceed to Section III.D: Sensitive Environments and Receptors.

III.D Sensitive Environments and Receptors

1. Do any other potentially sensitive environmental areas[2] exist adjacent to or within

[1]Wetlands are defined in 40 CFR §232.2 as " Areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Examples of typical wetlands plants include: cattails, cordgrass, willows and cypress trees. National wetland inventory maps may be available at http:\\nwi.fws.gov. Additional information on wetland delineation criteria is also available from the Army Corps of Engineers.

one-half mile of the site? If yes, list these areas and provide the source(s) of information used to identify sensitive areas. *Do not answer "no" without confirmation from the U.S. Fish and Wildlife Service and other appropriate agencies. See Table 1 for a list of contacts.*

No

2. Are any areas on or near (i.e., within one-half mile) the site owned or used by local tribes? If yes, describe.

No

3. Does the site serve or potentially serve as a habitat, foraging area or refuge by rare, threatened, endangered, candidate and/or proposed species (plants or animals), or any otherwise protected species? If yes, identify species. *This information should be obtained from the U.S. Fish and Wildlife Service and other appropriate agencies. See Table 1 for a list of contacts.*

No

4. Is the site potentially used as a breeding, roosting or feeding area by migratory bird species? If yes, identify which species.

No

Sensitive Environments and Receptors Questions (continued)

5. Is the site used by any ecologically[3], recreationally or commercially important species? If yes, explain.

No

---

[3] Areas that provide unique and often protected habitat for wildlife species. These areas are typically used during critical life stages such as breeding, hatching, rearing of young and overwintering. Refer to Table 2 at the end of this document for examples of sensitive environments.

[3] Ecologically important species include populations of species which provide a critical (i.e., not replaceable) food resource for higher organisms. These species' functions would not be replaced by more tolerant species or perform a critical ecological function (such as organic matter decomposition) and will not be replaced by other species. Ecologically important species include pest and opportunistic species that populate an area if they serve as a food source for other species, but do not include domesticated animals (e.g., pets and livestock) or plants/animals whose existence is maintained by continuous human interventions (e.g., fish hatcheries, agricultural crops, etc).

IV. EXPOSURE PATHWAY EVALUATION

(this section was completed following review of RFI data set)

1. Do existing data provide sufficient information on the nature, rate and extent of contamination at the site?

   - ❑ *X* Yes
   - ❑ No
   - ❑ Uncertain

   Please provide an explanation for your answer.

2. Do existing data provide sufficient information on the nature, rate and extent of contamination in offsite affected areas?

   - ❑ *X* Yes
   - ❑ No
   - ❑ Uncertain
   - ❑ No offsite contamination

   Please provide an explanation for your answer.

3. Do existing data address potential migration pathways of contaminants at the site?

   - ❑ *X* Yes
   - ❑ No
   - ❑ Uncertain

   Please provide an explanation for your answer.

4. Do existing data address potential migration pathways of contaminants in offsite affected areas?

   - ❑ *X* Yes
   - ❑ No
   - ❑ Uncertain
   - ❑ No offsite contamination

Please provide an explanation for your answer.

5. Are there visible indications of stressed habitats or receptors on or near (i.e., within one-half mile) the site that may be the result of a chemical release? If yes, explain. Attach photographs if available.

None observed.

6. Is the location of the contamination such that receptors might be reasonably expected to come into contact with it? For soil, this means contamination in the soil 0 to 1 foot below ground surface (bgs). If yes, explain.

Yes – contaminated soils 0-12 inches in maintained lawn area.

7. Are receptors located in or using habitats where chemicals exist in air, soil, sediment or surface water? If yes, explain.

Possibly - terrestrial flora (low quality – maintained lawn – grasses, herbs, inverts) Possibility of use by avian receptors.

8. Could chemicals reach receptors via groundwater? Can chemicals leach or dissolve to groundwater? Are chemicals mobile in groundwater? Does groundwater discharge into receptor habitats? If yes, explain.

Potential for groundwater discharge on-site and offsite is evaluated in the RFI.

9. Could chemicals reach receptors through runoff or erosion? Answer the following questions.

What is the approximate distance from the contaminated area to the nearest watercourse?

- ❑ 0 feet (i.e., contamination has reached a watercourse)
- ❑ 1-10 feet
- ❑ 11-20 feet
- ❑ 21-50 feet
- ❑ 51-100 feet
- ❑ 101-200 feet
- ❑ > 200 feet
- ❑ > 500 feet
- ❑ *X* > 1000 feet

What is the slope of the ground in the contaminated area?

- ❑ *X* 0-10%
- ❑ 10-30%
- ❑ > 30%

What is the approximate amount of ground and canopy vegetative cover in the contaminated area?

- ❑ < 25%
- ❑ 25-75%
- ❑ *X* > 75%

Is there visible evidence of erosion (e.g., a rill or gully) in or near the contaminated area?

- ❑ Yes
- ❑ *X* No
- ❑ Do not know

Do any structures, pavement or natural drainage features direct run-on flow (i.e., surface flows originating upstream or uphill from the area of concern) into the contaminated area?

- ❑ Yes
- ❑ *X* No
- ❑ Do not know

10. Could chemicals reach receptors through the dispersion of contaminants in air (e.g., volatilization, vapors, fugitive dust)? If yes, explain.

Not anticipated due to dense vegetative cover or cement/asphalt, which would limit volatile emissions.

11. Could chemicals reach receptors through migration of non-aqueous phase liquids (NAPLs)? Is a NAPL present at the site that might be migrating towards receptors or habitats? Could NAPL discharge contact receptors or their habitat?

No

Photographs of SWMU 303/318 taken 31 March 2004

Photo 1. SWMU 303 facing southwest. Two above ground storage tanks within concrete bermed structure between helicopter wash pad and Building AS-515.

Photo 2. View of SWMU 303 facing north.

Photographs of SWMU 303/318 taken 31 March 2004

Photo 3. Helicopter wash pad between SWMUs 303 and 318 (viewed from SWMU 303 facing east northeast).

Photo 4. SWMU 318, oil water separator (facing southeast).

Photographs of SWMU 303/318 taken 31 March 2004

Photo 5. Airfield south of SWMU 303/318 (viewed from SWMU 303 facing southeast).

Photo 6. Drainage way to the east of oil/water separator.

Photographs of SWMU 303/318 taken 31 March 2004

Photo 7. Drainage way adjacent to oil/water separator. Some aquatic vegetation and algae present in standing water.

Photo 8. Drainage way running east to west located north of helicopter wash pad.

Photographs of SWMU 303/318 taken 31 March 2004

Photo 9. Vegetation located at intersection of two drainage ditches, near sample SWMU318-SS02.

APPENDIX L

Checklist for Ecological Assessment - Feburary 2005 Update

CHECKLIST FOR ECOLOGICAL ASSESSMENTS/SAMPLING - FEBRUARY 2005 UPDATE

I. SITE LOCATION

1. Site Name *SWMU 303/318*
   US EPA ID Number *NA*
   Location *Marine Corps Base Camp Lejeune*
   County *Onslow* City *Jacksonville* State *NC*

2. Latitude *34°45' N* Longitude *77°25' W*

3. Attach site maps, including a topographical map, a diagram that illustrates the layout of the facility (e.g., site boundaries, structures, etc.), and maps showing all habitat areas identified in Section III of the checklist. Also, include maps that illustrate known and suspected release areas, sampling locations and any other important features, if available.

   Site maps are included within the main text of this report (RFI Report).

II. SITE CHARACTERIZATION

1. Indicate the approximate area of the site (i.e., acres or sq. ft.)

   SWMU 303 – 15'x15' concrete pad supporting two above ground storage tanks.
   SWMU 318 – 20'x20' area of oil/water separator.

2. Is this the first site visit? ☐ Yes ☐ ***X*** No
   If no, attach trip report of previous site visit(s), if available.

   Dates(s) of previous site visit(s) ***31 March 2003***
   (red bold font indicates changes/updates from original checklist)

3. Are aerial or other site photographs available? ☐ *X* Yes ☐ No
   If yes, please attach any available photo(s) to the site map to the report.

   An aerial photo is presented as Figure 7-1 of this report. Additional site photos follow this checklist.

4. Provide an approximate breakdown of the land uses on the site:

_____% Heavy Industrial	*100* % Light Industrial*/airfield*	_____% Urban
_____% Residential	_____% Rural	_____% Agricultural[b]
_____% Recreational[a]	_____% Undisturbed	_____% Other[c]

[a]For recreational areas, please describe the use of the area (e.g., park, playing field, etc).
_____

[b]For agricultural areas, please list the crops and/or livestock which are present.

_____

[c]For areas designated as "other," please describe the use of the area.

_____

5. Provide an approximate breakdown of the land uses in the area surrounding the site. Indicate the radius (in miles) of the area described: *1/4 mile*

_____% Heavy Industrial	_*100*_% Light Industrial*/airfield*	_____% Urban
_____% Residential	_____% Rural	_____% Agricultural[b]
_____% Recreational[a]	_____% Undisturbed	_____% Other [c]

[a]For recreational areas, please describe the use of the area (e.g., park, playing field, golf course, etc).

_____

[b]For agricultural areas, please list the crops and/or livestock which are present.

_____

[c]For areas designated as "other," please describe the use of the area.

_____

_____

6. Has any movement of soil taken place at the site? ☐ ***X*** Yes ☐ No
If yes, indicate the likely source of the disturbance, (e.g., erosion, agricultural, mining, industrial activities, removals, etc.) degree of disturbance, and estimate when these events occurred.

There is a drainage way in the area but it is well vegetated and there is no evidence of substantial soil erosion. ***The cement pad immediately adjacent to the oil/water separator next to the drainage area has been replaced. There is evidence of some soil disturbance adjacent to this pad and surrounding the oil/water separator (see Photos 1 through 4 following this updated checklist).***

7. Do any sensitive environmental areas exist adjacent to or in proximity to the site, (e.g. Federal and State parks, National and State monuments, wetlands)? *Remember, flood plains and wetlands are not always obvious; do not answer "no" without confirming information. See Table 1 for a list of contacts.*

None observed. There is an area of saturated soils within the man-made drainage way. Saturation may be attributed to recent precipitation, although some standing water and/or saturated soils may be more persistent based on vegetation within drainage way (water pennywort, algae). This area is not a natural area and is not classified as a wetland on National Wetland Inventory mapping.

Please provide the source(s) of information used to identify these sensitive areas, and indicate their general location on the site map.

Consulted Inventory of the Rare Species, Natural Communities, and Critical Areas of the Camp Lejeune Marine Corps Base, North Carolina (LeBlond, Fussell, and Braswell 1994) to determine if sensitive areas were present in the vicinity of the site. Also checked National Wetland Inventory mapping on Camp Lejeune GIS website (www.bakerenv.com/camplejeune_irp)

8. What type of facility is located at the site?

☐ Chemical ☐ Manufacturing ☐ Mixing

☐ Waste Disposal ☐ *X* Other (specify)

The study area borders a helicopter wash pad adjacent to the tarmac at the Marine Corps Air Station.

9. Identify the contaminants of potential concern (COPCs) at the site. If known, include the maximum contaminant levels. Please indicate the source of data cited (e.g., RFI, confirmatory sampling, etc).

SWMU 303 - Hydraulic fluid, engine and transmission oil stored in above ground storage tank.

SWMU 318 - Oil, grease, soap, and miscellaneous debris associated with oil/water separator.

10. Check any potential routes of off-site migration of contaminants observed at the site:

☐ Swales ☐ Depressions ☐*X* Drainage Ditches

☐ *X* Runoff ☐ Windblown Particulates ☐ Vehicular Traffic

☐ Other (specify):

11. Indicate the approximate depth to groundwater (in feet below ground surface [(bgs)].
According to Phase II CSI – SWMU 303 depth to groundwater approx. 6.6 to 6.7 feet bgs.
- SWMU 318 depth to groundwater approx. 5.2 to 6.3 feet bgs.

12. Indicate the direction of groundwater flow (e.g., north, southeast, etc.)
According to Phase II CSI – SWMU 303 groundwater flow is north/northeast
- SWMU 318 groundwater flow is east/northeast

13. Is the direction of surface runoff apparent from site observations? ☐ *X* Yes ☐ No
If yes, to which of the following does the surface runoff discharge? Indicate all that apply.

☐ Surface water ☐ *X* Groundwater *(via direct infiltration)* ☐ *X* Sewer *(via drainage way)*

☐ Collection Impoundment

14. Is there a navigable water body or tributary to a navigable water body?
☐ Yes ☐ *X* No

15. Is there a water body anywhere on or in the vicinity of the site? If yes, also complete Section III.B.1: Aquatic Habitat Checklist -- Non-Flowing Systems and/or Section III.B.2: Aquatic Habitat Checklist -- Flowing Systems.

☐ Yes (approx. distance _____) ☐ *X* No

New River is approximately 4200 feet east of the SWMU.

16. Is there evidence of flooding? ☐ Yes ☐ *X* No
Wetlands and flood plains are not always obvious. Do not answer "no" without confirming information. If yes, complete Section III.C: Wetland Habitat Checklist.

17. If a field guide was used to aid any of the identifications, please provide a reference. Also, estimate the time spent identifying fauna. (Use a blank sheet if additional space is needed for text.)

NA

18. Are any threatened and/or endangered species (plant or animal) known to inhabit the area of the site? ☐ Yes ☐ *X* No
If yes, you are required to verify this information with the U.S. Fish and Wildlife Service or other appropriate agencies (see Table 1 for a list of contacts). If species' identities are known, please list them next.

19. Record weather conditions at the site at the time of the site visit when information for completion of this checklist was prepared:

DATE ***16 February 2005***

high 60s Temperature (°C/°F)

Wind (direction/speed): *light breeze*

Cloud Cover: ***mostly clear skies, some cumulous clouds***

Normal daily high temperature (°C/°F): *approx.* ***60*** *°F*
(source: http://www.city-data.com/city/Jacksonville-North-Carolina.html)

Precipitation (rain, snow): ***none***

20. Describe reasonable and likely future land and/or water use(s) at the site.

Study area will continue to be used as an air station for the foreseeable future.

21. Describe the historical uses of the site. Include information on chemical releases that may have occurred as a result of previous land uses. For each chemical release, provide information on the form of the chemical released (i.e., solid, liquid, vapor) and the known or suspected causes or mechanism of the release (i.e., spills, leaks, material disposal, dumping, explosion, etc.).

No historical chemical releases are known.

22. Identify the media (e.g., soil [surface or subsurface], surface water, air, groundwater) which are known or suspected to contain COCs.

Soil (surface and subsurface) and groundwater were identified as media of concern in the Phase II CSI.

II.A. SUMMARY OF OBSERVATIONS AND SITE SETTING

Include information on significant source areas and migration pathways that are likely to constitute complete exposure pathways.

SWMUs 303/318 are located in the middle of a highly industrialized area of the Base, adjacent to the airfield. Access (to humans and larger bodied upper trophic level receptors) is restricted by fencing that secures the airfield. No habitat suitable to fully support upper trophic level receptors was viewable from the study area; therefore, it is not anticipated that this study area would be used as a foraging area by flightless receptors (i.e., receptors [such as small mammals] probably do not live close enough to this area that they would forage here [unless pest species – mice, etc in buildings?]). ***Reports from field crew (working daily at the site for more than a week) indicate that flocks of sea gulls rest on the tarmac in the morning hours. Sea gulls were observed in the site vicinity during this site visit. These receptors may visit the drainage area for water; however, habitat in this area is not sufficient to fully support avian receptors.*** *Ecological receptors that may be exposed to contamination in this area include terrestrial flora (grass and other herbaceous species) and fauna (invertebrates, microbes) inhabiting the maintained lawn surrounding the SWMUs.*

Additional flora and fauna may be associated with the drainage way. Flora included grasses, rushes, and some herbaceous species that are fond of wetter conditions (e.g., water pennywort). Algae was present in freestanding water. ***Based on past and present observations of this drainage way, it is likely that this area is saturated throughout the year.*** *There was no evidence of amphibians or reptiles in these wet areas.*

Consider potential for groundwater contamination to adversely impact off-site aquatic habitat.

Checklist Completed by	*Heather G. Wojdak*
Affiliation	*Michael Baker Jr., Inc.*
Author Assisted by	*NA*
Date	***16 February 2005***

Photographs of SWMU 303/318 taken 16 February 2005

Photo 1. SWMU 318, oil water separator (facing southwest). Evidence of soil disturbance. Concrete pad has been partially replaced.

Photo 2. SWMU 318 facing west.

Photographs of SWMU 303/318 taken 16 February 2005

Photo 3. SWMU 318 facing northwest.

Photo 4. SWMU 318 facing south.

Baker

Michael Baker Jr., Inc.

APPENDIX M

Ecological Assessment Data

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU303-IS04-00	SWMU303-SB01-00	SWMU303-SB02-00	SWMU303-TW01-00	SWMU303-TW02-00	SWMU303-TW03-00	SWMU318-IS01-00
SAMPLE DATE	03-19-2002	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002	09-14-1997
SAMPLE DEPTH (ft)	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0' - 2'
Volatile Organic Compounds (ug/kg)							
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane (TCA)	6 U	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	6 U	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	6 U	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	6 U	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	6 U	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	6 U	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	6 U	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	6 U	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane (EDB)	6 U	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene (o-)	6 U	NA	NA	NA	NA	NA	1.2 U
1,2-Dichloroethane	6 U	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (cis)	6 U	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	6 U	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	6 U	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene (m-)	6 U	NA	NA	NA	NA	NA	1.2 U
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropene (cis)	6 U	NA	NA	NA	NA	NA	NA
1,3-Dichloropropene (trans)	6 U	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene (p-)	6 U	NA	NA	NA	NA	NA	1.8
2,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	7 J	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA
2-Hexanone (MBK)	14 U	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	14 U	NA	NA	NA	NA	NA	NA
Acetone	27 J	NA	NA	NA	NA	NA	NA
Benzene	6 U	NA	NA	NA	NA	NA	1.2 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU303-IS04-00	SWMU303-SB01-00	SWMU303-SB02-00	SWMU303-TW01-00	SWMU303-TW02-00	SWMU303-TW03-00	SWMU318-IS01-00
SAMPLE DATE	03-19-2002	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002	09-14-1997
SAMPLE DEPTH (ft)	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0' - 2'
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	6 U	NA	NA	NA	NA	NA	NA
Bromoform	6 U	NA	NA	NA	NA	NA	NA
Bromomethane	6 U	NA	NA	NA	NA	NA	NA
Butylbenzene, sec-	NA	NA	NA	NA	NA	NA	NA
Butylbenzene, tert-	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	2 J	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	6 U	NA	NA	NA	NA	NA	NA
Chlorobenzene	6 U	NA	NA	NA	NA	NA	1.2 U
Chloroethane	44 J	NA	NA	NA	NA	NA	NA
Chloroform	6 U	NA	NA	NA	NA	NA	NA
Chloromethane	6 U	NA	NA	NA	NA	NA	NA
Cyclohexane	6 U	NA	NA	NA	NA	NA	NA
Dibromochloromethane	6 U	NA	NA	NA	NA	NA	NA
Dibromomethane	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	6 UJ	NA	NA	NA	NA	NA	NA
Ethylbenzene	6 U	NA	NA	NA	NA	NA	1.2 U
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	6 U	NA	NA	NA	NA	NA	NA
Methyl Acetate	6 U	NA	NA	NA	NA	NA	NA
Methyl Cyclohexane	6 U	NA	NA	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	6 U	NA	NA	NA	NA	NA	NA
Methylene Chloride	2 J	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA
Styrene (Ethenylbenzene)	6 U	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	6 U	NA	NA	NA	NA	NA	NA
Toluene	6 U	NA	NA	NA	NA	NA	1.2 U
Trichloroethene (TCE)	6 U	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	6 U	NA	NA	NA	NA	NA	NA
Vinyl Chloride	6 U	NA	NA	NA	NA	NA	NA
Xylene, m-	NA	NA	NA	NA	NA	NA	NA
Xylene, o-	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	17 UJ	NA	NA	NA	NA	NA	1.2 U

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU303-IS04-00	SWMU303-SB01-00	SWMU303-SB02-00	SWMU303-TW01-00	SWMU303-TW02-00	SWMU303-TW03-00	SWMU318-IS01-00
SAMPLE DATE	03-19-2002	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002	09-14-1997
SAMPLE DEPTH (ft)	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0' - 2'
Semivolatile Organic Compounds (ug/kg)							
1,1'-Biphenyl	NA	380 U	360 U	370 U	390 U	400 U	NA
2,2'-Oxybis[1-chloropropane]	NA	380 U	360 U	370 U	390 U	400 U	410 U
2,4,5-Trichlorophenol	NA	380 U	360 U	370 U	390 U	400 U	410 U
2,4,6-Trichlorophenol	NA	380 U	360 U	370 U	390 U	400 U	410 U
2,4-Dichlorophenol	NA	380 U	360 U	370 U	390 U	400 U	410 U
2,4-Dimethylphenol	NA	380 U	360 U	370 U	390 U	400 U	410 U
2,4-Dinitrophenol	NA	2000 U	1900 U	1900 U	2000 UJ	2000 U	2000 U
2,4-Dinitrotoluene	NA	380 U	360 U	370 U	390 U	400 U	410 U
2,6-Dinitrotoluene	NA	380 U	360 U	370 U	390 U	400 U	410 U
2-Chloronaphthalene	NA	380 U	360 U	370 U	390 U	400 U	410 U
2-Chlorophenol	NA	380 U	360 U	370 U	390 U	400 U	410 U
2-Methylnaphthalene	NA	380 U	360 U	370 U	390 U	400 U	410 U
2-Methylphenol (o-Cresol)	NA	380 U	360 U	370 U	390 U	400 U	410 U
2-Nitroaniline	NA	760 U	730 U	740 U	780 U	800 U	2000 U
2-Nitrophenol	NA	380 U	360 U	370 U	390 U	400 U	410 U
3,3'-Dichlorobenzidine	NA	760 U	730 U	740 U	780 U	800 U	2000 U
3-Nitroaniline	NA	760 U	730 U	740 U	780 U	800 U	2000 U
4,6-Dinitro-2-methylphenol	NA	760 U	730 U	740 U	780 U	800 U	2000 U
4-Bromophenyl-phenylether	NA	380 U	360 U	370 UJ	390 U	400 UJ	410 U
4-Chloro-3-methylphenol	NA	380 U	360 U	370 U	390 U	400 U	410 U
4-Chloroaniline	NA	380 U	360 U	370 U	390 U	400 U	410 U
4-Chlorophenyl-phenylether	NA	380 U	360 U	370 U	390 U	400 U	410 U
4-Methylphenol (p-Cresol)	NA	380 U	360 U	370 U	390 U	400 U	410 U
4-Nitroaniline	NA	760 U	730 U	740 U	780 U	800 U	2000 U
4-Nitrophenol	NA	760 U	730 U	740 U	780 U	800 U	2000 U
Acenaphthene	NA	380 U	360 U	370 U	390 U	400 U	410 U
Acenaphthylene	NA	380 U	360 U	370 U	390 U	400 U	410 U
Acetophenone	NA	380 U	360 U	370 U	390 U	400 U	NA
Anthracene	NA	380 U	360 U	370 U	390 U	400 U	410 U
Atrazine	NA	380 U	360 U	370 U	390 U	400 U	NA
Benzaldehyde	NA	380 U	360 U	370 U	390 U	400 U	NA
Benzo(a)anthracene	NA	380 U	360 U	370 U	390 U	400 U	56 J
Benzo(a)pyrene	NA	380 U	360 U	370 U	390 U	400 U	110 J
Benzo(b)fluoranthene	NA	380 U	360 U	34 J	390 U	400 U	110 J
Benzo(g,h,i)perylene	NA	380 U	360 U	370 U	390 U	400 U	99 J
Benzo(k)fluoranthene	NA	380 U	360 U	370 U	390 U	400 U	410 U
Bis(2-chloroethoxy)methane	NA	380 U	360 U	370 U	390 U	400 U	410 U

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU303-IS04-00	SWMU303-SB01-00	SWMU303-SB02-00	SWMU303-TW01-00	SWMU303-TW02-00	SWMU303-TW03-00	SWMU318-IS01-00
SAMPLE DATE	03-19-2002	03-19-2002	03-19-2002	03-20-2002	03-20-2002	03-20-2002	09-14-1997
SAMPLE DEPTH (ft)	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0'-1'	0' - 2'
Bis(2-chloroethyl)ether	NA	380 U	360 U	370 U	390 U	400 U	410 U
Bis(2-ethylhexyl) Phthalate (BEHP)	NA	110 J	46 J	96 J	390 U	400 U	230 J
Butyl Benzyl Phthalate	NA	380 U	360 U	370 U	390 U	400 U	410 U
Caprolactam	NA	380 UJ	360 U	370 U	390 U	400 U	NA
Carbazole	NA	380 U	360 U	370 U	390 U	400 U	410 U
Chrysene	NA	380 U	360 U	370 U	390 U	400 U	69 J
Dibenz(a,h)anthracene	NA	380 U	360 U	370 U	390 U	400 U	45 J
Dibenzofuran	NA	380 U	360 U	370 U	390 U	400 U	410 U
Diethyl Phthalate (DEP)	NA	380 U	360 U	370 U	390 U	400 U	410 U
Dimethyl Phthalate	NA	380 U	360 U	370 U	390 U	400 U	410 U
Di-n-butyl Phthalate (DBP)	NA	380 U	360 U	31 J	390 U	400 U	410 U
Di-n-octyl Phthalate	NA	380 U	30 J	370 U	390 U	400 U	410 U
Fluoranthene	NA	380 U	360 U	21 J	390 U	400 U	69 J
Fluorene	NA	380 U	360 U	370 U	390 U	400 U	410 U
Hexachlorobenzene	NA	380 U	360 U	370 UJ	390 U	400 UJ	410 U
Hexachlorobutadiene	NA	380 U	360 U	370 U	390 U	400 U	410 U
Hexachlorocyclopentadiene	NA	380 UJ	360 U	370 U	390 UJ	400 U	2000 U
Hexachloroethane	NA	380 U	360 U	370 U	390 U	400 U	410 U
Indeno(1,2,3-cd)pyrene	NA	380 U	360 U	36 J	390 U	400 U	91 J
Isophorone	NA	380 U	360 U	370 U	390 U	400 U	410 U
Naphthalene	NA	380 U	360 U	370 U	390 U	120 J	410 U
Nitrobenzene	NA	380 U	360 U	370 U	390 U	400 U	410 U
n-Nitrosodi-n-propylamine	NA	380 U	360 U	370 U	390 U	400 U	410 U
n-Nitrosodiphenylamine	NA	380 U	360 U	370 U	390 U	400 U	410 U
Pentachlorophenol	NA	760 U	730 U	740 U	780 U	800 U	2000 U
Phenanthrene	NA	380 U	360 U	370 U	390 U	400 U	410 U
Phenol	NA	380 U	360 U	370 U	390 U	400 U	410 U
Pyrene	NA	380 U	360 U	370 U	390 U	400 U	71 J
Metals (mg/kg)							
Arsenic	NA	0.48 J	1.1	6.1	1.1 J	0.28 U	3.1
Barium	NA	13.4	47.5	22	15	9.9	50.3
Cadmium	NA	0.087 J	0.081 J	0.23 U	0.072 U	0.035 U	1.6
Chromium	NA	7.2	6.9	14.4 J	8 J	4.5 J	24.6
Lead	NA	6.3	3.4	7.4	7.1	3.2	30.7
Mercury	NA	0.044	0.018 J	0.025 U	0.044 U	0.02 U	0.067
Selenium	NA	0.58	0.5 U	0.82	0.76	0.54 U	0.81
Silver	NA	0.1 U	0.098 U	0.1 U	0.11 U	0.11 U	1.2 U

Notes: NA = Not Available

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-IS02-00	SWMU318-IS03-00	SWMU318-SS01-00	SWMU318-SS02-00	SWMU318-SS03-00	SWMU318-TW01-00	SWMU318-TW02-00
SAMPLE DATE	09-14-1997	09-14-1997	09-17-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002
SAMPLE DEPTH (ft)	0' - 2'	0' - 2'	0' - 2'	0' - 1'	0' - 1'	0' - 1'	0' - 1'
Volatile Organic Compounds (ug/kg)							
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane (TCA)	NA	NA	NA	11 U	7 U	5 U	7 U
1,1,2,2-Tetrachloroethane	NA	NA	NA	11 U	7 U	5 U	7 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	11 U	7 U	5 U	7 U
1,1,2-Trichloroethane	NA	NA	NA	11 U	7 U	5 U	7 U
1,1-Dichloroethane	NA	NA	NA	11 U	7 U	5 U	7 U
1,1-Dichloroethene	NA	NA	NA	11 U	7 U	5 U	7 U
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	11 UJ	7 UJ	5 UJ	7 U
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	NA	NA	NA	11 UJ	7 UJ	5 UJ	7 U
1,2-Dibromoethane (EDB)	NA	NA	NA	11 U	7 U	5 U	7 U
1,2-Dichlorobenzene (o-)	1.4 U	1.2 U	9200	11 UJ	7 UJ	5 UJ	7 U
1,2-Dichloroethane	NA	NA	NA	11 U	7 U	5 U	7 U
1,2-Dichloroethene (cis)	NA	NA	NA	11 U	7 U	5 U	7 U
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	NA	NA	NA	11 U	7 U	5 U	7 U
1,2-Dichloropropane	NA	NA	NA	11 U	7 U	5 U	7 U
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene (m-)	1.4 U	1.2 U	670 U	11 UJ	7 UJ	5 UJ	7 U
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropene (cis)	NA	NA	NA	11 U	7 U	5 U	7 U
1,3-Dichloropropene (trans)	NA	NA	NA	11 U	7 U	5 U	7 U
1,4-Dichlorobenzene (p-)	1.4 U	1.2 U	4300	11 UJ	7 UJ	5 UJ	7 U
2,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA
2-Butanone (MEK)	NA	NA	NA	11 J	16 J	20	9 J
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA
2-Hexanone (MBK)	NA	NA	NA	28 U	16 U	3 J	17 U
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	28 U	16 U	1 J	17 U
Acetone	NA	NA	NA	32	40 J	78	37
Benzene	1.4 U	1.2 U	670 U	2 J	7 U	2 J	7 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-IS02-00	SWMU318-IS03-00	SWMU318-SS01-00	SWMU318-SS02-00	SWMU318-SS03-00	SWMU318-TW01-00	SWMU318-TW02-00
SAMPLE DATE	09-14-1997	09-14-1997	09-17-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002
SAMPLE DEPTH (ft)	0' - 2'	0' - 2'	0' - 2'	0' - 1'	0' - 1'	0' - 1'	0' - 1'
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	11 U	7 U	5 U	7 U
Bromoform	NA	NA	NA	11 U	7 U	5 U	13
Bromomethane	NA	NA	NA	11 U	7 U	5 UJ	7 UJ
Butylbenzene, sec-	NA	NA	NA	NA	NA	NA	NA
Butylbenzene, tert-	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	NA	NA	NA	11 U	3 J	5 U	7 U
Carbon Tetrachloride	NA	NA	NA	11 U	7 U	5 U	7 U
Chlorobenzene	1.4 U	1.2 U	670 U	11 U	7 U	5 U	7 U
Chloroethane	NA	NA	NA	11 U	7 U	5 U	7 U
Chloroform	NA	NA	NA	11 U	7 U	5 U	7 U
Chloromethane	NA	NA	NA	11 UJ	7 UJ	5 U	7 U
Cyclohexane	NA	NA	NA	11 U	7 U	5 U	7 U
Dibromochloromethane	NA	NA	NA	11 U	7 U	5 U	7 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	11 UJ	7 UJ	5 U	7 U
Ethylbenzene	1.4 U	1.2 U	670 U	11 U	7 U	5 U	7 U
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	11 U	7 U	5 U	7 U
Methyl Acetate	NA	NA	NA	11 U	7 U	5 U	7 U
Methyl Cyclohexane	NA	NA	NA	11 U	7 U	5 U	7 U
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA	11 U	7 U	5 U	7 U
Methylene Chloride	NA	NA	NA	4 J	2 J	11	18
Naphthalene	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA
Styrene (Ethenylbenzene)	NA	NA	NA	11 U	7 U	5 U	7 U
Tetrachloroethene (PCE)	NA	NA	NA	11 U	7 U	5 U	7 U
Toluene	1.4 U	1.2 U	670 U	11 U	7 U	5 U	7 U
Trichloroethene (TCE)	NA	NA	NA	11 U	7 U	5 U	7 U
Trichlorofluoromethane	NA	NA	NA	11 U	7 U	5 U	7 U
Vinyl Chloride	NA	NA	NA	11 U	7 U	5 U	7 U
Xylene, m-	NA	NA	NA	NA	NA	NA	NA
Xylene, o-	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	1.4 U	1.2 U	670 U	34 UJ	20 UJ	16 UJ	20 UJ

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-IS02-00	SWMU318-IS03-00	SWMU318-SS01-00	SWMU318-SS02-00	SWMU318-SS03-00	SWMU318-TW01-00	SWMU318-TW02-00
SAMPLE DATE	09-14-1997	09-14-1997	09-17-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002
SAMPLE DEPTH (ft)	0' - 2'	0' - 2'	0' - 2'	0' - 1'	0' - 1'	0' - 1'	0' - 1'
Semivolatile Organic Compounds (ug/kg)							
1,1'-Biphenyl	NA	NA	NA	650 U	460 U	390 U	390 U
2,2'-Oxybis[1-chloropropane]	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
2,4,5-Trichlorophenol	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
2,4,6-Trichlorophenol	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
2,4-Dichlorophenol	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
2,4-Dimethylphenol	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
2,4-Dinitrophenol	2300 U	2000 U	86000 U	3300 U	2400 U	2000 U	2000 U
2,4-Dinitrotoluene	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
2,6-Dinitrotoluene	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
2-Chloronaphthalene	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
2-Chlorophenol	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
2-Methylnaphthalene	470 U	410 U	2600 J	650 UJ	120 J	390 UJ	390 UJ
2-Methylphenol (o-Cresol)	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
2-Nitroaniline	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U
2-Nitrophenol	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
3,3'-Dichlorobenzidine	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U
3-Nitroaniline	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U
4,6-Dinitro-2-methylphenol	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U
4-Bromophenyl-phenylether	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
4-Chloro-3-methylphenol	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
4-Chloroaniline	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
4-Chlorophenyl-phenylether	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
4-Methylphenol (p-Cresol)	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
4-Nitroaniline	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U
4-Nitrophenol	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U
Acenaphthene	470 U	410 U	18000 U	650 U	34 J	390 U	390 U
Acenaphthylene	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
Acetophenone	NA	NA	NA	650 U	120 J	390 U	390 U
Anthracene	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
Atrazine	NA	NA	NA	650 U	460 U	390 U	390 U
Benzaldehyde	NA	NA	NA	650 U	460 U	390 U	33 J
Benzo(a)anthracene	470 U	410 U	4100 J	52 J	220 J	390 U	390 U
Benzo(a)pyrene	470 U	410 U	5000 J	82 J	190 J	390 U	390 U
Benzo(b)fluoranthene	470 U	410 U	5900 J	140 J	260 J	390 U	29 J
Benzo(g,h,i)perylene	470 U	410 U	5000 J	86 J	120 J	390 U	390 U
Benzo(k)fluoranthene	470 U	410 U	6900 J	130 J	300 J	390 U	390 U
Bis(2-chloroethoxy)methane	470 U	410 U	18000 U	650 U	460 U	390 U	390 U

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-IS02-00	SWMU318-IS03-00	SWMU318-SS01-00	SWMU318-SS02-00	SWMU318-SS03-00	SWMU318-TW01-00	SWMU318-TW02-00
SAMPLE DATE	09-14-1997	09-14-1997	09-17-1997	03-19-2002	03-19-2002	03-20-2002	03-20-2002
SAMPLE DEPTH (ft)	0' - 2'	0' - 2'	0' - 2'	0' - 1'	0' - 1'	0' - 1'	0' - 1'
Bis(2-chloroethyl)ether	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
Bis(2-ethylhexyl) Phthalate (BEHP)	1400 J	180 J	22000 J	300 J	1100 J	380 J	380 J
Butyl Benzyl Phthalate	470 U	410 U	2000 J	86 J	65 J	390 U	390 U
Caprolactam	NA	NA	NA	650 U	100 J	390 U	390 U
Carbazole	470 U	410 U	18000 U	650 U	44 J	390 U	390 U
Chrysene	470 U	410 U	6700 J	99 J	290 J	390 U	390 U
Dibenz(a,h)anthracene	470 U	410 U	2300 J	650 U	68 J	390 U	390 U
Dibenzofuran	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
Diethyl Phthalate (DEP)	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
Dimethyl Phthalate	470 U	410 U	18000 U	650 U	48 J	390 U	390 U
Di-n-butyl Phthalate (DBP)	470 U	410 U	2400 J	650 U	460 U	390 U	390 U
Di-n-octyl Phthalate	470 U	410 U	18000 U	170 J	55 J	390 U	390 U
Fluoranthene	470 U	410 U	7700 J	120 J	440 J	390 U	22 J
Fluorene	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
Hexachlorobenzene	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
Hexachlorobutadiene	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
Hexachlorocyclopentadiene	2300 U	2000 U	86000 U	650 UJ	460 UJ	390 UJ	390 UJ
Hexachloroethane	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
Indeno(1,2,3-cd)pyrene	470 U	410 U	4700 J	160 J	240 J	390 U	47 J
Isophorone	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
Naphthalene	470 U	410 U	17000 J	650 U	430 J	390 U	390 U
Nitrobenzene	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
n-Nitrosodi-n-propylamine	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
n-Nitrosodiphenylamine	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
Pentachlorophenol	2300 U	2000 U	86000 U	1300 U	920 U	790 U	790 U
Phenanthrene	470 U	410 U	18000 U	650 U	110 J	390 U	390 U
Phenol	470 U	410 U	18000 U	650 U	460 U	390 U	390 U
Pyrene	470 U	410 U	7800 J	90 J	370 J	390 U	390 U
Metals (mg/kg)							
Arsenic	14.3	3.7	1.3 U	1.4 J	3.3	2	0.26 U
Barium	44	25 U	396	33.2	47.8 J	36.3	13.4
Cadmium	3	0.62 U	57.2	3.5	0.41 J	0.46 J	0.14 J
Chromium	48.2	18.2	91.1	20.5	24.9	20.2	6.7
Lead	45.8	21.9	110	45.4 J	20.8 J	66.1 J	11.2 J
Mercury	0.14	0.052	0.045	0.066	0.099	0.059	0.023 J
Selenium	0.85	0.62 U	0.67 U	1	1.3	0.56 J	0.5 U
Silver	1.4 U	1.2 U	7.2	0.16 U	0.12 U	0.1 U	0.098 U

Notes: NA = Not Available

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-TW03-00	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB11-00	SWMU318-SB12-00
SAMPLE DATE	03-19-2002	3/16/2004	3/16/2004	3/22/2004	3/23/2004	3/22/2004	3/22/2004
SAMPLE DEPTH (ft)	0' - 1'	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)							
1,1,1,2-Tetrachloroethane	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
1,1,1-Trichloroethane (TCA)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,1,2,2-Tetrachloroethane	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	5 U	NA	10 UJ	12 U	NA	NA	NA
1,1,2-Trichloroethane	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,1-Dichloroethane	5 U	12 U	10 UJ	12 U	5.6 U	5.7 U	6.2 U
1,1-Dichloroethene	5 U	12 U	10 UJ	12 U	5.6 U	5.7 U	6.2 U
1,1-Dichloropropene	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
1,2,3-Trichlorobenzene	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
1,2,3-Trichloropropane	NA	NA	NA				
1,2,4-Trichlorobenzene	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,2,4-Trimethylbenzene	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
1,2-Dibromo-3-chloropropane (DBCP)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,2-Dibromoethane (EDB)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,2-Dichlorobenzene (o-)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,2-Dichloroethane	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,2-Dichloroethene (cis)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,2-Dichloroethene (total)	NA	NA	10 U	12 U	NA	NA	NA
1,2-Dichloroethene (trans)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,2-Dichloropropane	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,3,5-Trimethylbenzene	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
1,3-Dichlorobenzene (m-)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,3-Dichloropropane	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
1,3-Dichloropropene (cis)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,3-Dichloropropene (trans)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
1,4-Dichlorobenzene (p-)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
2,2-Dichloropropane	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
2-Butanone (MEK)	8 J	NA	10 UJ	12 U	NA	NA	NA
2-Chlorotoluene	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
2-Hexanone (MBK)	13 U	NA	10 UJ	12 U	NA	NA	NA
4-Chlorotoluene	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
4-Isopropyltoluene	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
4-Methyl-2-pentanone (MIBK)	13 U	NA	10 U	12 U	NA	NA	NA
Acetone	38 J	NA	10 UJ	12 UJ	NA	NA	NA
Benzene	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Bromobenzene	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-TW03-00	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB11-00	SWMU318-SB12-00
SAMPLE DATE	03-19-2002	3/16/2004	3/16/2004	3/22/2004	3/23/2004	3/22/2004	3/22/2004
SAMPLE DEPTH (ft)	0' - 1'	0-1	0-1	0-1	0-1	0-1	0-1
Bromochloromethane	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
Bromodichloromethane	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Bromoform	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Bromomethane	5 U	12 U	10 U	12 U	11 U	11 U	12 U
Butylbenzene, sec-	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
Butylbenzene, tert-	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
Carbon Disulfide	5 U	NA	10 UJ	12 U	NA	NA	NA
Carbon Tetrachloride	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Chlorobenzene	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Chloroethane	5 UJ	12 U	10 U	12 U	11 U	11 U	12 U
Chloroform	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Chloromethane	5 U	12 U	10 U	12 U	11 U	11 U	12 U
Cyclohexane	5 U	NA	10 U	12 U	NA	NA	NA
Dibromochloromethane	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Dibromomethane	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
Dichlorodifluoromethane	5 UJ	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Ethylbenzene	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Hexachlorobutadiene	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
Isopropylbenzene (Cumene)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Methyl Acetate	5 U	NA	10 UJ	12 U	NA	NA	NA
Methyl Cyclohexane	5 U	NA	10 U	12 U	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	5 U	NA	10 U	12 U	NA	NA	NA
Methylene Chloride	1 J	12 U	10 U	23 UJ	11 U	11 U	13
Naphthalene	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
n-Butylbenzene	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
n-Propylbenzene	NA	12 U	12 U	6.3 U	5.6 U	5.7 U	6.2 U
Styrene (Ethenylbenzene)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Tetrachloroethene (PCE)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Toluene	5 U	4 J	10 U	12 U	5.6 U	5.7 U	6.2 U
Trichloroethene (TCE)	5 U	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Trichlorofluoromethane	5 U	NA	10 UJ	2 J	NA	NA	NA
Vinyl Chloride	5 U	12 U	10 U	12 U	11 U	11 U	12 U
Xylene, m-	NA	2 J	10 U	12 U	4.7 J	5.7 U	6.2 U
Xylene, o-	NA	12 U	10 U	12 U	5.6 U	5.7 U	6.2 U
Xylenes, total	15 UJ	NA	10 U	12 U	NA	NA	NA

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-TW03-00	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB11-00	SWMU318-SB12-00
SAMPLE DATE	03-19-2002	3/16/2004	3/16/2004	3/22/2004	3/23/2004	3/22/2004	3/22/2004
SAMPLE DEPTH (ft)	0' - 1'	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug/kg)							
1,1'-Biphenyl	370 U	NA	NA	390 U	400 U	NA	NA
2,2'-Oxybis[1-chloropropane]	370 U	NA	NA	390 U	400 U	NA	NA
2,4,5-Trichlorophenol	370 U	NA	NA	980 U	1000 U	NA	NA
2,4,6-Trichlorophenol	370 U	NA	NA	390 U	400 U	NA	NA
2,4-Dichlorophenol	370 U	NA	NA	390 U	400 U	NA	NA
2,4-Dimethylphenol	370 U	NA	NA	390 U	400 U	NA	NA
2,4-Dinitrophenol	1900 U	NA	NA	980 U	1000 U	NA	NA
2,4-Dinitrotoluene	370 U	NA	NA	390 U	400 U	NA	NA
2,6-Dinitrotoluene	370 U	NA	NA	390 U	400 U	NA	NA
2-Chloronaphthalene	370 U	NA	NA	390 U	400 U	NA	NA
2-Chlorophenol	370 U	NA	NA	390 U	400 U	NA	NA
2-Methylnaphthalene	370 UJ	NA	NA	390 U	400 U	NA	NA
2-Methylphenol (o-Cresol)	370 U	NA	NA	390 U	400 U	NA	NA
2-Nitroaniline	740 U	NA	NA	980 U	1000 U	NA	NA
2-Nitrophenol	370 U	NA	NA	390 U	400 U	NA	NA
3,3'-Dichlorobenzidine	740 U	NA	NA	390 UJ	400 UJ	NA	NA
3-Nitroaniline	740 U	NA	NA	980 U	1000 U	NA	NA
4,6-Dinitro-2-methylphenol	740 U	NA	NA	980 U	1000 U	NA	NA
4-Bromophenyl-phenylether	370 U	NA	NA	390 U	400 U	NA	NA
4-Chloro-3-methylphenol	370 U	NA	NA	390 U	400 U	NA	NA
4-Chloroaniline	370 U	NA	NA	390 U	400 U	NA	NA
4-Chlorophenyl-phenylether	370 U	NA	NA	390 U	400 U	NA	NA
4-Methylphenol (p-Cresol)	370 U	NA	NA	390 U	400 U	NA	NA
4-Nitroaniline	740 U	NA	NA	980 UJ	1000 UJ	NA	NA
4-Nitrophenol	740 U	NA	NA	980 U	1000 U	NA	NA
Acenaphthene	370 U	NA	NA	390 U	400 U	NA	NA
Acenaphthylene	370 U	NA	NA	390 U	400 U	NA	NA
Acetophenone	370 U	NA	NA	390 U	400 U	NA	NA
Anthracene	370 U	NA	NA	390 U	400 U	NA	NA
Atrazine	370 U	NA	NA	390 U	400 U	NA	NA
Benzaldehyde	370 U	NA	NA	390 U	400 U	NA	NA
Benzo(a)anthracene	370 U	NA	NA	390 U	400 U	NA	NA
Benzo(a)pyrene	370 U	NA	NA	390 U	400 U	NA	NA
Benzo(b)fluoranthene	370 U	NA	NA	390 U	400 U	NA	NA
Benzo(g,h,i)perylene	370 U	NA	NA	390 U	400 U	NA	NA
Benzo(k)fluoranthene	370 U	NA	NA	390 U	400 U	NA	NA
Bis(2-chloroethoxy)methane	370 U	NA	NA	390 U	400 U	NA	NA

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-TW03-00	SWMU318-SB05-00	SWMU318-SB06-00	SWMU318-SB09-00	SWMU318-SB10-00	SWMU318-SB11-00	SWMU318-SB12-00
SAMPLE DATE	03-19-2002	3/16/2004	3/16/2004	3/22/2004	3/23/2004	3/22/2004	3/22/2004
SAMPLE DEPTH (ft)	0' - 1'	0-1	0-1	0-1	0-1	0-1	0-1
Bis(2-chloroethyl)ether	370 U	NA	NA	390 U	400 U	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP)	1100	NA	NA	390 U	400 U	NA	NA
Butyl Benzyl Phthalate	370 U	NA	NA	390 U	400 U	NA	NA
Caprolactam	370 U	NA	NA	390 U	400 U	NA	NA
Carbazole	370 U	NA	NA	390 U	400 U	NA	NA
Chrysene	370 U	NA	NA	390 U	400 U	NA	NA
Dibenz(a,h)anthracene	370 U	NA	NA	390 U	400 U	NA	NA
Dibenzofuran	370 U	NA	NA	390 U	400 U	NA	NA
Diethyl Phthalate (DEP)	370 U	NA	NA	390 U	400 U	NA	NA
Dimethyl Phthalate	370 U	NA	NA	390 U	400 U	NA	NA
Di-n-butyl Phthalate (DBP)	370 U	NA	NA	390 U	400 U	NA	NA
Di-n-octyl Phthalate	37 J	NA	NA	390 U	400 U	NA	NA
Fluoranthene	370 U	NA	NA	390 U	400 U	NA	NA
Fluorene	370 U	NA	NA	390 U	400 U	NA	NA
Hexachlorobenzene	370 U	NA	NA	390 U	400 U	NA	NA
Hexachlorobutadiene	370 U	NA	NA	390 U	400 U	NA	NA
Hexachlorocyclopentadiene	370 UJ	NA	NA	390 U	400 U	NA	NA
Hexachloroethane	370 U	NA	NA	390 U	400 U	NA	NA
Indeno(1,2,3-cd)pyrene	370 U	NA	NA	390 U	400 U	NA	NA
Isophorone	370 U	NA	NA	390 U	400 U	NA	NA
Naphthalene	370 U	NA	NA	390 U	400 U	NA	NA
Nitrobenzene	370 U	NA	NA	390 U	400 U	NA	NA
n-Nitrosodi-n-propylamine	370 U	NA	NA	390 U	400 U	NA	NA
n-Nitrosodiphenylamine	370 U	NA	NA	390 U	400 U	NA	NA
Pentachlorophenol	740 U	NA	NA	980 U	1000 U	NA	NA
Phenanthrene	370 U	NA	NA	390 U	400 U	NA	NA
Phenol	370 U	NA	NA	390 U	400 U	NA	NA
Pyrene	370 U	NA	NA	390 U	400 U	NA	NA
Metals (mg/kg)							
Arsenic	0.67 J	NA	NA	2.6	0.82 J	NA	NA
Barium	24.6	NA	NA	20.3 J	11.7 J	NA	NA
Cadmium	0.57	NA	NA	0.55 J	0.87 U	NA	NA
Chromium	9.2	NA	NA	10.3	3.7	NA	NA
Lead	16.7 J	NA	NA	21.7 J	8.4 J	NA	NA
Mercury	0.027 J	NA	NA	0.03 J	0.02 J	NA	NA
Selenium	0.58	NA	NA	0.69 J	0.4 U	NA	NA
Silver	0.1 U	NA	NA	0.22 U	0.2 U	NA	NA

Notes: NA = Not Available

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB16-00	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB21-00	SWMU318-SB22-00	SWMU318-SB23-00	SWMU318-SB24-00
SAMPLE DATE	2/4/2005	2/4/2005	2/3/2005	2/3/2005	2/7/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)							
1,1,1,2-Tetrachloroethane	2.4 U	2.4 U	2.4 U	2.1 U	2 U	2.4 U	2.4 U
1,1,1-Trichloroethane (TCA)	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
1,1,2,2-Tetrachloroethane	11 U	2.4 U	11 UJ	2.1 U	2 U	2.4 U	2.4 U
1,1,2-Trichloro-1,2,2-trifluoroethane	11 U	NA	11 UJ	NA	NA	NA	NA
1,1,2-Trichloroethane	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
1,1-Dichloroethane	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
1,1-Dichloroethene	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
1,1-Dichloropropene	1.2 U	1.2 U	1.2 U	1.1 U	1 U	1.2 U	1.2 U
1,2,3-Trichlorobenzene	1.9 J	6.0 U	0.82 J	5.4 U	0.7 J	6.1 U	5.9 U
1,2,3-Trichloropropane	2.4 U	2.4 U	2.4 U	2.1 U	2 U	2.4 U	2.4 U
1,2,4-Trichlorobenzene	11 U	6.0 U	11 UJ	5.4 U	0.53 J	6.1 U	5.9 U
1,2,4-Trimethylbenzene	2.4 U	2.4 U	0.59 J	2.1 U	2 U	2.4 U	2.4 U
1,2-Dibromo-3-chloropropane (DBCP)	11 U	6.0 U	11 UJ	5.4 U	5 U	6.1 U	5.9 U
1,2-Dibromoethane (EDB)	11 U	2.4 U	11 UJ	2.1 U	2 U	2.4 U	2.4 U
1,2-Dichlorobenzene (o-)	11 U	2.4 U	11 UJ	2.1 U	2 U	2.4 U	2.4 U
1,2-Dichloroethane	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
1,2-Dichloroethene (cis)	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
1,2-Dichloroethene (total)	11 U	NA	11 UJ	NA	NA	NA	NA
1,2-Dichloroethene (trans)	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
1,2-Dichloropropane	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
1,3,5-Trimethylbenzene	2.4 U	2.4 U	0.47 J	2.1 U	2 U	2.4 U	2.4 U
1,3-Dichlorobenzene (m-)	11 U	2.4 U	11 UJ	2.1 U	2 U	2.4 U	2.4 U
1,3-Dichloropropane	1.2 U	1.2 U	1.2 U	1.1 U	1 U	1.2 U	1.2 U
1,3-Dichloropropene (cis)	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
1,3-Dichloropropene (trans)	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
1,4-Dichlorobenzene (p-)	11 U	2.4 U	11 UJ	2.1 U	2 U	2.4 U	2.4 U
2,2-Dichloropropane	1.2 U	1.2 U	1.2 U	1.1 U	1 U	1.2 U	1.2 U
2-Butanone (MEK)	11 U	NA	11 UJ	NA	NA	NA	NA
2-Chlorotoluene	2.4 U	2.4 U	2.4 U	2.1 U	2 U	2.4 U	2.4 U
2-Hexanone (MBK)	11 U	NA	11 UJ	NA	NA	NA	NA
4-Chlorotoluene	2.4 U	2.4 U	2.4 U	2.1 U	2 U	2.4 U	2.4 U
4-Isopropyltoluene	2.4 U	2.4 U	2.4 U	2.1 U	2 U	2.4 U	2.4 U
4-Methyl-2-pentanone (MIBK)	11 U	NA	11 UJ	NA	NA	NA	NA
Acetone	11 U	NA	11 UJ	NA	NA	NA	NA
Benzene	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
Bromobenzene	2.4 U	2.4 U	2.4 U	2.1 U	2 U	2.4 U	2.4 U

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB16-00	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB21-00	SWMU318-SB22-00	SWMU318-SB23-00	SWMU318-SB24-00
SAMPLE DATE	2/4/2005	2/4/2005	2/3/2005	2/3/2005	2/7/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Bromochloromethane	2.4 U	2.4 U	2.4 U	2.1 U	2 U	2.4 U	2.4 U
Bromodichloromethane	11 U	2.4 U	11 UJ	2.1 U	2 U	2.4 U	2.4 U
Bromoform	11 U	2.4 U	11 UJ	2.1 U	2 U	2.4 U	2.4 U
Bromomethane	11 U	6.0 U	11 UJ	5.4 U	5 U	6.1 U	5.9 U
Butylbenzene, sec-	2.4 U	2.4 U	2.4 U	2.1 U	2 U	2.4 U	2.4 U
Butylbenzene, tert-	2.4 U	2.4 U	2.4 U	2.1 U	2 U	2.4 U	2.4 U
Carbon Disulfide	11 U	NA	11 UJ	NA	NA	NA	NA
Carbon Tetrachloride	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
Chlorobenzene	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
Chloroethane	11 U	6.0 U	11 UJ	5.4 U	5 U	6.1 U	5.9 U
Chloroform	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
Chloromethane	11 U	6.0 U	11 UJ	5.4 U	5 U	6.1 U	5.9 U
Cyclohexane	11 U	NA	11 UJ	NA	NA	NA	NA
Dibromochloromethane	11 U	2.4 U	11 UJ	2.1 U	2 U	2.4 U	2.4 U
Dibromomethane	2.4 U	2.4 U	2.4 U	2.1 U	2 U	2.4 U	2.4 U
Dichlorodifluoromethane	11 U	6.0 U	11 UJ	5.4 U	5 U	6.1 U	5.9 U
Ethylbenzene	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
Hexachlorobutadiene	6.1 U	6.0 U	6.0 U	5.4 U	5 U	6.1 U	5.9 U
Isopropylbenzene (Cumene)	11 U	2.4 U	11 UJ	2.1 U	2 U	2.4 U	2.4 U
Methyl Acetate	11 U	NA	11 UJ	NA	NA	NA	NA
Methyl Cyclohexane	11 U	NA	11 UJ	NA	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	11 U	NA	11 UJ	NA	NA	NA	NA
Methylene Chloride	17 U	6.0 U	15 U	5.4 U	5 U	6.1 U	5.9 U
Naphthalene	6.1 U	6.0 U	1.1 J	5.4 U	5 U	6.1 U	5.9 U
n-Butylbenzene	2.4 U	2.4 U	2.4 U	2.1 U	2 U	2.4 U	2.4 U
n-Propylbenzene	2.4 U	2.4 U	2.4 U	2.1 U	2 U	2.4 U	2.4 U
Styrene (Ethenylbenzene)	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
Tetrachloroethene (PCE)	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
Toluene	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
Trichloroethene (TCE)	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
Trichlorofluoromethane	11 U	6.0 U	11 UJ	5.4 U	5 U	6.1 U	5.9 U
Vinyl Chloride	11 U	2.4 U	11 UJ	2.1 U	2 U	2.4 U	2.4 U
Xylene, m-	11 U	2.4 U	11 UJ	2.1 U	2 U	2.4 U	2.4 U
Xylene, o-	11 U	1.2 U	11 UJ	1.1 U	1 U	1.2 U	1.2 U
Xylenes, total	11 U	NA	11 UJ	NA	NA	NA	NA

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB16-00	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB21-00	SWMU318-SB22-00	SWMU318-SB23-00	SWMU318-SB24-00
SAMPLE DATE	2/4/2005	2/4/2005	2/3/2005	2/3/2005	2/7/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Semivolatile Organic Compounds (ug/kg)							
1,1'-Biphenyl	390 U	390 U	NA	360 U	NA	400 U	390 U
2,2'-Oxybis[1-chloropropane]	390 U	390 U	NA	360 U	NA	400 U	390 U
2,4,5-Trichlorophenol	990 U	980 U	NA	890 U	NA	1000 U	980 U
2,4,6-Trichlorophenol	390 U	390 U	NA	360 U	NA	400 U	390 U
2,4-Dichlorophenol	390 U	390 U	NA	360 U	NA	400 U	390 U
2,4-Dimethylphenol	390 U	390 U	NA	360 U	NA	400 U	390 U
2,4-Dinitrophenol	990 U	980 U	NA	890 U	NA	1000 U	980 U
2,4-Dinitrotoluene	390 U	390 U	NA	360 U	NA	400 U	390 U
2,6-Dinitrotoluene	390 U	390 U	NA	360 U	NA	400 U	390 U
2-Chloronaphthalene	390 U	390 U	NA	360 U	NA	400 U	390 U
2-Chlorophenol	390 U	390 U	NA	360 U	NA	400 U	390 U
2-Methylnaphthalene	390 U	390 U	NA	360 U	NA	400 U	390 U
2-Methylphenol (o-Cresol)	390 U	390 U	NA	360 U	NA	400 U	390 U
2-Nitroaniline	990 U	980 U	NA	890 U	NA	1000 U	980 U
2-Nitrophenol	390 U	390 U	NA	360 U	NA	400 U	390 U
3,3'-Dichlorobenzidine	390 U	390 U	NA	360 U	NA	400 U	390 U
3-Nitroaniline	990 U	980 U	NA	890 U	NA	1000 U	980 U
4,6-Dinitro-2-methylphenol	990 U	980 U	NA	890 U	NA	1000 U	980 U
4-Bromophenyl-phenylether	390 U	390 U	NA	360 U	NA	400 U	390 U
4-Chloro-3-methylphenol	390 U	390 U	NA	360 U	NA	400 U	390 U
4-Chloroaniline	390 U	390 U	NA	360 U	NA	400 U	390 U
4-Chlorophenyl-phenylether	390 U	390 U	NA	360 U	NA	400 U	390 U
4-Methylphenol (p-Cresol)	390 U	390 U	NA	360 U	NA	400 U	390 U
4-Nitroaniline	990 U	980 U	NA	890 U	NA	1000 U	980 U
4-Nitrophenol	990 U	980 U	NA	890 U	NA	1000 U	980 U
Acenaphthene	390 U	390 U	NA	360 U	NA	400 U	390 U
Acenaphthylene	390 U	390 U	NA	360 U	NA	400 U	390 U
Acetophenone	390 U	390 U	NA	360 U	NA	400 U	390 U
Anthracene	390 U	390 U	NA	360 U	NA	400 U	390 U
Atrazine	390 U	390 U	NA	360 U	NA	400 U	390 U
Benzaldehyde	390 U	390 U	NA	360 U	NA	400 U	390 U
Benzo(a)anthracene	390 U	390 U	NA	360 U	NA	400 U	390 U
Benzo(a)pyrene	390 U	390 U	NA	360 U	NA	400 U	390 U
Benzo(b)fluoranthene	390 U	390 U	NA	360 U	NA	400 U	390 U
Benzo(g,h,i)perylene	390 U	390 U	NA	360 U	NA	400 U	390 U
Benzo(k)fluoranthene	390 U	390 U	NA	360 U	NA	400 U	390 U
Bis(2-chloroethoxy)methane	390 U	390 U	NA	360 U	NA	400 U	390 U

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB16-00	SWMU318-SB19-00	SWMU318-SB20-00	SWMU318-SB21-00	SWMU318-SB22-00	SWMU318-SB23-00	SWMU318-SB24-00
SAMPLE DATE	2/4/2005	2/4/2005	2/3/2005	2/3/2005	2/7/2005	2/3/2005	2/7/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Bis(2-chloroethyl)ether	390 U	390 U	NA	360 U	NA	400 U	390 U
Bis(2-ethylhexyl) Phthalate (BEHP)	220 J	390 U	NA	360 U	NA	400 U	2,100
Butyl Benzyl Phthalate	390 U	390 U	NA	360 U	NA	400 U	390 U
Caprolactam	390 U	390 U	NA	360 U	NA	400 U	390 U
Carbazole	390 U	390 U	NA	360 U	NA	400 U	390 U
Chrysene	390 U	390 U	NA	360 U	NA	400 U	390 U
Dibenz(a,h)anthracene	390 U	390 U	NA	360 U	NA	400 U	390 U
Dibenzofuran	390 U	390 U	NA	360 U	NA	400 U	390 U
Diethyl Phthalate (DEP)	390 U	390 U	NA	360 U	NA	400 U	390 U
Dimethyl Phthalate	390 U	390 U	NA	360 U	NA	400 U	390 U
Di-n-butyl Phthalate (DBP)	390 U	390 U	NA	360 U	NA	400 U	390 U
Di-n-octyl Phthalate	390 U	390 U	NA	360 U	NA	400 U	390 U
Fluoranthene	390 U	390 U	NA	360 U	NA	400 U	390 U
Fluorene	390 U	390 U	NA	360 U	NA	400 U	390 U
Hexachlorobenzene	390 U	390 U	NA	360 U	NA	400 U	390 U
Hexachlorobutadiene	390 U	390 U	NA	360 U	NA	400 U	390 U
Hexachlorocyclopentadiene	390 U	390 U	NA	360 U	NA	400 U	390 U
Hexachloroethane	390 U	390 U	NA	360 U	NA	400 U	390 U
Indeno(1,2,3-cd)pyrene	390 U	390 U	NA	360 U	NA	400 U	390 U
Isophorone	390 U	390 U	NA	360 U	NA	400 U	390 U
Naphthalene	390 U	390 U	NA	360 U	NA	400 U	390 U
Nitrobenzene	390 U	390 U	NA	360 U	NA	400 U	390 U
n-Nitrosodi-n-propylamine	390 U	390 U	NA	360 U	NA	400 U	390 U
n-Nitrosodiphenylamine	390 U	390 U	NA	360 U	NA	400 U	390 U
Pentachlorophenol	990 U	980 U	NA	890 U	NA	1000 U	980 U
Phenanthrene	390 U	390 U	NA	360 U	NA	400 U	390 U
Phenol	390 U	390 U	NA	360 U	NA	400 U	390 U
Pyrene	390 U	390 U	NA	360 U	NA	400 U	390 U
Metals (mg/kg)							
Arsenic	2 U	3.4 U	NA	0.8 U	NA	NA	2.3 U
Barium	23 J	17.3 J	NA	9.4 J	NA	NA	26.7 J
Cadmium	3.1	0.54 U	NA	0.23 U	NA	NA	1.4
Chromium	15.5	12.5	NA	5.6	NA	NA	17
Lead	32.5	29.2	NA	12.8	NA	NA	60.8
Mercury	0.07 U	0.05 U	NA	0.03 U	NA	NA	0.04 U
Selenium	0.66 U	1 U	NA	0.67 U	NA	NA	0.78 U
Silver	0.13 U	0.15 U	NA	0.13 U	NA	NA	0.13 U

Notes: NA = Not Available

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB26-00	SWMU318-SB25-00	SWMU318-SB28-00
SAMPLE DATE	2/4/2005	2/7/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1
Volatile Organic Compounds (ug/kg)			
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U
1,1,1-Trichloroethane (TCA)	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA
1,1,2-Trichloroethane	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U
1,1-Dichloropropene	1 U	1 U	1 U
1,2,3-Trichlorobenzene	1.3 J	6 U	6 U
1,2,3-Trichloropropane	2 U	2 U	2 U
1,2,4-Trichlorobenzene	0.94 J	6 U	6 U
1,2,4-Trimethylbenzene	0.65 J	2 U	2 U
1,2-Dibromo-3-chloropropane (DBCP)	6 U	6 U	6 U
1,2-Dibromoethane (EDB)	2 U	2 U	2 U
1,2-Dichlorobenzene (o-)	2 U	2 U	2 U
1,2-Dichloroethane	1 U	1 U	1 U
1,2-Dichloroethene (cis)	1 U	1 U	1 U
1,2-Dichloroethene (total)	NA	NA	NA
1,2-Dichloroethene (trans)	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U
1,3-Dichlorobenzene (m-)	2 U	2 U	2 U
1,3-Dichloropropane	1 U	1 U	1 U
1,3-Dichloropropene (cis)	1 U	1 U	1 U
1,3-Dichloropropene (trans)	1 U	1 U	1 U
1,4-Dichlorobenzene (p-)	2 U	2 U	2 U
2,2-Dichloropropane	1 U	1 U	1 U
2-Butanone (MEK)	NA	NA	NA
2-Chlorotoluene	2 U	2 U	2 U
2-Hexanone (MBK)	NA	NA	NA
4-Chlorotoluene	2 U	2 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U
4-Methyl-2-pentanone (MIBK)	NA	NA	NA
Acetone	NA	NA	NA
Benzene	1 U	1 U	1 U
Bromobenzene	2 U	2 U	2 U

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB26-00	SWMU318-SB25-00	SWMU318-SB28-00
SAMPLE DATE	2/4/2005	2/7/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1
Bromochloromethane	2 U	2 U	2 U
Bromodichloromethane	2 U	2 U	2 U
Bromoform	2 U	2 U	2 U
Bromomethane	6 U	6 U	6 U
Butylbenzene, sec-	2 U	2 U	2 U
Butylbenzene, tert-	2 U	2 U	2 U
Carbon Disulfide	NA	NA	NA
Carbon Tetrachloride	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U
Chloroethane	6 U	6 U	6 U
Chloroform	1 U	1 U	1 U
Chloromethane	6 U	6 U	6 U
Cyclohexane	NA	NA	NA
Dibromochloromethane	2 U	2 U	2 U
Dibromomethane	2 U	2 U	2 U
Dichlorodifluoromethane	6 U	6 U	6 U
Ethylbenzene	1 U	1 U	1 U
Hexachlorobutadiene	6 U	6 U	6 U
Isopropylbenzene (Cumene)	2 U	2 U	2 U
Methyl Acetate	NA	NA	NA
Methyl Cyclohexane	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	NA	NA	NA
Methylene Chloride	6 U	6 U	6 U
Naphthalene	1.5 J	6 U	6 U
n-Butylbenzene	0.66 J	2 U	2 U
n-Propylbenzene	2 U	2 U	2 U
Styrene (Ethenylbenzene)	1 U	1 U	1 U
Tetrachloroethene (PCE)	1 U	1 U	1 U
Toluene	1 U	1 U	1 U
Trichloroethene (TCE)	1 U	1 U	1 U
Trichlorofluoromethane	6 U	6 U	6 U
Vinyl Chloride	2 U	2 U	2 U
Xylene, m-	2 U	2 U	2 U
Xylene, o-	1 U	1 U	1 U
Xylenes, total	NA	NA	NA

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB26-00	SWMU318-SB25-00	SWMU318-SB28-00
SAMPLE DATE	2/4/2005	2/7/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1
Semivolatile Organic Compounds (ug/kg)			
1,1'-Biphenyl	NA	NA	NA
2,2'-Oxybis[1-chloropropane]	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA
2,4-Dichlorophenol	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA
2-Chlorophenol	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA
2-Methylphenol (o-Cresol)	NA	NA	NA
2-Nitroaniline	NA	NA	NA
2-Nitrophenol	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA
3-Nitroaniline	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA
4-Bromophenyl-phenylether	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA
4-Chloroaniline	NA	NA	NA
4-Chlorophenyl-phenylether	NA	NA	NA
4-Methylphenol (p-Cresol)	NA	NA	NA
4-Nitroaniline	NA	NA	NA
4-Nitrophenol	NA	NA	NA
Acenaphthene	NA	NA	NA
Acenaphthylene	NA	NA	NA
Acetophenone	NA	NA	NA
Anthracene	NA	NA	NA
Atrazine	NA	NA	NA
Benzaldehyde	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA
Bis(2-chloroethoxy)methane	NA	NA	NA

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-SB26-00	SWMU318-SB25-00	SWMU318-SB28-00
SAMPLE DATE	2/4/2005	2/7/2005	2/8/2005
SAMPLE DEPTH (ft)	0-1	0-1	0-1
Bis(2-chloroethyl)ether	NA	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP)	NA	NA	NA
Butyl Benzyl Phthalate	NA	NA	NA
Caprolactam	NA	NA	NA
Carbazole	NA	NA	NA
Chrysene	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA
Dibenzofuran	NA	NA	NA
Diethyl Phthalate (DEP)	NA	NA	NA
Dimethyl Phthalate	NA	NA	NA
Di-n-butyl Phthalate (DBP)	NA	NA	NA
Di-n-octyl Phthalate	NA	NA	NA
Fluoranthene	NA	NA	NA
Fluorene	NA	NA	NA
Hexachlorobenzene	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA
Hexachloroethane	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA
Isophorone	NA	NA	NA
Naphthalene	NA	NA	NA
Nitrobenzene	NA	NA	NA
n-Nitrosodi-n-propylamine	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	NA
Pentachlorophenol	NA	NA	NA
Phenanthrene	NA	NA	NA
Phenol	NA	NA	NA
Pyrene	NA	NA	NA
Metals (mg/kg)			
Arsenic	NA	NA	NA
Barium	NA	NA	NA
Cadmium	NA	NA	NA
Chromium	NA	NA	NA
Lead	NA	NA	NA
Mercury	NA	NA	NA
Selenium	NA	NA	NA
Silver	NA	NA	NA

Notes: NA = Not Available

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL, STATISTICAL SUMMARY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

	Minimum Non-Detect	Maximum Non-Detect	Minimum Detected	Maximum Detected	Frequency of Detection	Arithmatic Mean Positive Detects	Median Positive Detects	Arithmatic Mean Half Non-Detects	Standard Deviation	Upper 95% Confidence Level	Location of Maximum Detect
Volatile Organic Compounds (ug/kg)											
1,1,1,2-Tetrachloroethane	2 U	12 U	0	0	0/16	NA	NA	2.2	1.7	3.0	
1,1,1-Trichloroethane (TCA)	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
1,1,2,2-Tetrachloroethane	2 U	12 U	0	0	0/22	NA	NA	3.0	1.8	3.7	
1,1,2-Trichloro-1,2,2-trifluoroethane	5 U	12 U	0	0	0/10	NA	NA	4.25	1.38	5.0	
1,1,2-Trichloroethane	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
1,1-Dichloroethane	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
1,1-Dichloroethene	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
1,1-Dichloropropene	1 U	12 U	0	0	0/16	NA	NA	1.9	1.9	2.7	
1,2,3-Trichlorobenzene	5 U	12 U	0.7 J	1.93 J	4/16	1.19	1.06	2.9	1.5	3.5	SWMU318-SB16-00
1,2,3-Trichloropropane	2 U	2 U	0	0	0/10	NA	NA	1.2	0.1	1.2	
1,2,4-Trichlorobenzene	5 U	12 U	0.53 J	0.94 J	2/22	0.74	0.74	3.45	1.5	4.0	SWMU318-SB26-00
1,2,4-Trimethylbenzene	2 U	12 U	0.59 J	0.65 J	2/16	0.62	0.62	2.15	1.7	2.9	SWMU318-SB26-00
1,2-Dibromo-3-chloropropane (DBCP)	5 U	12 U	0	0	0/22	NA	NA	3.6	1.3	4.1	
1,2-Dibromoethane (EDB)	2 U	12 U	0	0	0/22	NA	NA	3.0	1.8	3.7	
1,2-Dichlorobenzene (o-)	1 U	12 U	9200	9200	1/26	9200	9200	356.5	1804	961	SWMU318-SS01-00
1,2-Dichloroethane	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
1,2-Dichloroethene (cis)	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
1,2-Dichloroethene (total)	10 U	12 U	0	0	0/4	NA	NA	5.5	0.4	6.0	
1,2-Dichloroethene (trans)	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
1,2-Dichloropropane	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
1,3,5-Trimethylbenzene	2 U	12 U	0.47 J	0.47 J	1/16	0.47	0.47	2.17	1.72	2.9	SWMU318-SB20-00
1,3-Dichlorobenzene (m-)	1 U	670 U	0	0	0/26	NA	NA	15.5	65.2	37.3	
1,3-Dichloropropane	1 U	12 U	0	0	0/16	NA	NA	1.9	1.9	2.7	
1,3-Dichloropropene (cis)	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
1,3-Dichloropropene (trans)	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
1,4-Dichlorobenzene (p-)	1 U	12 U	1.8	4300	2/26	2150.9	2150.9	168.1	842.8	450.4	SWMU318-SS01-00
2,2-Dichloropropane	1 U	12 U	0	0	0/16	NA	NA	1.9	1.9	2.7	
2-Butanone (MEK)	10 UJ	12 U	7 J	20	6/10	11.83	10	9.3	5.0	12.2	SWMU318-TW01-00
2-Chlorotoluene	2 U	12 U	0	0	0/16	NA	NA	2.2	1.7	3.0	
2-Hexanone (MBK)	10 UJ	28 U	3 J	3 J	1/10	3	3	6.9	2.9	8.6	SWMU318-TW01-00
4-Chlorotoluene	2 U	12 U	0	0	0/16	NA	NA	2.2	1.7	3.0	
4-Isopropyltoluene	2 U	12 U	0	0	0/16	NA	NA	2.2	1.7	3.0	
4-Methyl-2-pentanone (MIBK)	10 U	28 U	1 J	1 J	1/10	1	1	6.7	3.3	8.6	SWMU318-TW01-00
Acetone	10 UJ	12 UJ	27 J	78	6/10	42	37.5	27.4	23.2	40.9	SWMU318-TW01-00
Benzene	1 U	670 U	2 J	2 J	2/26	2	2	15.2	65.3	37.0	SWMU318-SS02-00,SWMU318-TW01-00
Bromobenzene	2 U	12 U	0	0	0/16	NA	NA	2.2	1.7	3.0	
Bromochloromethane	2 U	12 U	0	0	0/16	NA	NA	2.2	1.7	3.0	
Bromodichloromethane	2 U	12 U	0	0	0/22	NA	NA	3.0	1.8	3.7	
Bromoform	2 U	12 U	13	13	1/22	13	13	3.4	2.8	4.5	SWMU318-TW02-00
Bromomethane	5 U	12 U	0	0	0/22	NA	NA	4.0	1.4	4.5	
Butylbenzene, sec-	2 U	12 U	0	0	0/16	NA	NA	2.2	1.7	3.0	
Butylbenzene, tert-	2 U	12 U	0	0	0/16	NA	NA	2.2	1.7	3.0	

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL, STATISTICAL SUMMARY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

	Minimum Non-Detect	Maximum Non-Detect	Minimum Detected	Maximum Detected	Frequency of Detection	Arithmatic Mean Positive Detects	Median Positive Detects	Arithmatic Mean Half Non-Detects	Standard Deviation	Upper 95% Confidence Level	Location of Maximum Detect
Carbon Disulfide	5 U	12 U	2 J	3 J	2/10	2.5	2.5	4.1	1.5	5.0	SWMU318-SS03-00
Carbon Tetrachloride	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
Chlorobenzene	1 U	670 U	0	0	0/26	NA	NA	15.3	65.2	37.2	
Chloroethane	5 UJ	12 U	44 J	44 J	1/22	44	44	5.9	8.6	9.0	SWMU303-IS04-00
Chloroform	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
Chloromethane	5 U	12 U	0	0	0/22	NA	NA	4.0	1.4	4.5	
Cyclohexane	5 U	12 U	0	0	0/10	NA	NA	4.25	1.4	5.0	
Dibromochloromethane	2 U	12 U	0	0	0/22	NA	NA	3.0	1.8	3.7	
Dibromomethane	2 U	12 U	0	0	0/16	NA	NA	2.2	1.7	3.0	
Dichlorodifluoromethane	5 UJ	12 U	0	0	0/22	NA	NA	3.6	1.3	4.1	
Ethylbenzene	1 U	670 U	0	0	0/26	NA	NA	15.3	65.2	37.2	
Hexachlorobutadiene	5 U	12 U	0	0	0/16	NA	NA	3.3	1.1	3.8	
Isopropylbenzene (Cumene)	2 U	12 U	0	0	0/22	NA	NA	3.0	1.8	3.7	
Methyl Acetate	5 U	12 U	0	0	0/10	NA	NA	4.25	1.4	5.0	
Methyl Cyclohexane	5 U	12 U	0	0	0/10	NA	NA	4.25	1.4	5.0	
Methyl Tert-Butyl Ether (MTBE)	5 U	12 U	0	0	0/10	NA	NA	4.25	1.4	5.0	
Methylene Chloride	5 U	23 UJ	1 J	18	7/22	7.29	4	5.6	4.3	7.2	SWMU318-TW02-00
Naphthalene	5 U	12 U	1.1 J	1.5 J	2/16	1.3	1.3	3.1	1.3	3.7	SWMU318-SB26-00
n-Butylbenzene	2 U	12 U	0.66 J	0.66 J	1/16	0.66	0.66	2.2	1.7	2.9	SWMU318-SB26-00
n-Propylbenzene	2 U	12 U	0	0	0/16	NA	NA	2.2	1.7	3.0	
Styrene (Ethenylbenzene)	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
Tetrachloroethene (PCE)	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
Toluene	1 U	670 U	4 J	4 J	1/26	4	4	15.3	65.2	37.1	SWMU318-SB05-00
Trichloroethene (TCE)	1 U	12 U	0	0	0/22	NA	NA	2.8	2.0	3.6	
Trichlorofluoromethane	5 U	11 UJ	2 J	2 J	1/18	2	2	3.4	1.1	3.9	SWMU318-SB09-00
Vinyl Chloride	2 U	12 U	0	0	0/22	NA	NA	3.4	2.0	4.1	
Xylene, m-	2 U	12 U	2 J	4.7 J	2/16	3.35	3.35	2.7	1.9	3.6	SWMU318-SB10-00
Xylene, o-	1 U	12 U	0	0	0/16	NA	NA	2.6	2.3	3.6	
Xylenes, total	1 U	670 U	0	0	0/14	NA	NA	30.0	87.9	71.6	
Semivolatile Organic Compounds (ug/kg)											
1,1'-Biphenyl	360 U	650 U	0	0	0/17	NA	NA	202	33	217	
2,2'-Oxybis[1-chloropropane]	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
2,4,5-Trichlorophenol	360 U	18000 U	0	0	0/21	NA	NA	721	1902	1437	
2,4,6-Trichlorophenol	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
2,4-Dichlorophenol	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
2,4-Dimethylphenol	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
2,4-Dinitrophenol	890 U	86000 U	0	0	0/21	NA	NA	2870	9200	6332	
2,4-Dinitrotoluene	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
2,6-Dinitrotoluene	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
2-Chloronaphthalene	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
2-Chlorophenol	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
2-Methylnaphthalene	360 U	650 UJ	120 J	2600 J	2/21	1360	1360	313	525	511	SWMU318-SS01-00
2-Methylphenol (o-Cresol)	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
2-Nitroaniline	730 U	86000 U	0	0	0/21	NA	NA	2559	9269	6047	

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL, STATISTICAL SUMMARY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

	Minimum Non-Detect	Maximum Non-Detect	Minimum Detected	Maximum Detected	Frequency of Detection	Arithmatic Mean Positive Detects	Median Positive Detects	Arithmatic Mean Half Non-Detects	Standard Deviation	Upper 95% Confidence Level	Location of Maximum Detect
2-Nitrophenol	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
3,3'-Dichlorobenzidine	360 U	86000 U	0	0	0/21	NA	NA	2461	9293	5959	
3-Nitroaniline	730 U	86000 U	0	0	0/21	NA	NA	2559	9269	6047	
4,6-Dinitro-2-methylphenol	730 U	86000 U	0	0	0/21	NA	NA	2559	9269	6047	
4-Bromophenyl-phenylether	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
4-Chloro-3-methylphenol	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
4-Chloroaniline	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
4-Chlorophenyl-phenylether	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
4-Methylphenol (p-Cresol)	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
4-Nitroaniline	730 U	86000 U	0	0	0/21	NA	NA	2559	9269	6047	
4-Nitrophenol	730 U	86000 U	0	0	0/21	NA	NA	2559	9269	6047	
Acenaphthene	360 U	18000 U	34 J	34 J	1/21	34	34	614	1922	1337	SWMU318-SS03-00
Acenaphthylene	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Acetophenone	360 U	650 U	120 J	120 J	1/17	120	120	196	38	212	SWMU318-SS03-00
Anthracene	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Atrazine	360 U	650 U	0	0	0/17	NA	NA	202	33	217	
Benzaldehyde	360 U	650 U	33 J	33 J	1/17	33	33	193	53	215	SWMU318-TW02-00
Benzo(a)anthracene	360 U	470 U	52 J	4100 J	4/21	1107	138	369	856	691	SWMU318-SS01-00
Benzo(a)pyrene	360 U	470 U	82 J	5000 J	4/21	1345.5	150	415	1051	810	SWMU318-SS01-00
Benzo(b)fluoranthene	360 U	470 U	29 J	5900 J	6/21	1078.83	125	448	1250	919	SWMU318-SS01-00
Benzo(g,h,i)perylene	360 U	470 U	86 J	5000 J	4/21	1326.25	109.5	411	1052	807	SWMU318-SS01-00
Benzo(k)fluoranthene	360 U	470 U	130 J	6900 J	3/21	2443.33	300	517	1463	1068	SWMU318-SS01-00
Bis(2-chloroethoxy)methane	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Bis(2-chloroethyl)ether	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Bis(2-ethylhexyl) Phthalate (BEHP)	360 U	400 U	46 J	22000 J	14/21	2117.29	340	1477	4732	3257	SWMU318-SS01-00
Butyl Benzyl Phthalate	360 U	470 U	65 J	2000 J	3/21	717	86	271	398	420	SWMU318-SS01-00
Caprolactam	360 U	650 U	100 J	100 J	1/17	100	100	195	41	212	SWMU318-SS03-00
Carbazole	360 U	18000 U	44 J	44 J	1/21	44	44	614	1922	1338	SWMU318-SS03-00
Chrysene	360 U	470 U	69 J	6700 J	4/21	1789.5	194.5	499	1421	1034	SWMU318-SS01-00
Dibenz(a,h)anthracene	360 U	650 U	45 J	2300 J	3/21	804.33	68	289	464	463	SWMU318-SS01-00
Dibenzofuran	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Diethyl Phthalate (DEP)	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Dimethyl Phthalate	360 U	18000 U	48 J	48 J	1/21	48	48	614	1922	1338	SWMU318-SS03-00
Di-n-butyl Phthalate (DBP)	360 U	650 U	31 J	2400 J	2/21	1215.5	1215.5	301	483	483	SWMU318-SS01-00
Di-n-octyl Phthalate	360 U	18000 U	30 J	170 J	4/21	73	46	593	1927	1318	SWMU318-SS02-00
Fluoranthene	360 U	470 U	21 J	7700 J	6/21	1395.33	94.5	539	1643	1157	SWMU318-SS01-00
Fluorene	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Hexachlorobenzene	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Hexachlorobutadiene	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Hexachlorocyclopentadiene	360 U	86000 U	0	0	0/21	NA	NA	2361	9316	5868	
Hexachloroethane	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Indeno(1,2,3-cd)pyrene	360 U	470 U	36 J	4700 J	6/21	879	125.5	391	989	763	SWMU318-SS01-00
Isophorone	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Naphthalene	360 U	650 U	120 J	17000 J	3/21	5850	430	1010	3664	2389	SWMU318-SS01-00

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - SURFACE SOIL, STATISTICAL SUMMARY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

	Minimum Non-Detect	Maximum Non-Detect	Minimum Detected	Maximum Detected	Frequency of Detection	Arithmatic Mean Positive Detects	Median Positive Detects	Arithmatic Mean Half Non-Detects	Standard Deviation	Upper 95% Confidence Level	Location of Maximum Detect
Nitrobenzene	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
n-Nitrosodi-n-propylamine	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
n-Nitrosodiphenylamine	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Pentachlorophenol	730 U	86000 U	0	0	0/21	NA	NA	2559	9269	6047	
Phenanthrene	360 U	18000 U	110 J	110 J	1/21	110	110	617	1921	1340	SWMU318-SS03-00
Phenol	360 U	18000 U	0	0	0/21	NA	NA	623	1920	1346	
Pyrene	360 U	470 U	71 J	7800 J	4/21	2082.75	230	555	1661	1180	SWMU318-SS01-00
Metals (mg/kg)											
Arsenic	0.26 U	3.4 U	0.48 J	14.3	13/20	3.13	2	2.29	3.19	3.52	SWMU318-IS02-00
Barium	25 U	25 U	9.4 J	396	19/20	45.36	23	43.7	84.0	76.20	SWMU318-SS01-00
Cadmium	0.035 U	0.87 U	0.081 J	57.2	13/20	5.55	0.57	3.670	12.648	8.560	SWMU318-SS01-00
Chromium	0	0	3.7	91.1	20/20	18.46	13.45	18.46	19.93	26.17	SWMU318-SS01-00
Lead	0	0	3.2	110	20/20	28.07	21.25	28.07	26.76	38.42	SWMU318-SS01-00
Mercury	0.02 U	0.07 U	0.018 J	0.14	13/20	0.05	0.05	0.04	0.03	0.05	SWMU318-IS02-00
Selenium	0.4 U	1 U	0.56 J	1.3	10/20	0.8	0.79	0.56	0.30	0.67	SWMU318-SS03-00
Silver	0.098 U	1.4 U	7.2	7.2	1/20	7.2	7.2	0.51	1.59	1.12	SWMU318-SS01-00

Notes: NA = Not applicable

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - GROUNDWATER NEAR DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW01	SWMU318-GW03	SWMU318-GW04	SWMU318-GW07	SWMU318-GW08	SWMU318-GW14	SWMV318-GW28
SAMPLE DATE	3/19/2004	3/18/2004	3/18/2004	3/18/2004	3/17/2004	3/22/2004	6/24/04
SAMPLE DEPTH (ft range)	12-16	12-16	12-16	10-14	12-16	12-16	10-14
Volatile Organic Compounds (ug/L)							
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 U	10 U	2 U
1,1,1-Trichloroethane (TCA)	10 U	2 U	2 U	10 U	2 U	10 U	2 U
1,1,2,2-Tetrachloroethane	10 U	2 U	2 U	10 U	2 U	10 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10 U	NA	NA	10 U	NA	NA	NA
1,1,2-Trichloroethane	10 U	2 U	2 U	10 U	2 U	10 U	2 U
1,1-Dichloroethane	10 U	2 U	0.5 J	10 U	2 U	10 U	2 U
1,1-Dichloroethene	10 U	2 U	2 U	10 U	2 U	10 U	2 U
1,1-Dichloropropene	2 U	2 U	2 U	2 U	2 U	10 U	2 U
1,2,3-Trichlorobenzene	2 U	2 U	2 U	2 U	2 U	10 U	2 U
1,2,4-Trichlorobenzene	10 U	2 U	2 U	10 U	2 U	10 U	2 U
1,2,4-Trimethylbenzene	2 J	2 U	1 J	2 U	2 U	17	2 U
1,2-Dibromo-3-chloropropane (DBCP)	10 U	2 U	2 U	10 U	2 U	10 U	2 U
1,2-Dibromoethane (EDB)	2 U	2 U	2 U	2 U	2 U	10 U	2 U
1,2-Dichlorobenzene (o-)	10 U	0.4 J	0.4 J	10 U	2 U	10 U	2 U
1,2-Dichloroethane	10 U	2 U	2 U	10 U	2 U	10 U	2 U
1,2-Dichloroethene (cis)	2 J	0.6 J	0.4 J	10 U	2 U	86	3.8
1,2-Dichloroethene (total)	2 J	NA	NA	10 U	NA	NA	NA
1,2-Dichloroethene (trans)	10 U	2 U	2 U	10 U	2 U	10 U	2 U
1,2-Dichloropropane	10 U	2 U	2 U	10 U	2 U	10 U	2 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	2 U	10 U	2 U
1,3-Dichlorobenzene (m-)	10 U	0.7 J	0.7 J	10 U	2 U	10 U	2 U
1,3-Dichloropropane	2 U	2 U	2 U	2 U	2 U	10 U	2 U
1,3-Dichloropropene (cis)	10 U	2 U	2 U	10 U	2 U	10 U	2 U
1,3-Dichloropropene (trans)	10 U	2 U	2 U	10 U	2 U	10 U	2 U
1,4-Dichlorobenzene (p-)	10 U	0.9 J	0.9 J	10 U	2 U	10 U	2 U
2,2-Dichloropropane	2 U	2 U	2 U	2 U	2 U	10 U	2 U
2-Butanone (MEK)	10 UJ	NA	NA	10 UJ	NA	NA	NA
2-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	10 U	2 U
2-Hexanone (MBK)	10 U	NA	NA	10 U	NA	NA	NA
4-Chlorotoluene	2 U	2 U	2 U	2 U	2 U	10 U	2 U
4-Isopropyltoluene	2 U	2 U	2 U	0.7 J	2 U	6.4 J	2 U
4-Methyl-2-pentanone (MIBK)	10 U	NA	NA	10 U	NA	NA	NA
Acetone	10 UJ	NA	NA	10 UJ	NA	NA	NA
Benzene	10 U	2 U	0.9 J	10 U	2 U	14	2 U
Bromobenzene	2 U	2 U	2 U	2 U	2 U	10 U	2 U

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - GROUNDWATER NEAR DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW01	SWMU318-GW03	SWMU318-GW04	SWMU318-GW07	SWMU318-GW08	SWMU318-GW14	SWMV318-GW28
SAMPLE DATE	3/19/2004	3/18/2004	3/18/2004	3/18/2004	3/17/2004	3/22/2004	6/24/04
SAMPLE DEPTH (ft range)	12-16	12-16	12-16	10-14	12-16	12-16	10-14
Bromochloromethane	2 U	2 U	2 U	2 U	2 U	10 U	2 U
Bromodichloromethane	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Bromoform	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Bromomethane	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Butylbenzene, sec-	5	2 U	2 U	2 U	2 J	10 U	2 U
Butylbenzene, tert-	2 U	2 U	2 U	2 U	2 U	10 U	2 U
Carbon Disulfide	10 U	NA	NA	10 U	NA	NA	NA
Carbon Tetrachloride	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Chlorobenzene	10 U	2 U	2	10 U	2 U	10 U	2 U
Chloroethane	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Chloroform	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Chloromethane	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Cyclohexane	10 U	NA	NA	10 U	NA	NA	NA
Dibromochloromethane	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Dibromomethane	2 U	2 U	2 U	2 U	2 U	10 U	
Dichlorodifluoromethane (Freon-12)	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Ethylbenzene	1 J	0.6 J	0.6 J	10 U	0.6 J	8.1 J	2 U
Hexachlorobutadiene	2 U	2 U	2 U	2 U	2 U	10 U	2 U
Isopropylbenzene (Cumene)	2 J	2 U	1 J	10 U	2 U	10 U	2 U
Methyl Acetate	10 U	NA	NA	10 U	NA	NA	NA
Methyl Cyclohexane	1 J	NA	NA	10 U	NA	NA	NA
Methyl Tert-Butyl Ether (MTBE)	10 U	NA	NA	10 U	NA	NA	NA
Methylene Chloride	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Naphthalene	5	2 U	18	2 U	2 U	328	4.4
n-Butylbenzene	32	0.5 J	2 U	2 U	2 U	49	2 U
n-Propylbenzene	4	2 U	2 U	2 U	2 U	10 U	2 U
Styrene (Ethenylbenzene)	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Tetrachloroethene (PCE)	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Toluene	10 U	0.7 J	0.9 J	10 U	0.7 J	4 J	2 U
Trichloroethene (TCE)	10 U	1 J	0.7 J	10 U	2 U	60	2 U
Trichlorofluoromethane	10 U	NA	NA	10 U	NA	NA	NA
Vinyl Chloride	10 U	2 U	2 U	10 U	2 U	10 U	2 U
Xylene, m/p-	10 U	4 U	2 J	10 U	4 U	4 J	4 U
Xylene, o-	10 U	2 U	1 J	10 U	2 U	10 U	2 U
Xylenes, total	10 U			10 U			

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - GROUNDWATER NEAR DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW01	SWMU318-GW03	SWMU318-GW04	SWMU318-GW07	SWMU318-GW08	SWMU318-GW14	SWMV318-GW28
SAMPLE DATE	3/19/2004	3/18/2004	3/18/2004	3/18/2004	3/17/2004	3/22/2004	6/24/04
SAMPLE DEPTH (ft range)	12-16	12-16	12-16	10-14	12-16	12-16	10-14
Semivolatile Organic Compounds (ug/L)							
1,1'-Biphenyl	10 U	10 U	10 U	NA	NA	NA	NA
2,2'-Oxybis[1-chloropropane]	10 U	10 U	10 U	NA	NA	NA	NA
2,4,5-Trichlorophenol	25 U	25 U	25 U	NA	NA	NA	NA
2,4,6-Trichlorophenol	10 U	10 U	10 U	NA	NA	NA	NA
2,4-Dichlorophenol	10 U	10 U	10 U	NA	NA	NA	NA
2,4-Dimethylphenol	10 U	10 U	10 U	NA	NA	NA	NA
2,4-Dinitrophenol	25 U	25 U	25 U	NA	NA	NA	NA
2,4-Dinitrotoluene	10 U	10 U	10 U	NA	NA	NA	NA
2,6-Dinitrotoluene	10 U	10 U	10 U	NA	NA	NA	NA
2-Chloronaphthalene	10 U	10 U	10 U	NA	NA	NA	NA
2-Chlorophenol	10 U	10 U	10 U	NA	NA	NA	NA
2-Methylnaphthalene	10 U	10 U	8 J	NA	NA	NA	NA
2-Methylphenol (o-Cresol)	10 U	10 U	10 U	NA	NA	NA	NA
2-Nitroaniline	25 U	25 U	25 U	NA	NA	NA	NA
2-Nitrophenol	10 U	10 U	10 U	NA	NA	NA	NA
3,3'-Dichlorobenzidine	10 UJ	10 U	10 U	NA	NA	NA	NA
3-Nitroaniline	25 U	25 U	25 U	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	NA	NA	NA	NA
4-Bromophenyl-phenylether	10 U	10 U	10 U	NA	NA	NA	NA
4-Chloro-3-methylphenol	10 U	10 U	10 U	NA	NA	NA	NA
4-Chloroaniline	10 U	10 U	10 U	NA	NA	NA	NA
4-Chlorophenyl-phenylether	10 U	10 U	10 U	NA	NA	NA	NA
4-Methylphenol (p-Cresol)	10 U	10 U	10 U	NA	NA	NA	NA
4-Nitroaniline	25 UJ	25 UJ	25 UJ	NA	NA	NA	NA
4-Nitrophenol	25 U	25 U	25 U	NA	NA	NA	NA
Acenaphthene	10 U	10 U	10 U	NA	NA	NA	NA
Acenaphthylene	10 U	10 U	10 U	NA	NA	NA	NA
Acetophenone	10 U	10 U	10 U	NA	NA	NA	NA
Anthracene	10 U	10 U	10 U	NA	NA	NA	NA
Atrazine	10 U	10 U	10 U	NA	NA	NA	NA
Benzaldehyde	10 U	10 U	10 U	NA	NA	NA	NA
Benzo(a)anthracene	10 U	10 U	10 U	NA	NA	NA	NA
Benzo(a)pyrene	10 U	10 U	10 U	NA	NA	NA	NA
Benzo(b)fluoranthene	10 U	10 U	10 U	NA	NA	NA	NA
Benzo(g,h,i)perylene	10 U	10 U	10 U	NA	NA	NA	NA

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - GROUNDWATER NEAR DRAINAGE DITCH
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	SWMU318-GW01	SWMU318-GW03	SWMU318-GW04	SWMU318-GW07	SWMU318-GW08	SWMU318-GW14	SWMV318-GW28
SAMPLE DATE	3/19/2004	3/18/2004	3/18/2004	3/18/2004	3/17/2004	3/22/2004	6/24/04
SAMPLE DEPTH (ft range)	12-16	12-16	12-16	10-14	12-16	12-16	10-14
Benzo(k)fluoranthene	10 U	10 U	10 U	NA	NA	NA	NA
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	NA	NA	NA	NA
Bis(2-chloroethyl)ether	10 U	10 U	10 U	NA	NA	NA	NA
Bis(2-ethylhexyl) Phthalate (BEHP)	10 U	10 U	10 U	NA	NA	NA	NA
Butyl Benzyl Phthalate	10 U	10 U	10 U	NA	NA	NA	NA
Caprolactam	10 U	10 U	10 U	NA	NA	NA	NA
Carbazole	10 U	10 U	10 U	NA	NA	NA	NA
Chrysene	10 U	10 U	10 U	NA	NA	NA	NA
Dibenz(a,h)anthracene	10 U	10 U	10 U	NA	NA	NA	NA
Dibenzofuran	10 U	10 U	10 U	NA	NA	NA	NA
Diethyl Phthalate (DEP)	10 U	10 U	10 U	NA	NA	NA	NA
Dimethyl Phthalate	10 U	10 U	10 U	NA	NA	NA	NA
Di-n-butyl Phthalate (DBP)	10 U	10 U	10 U	NA	NA	NA	NA
Di-n-octyl Phthalate	10 U	10 U	10 U	NA	NA	NA	NA
Fluoranthene	10 U	10 U	10 U	NA	NA	NA	NA
Fluorene	10 U	10 U	10 U	NA	NA	NA	NA
Hexachlorobenzene	10 U	10 U	10 U	NA	NA	NA	NA
Hexachlorobutadiene	10 U	10 U	10 U	NA	NA	NA	NA
Hexachlorocyclopentadiene	10 U	10 UJ	10 UJ	NA	NA	NA	NA
Hexachloroethane	10 U	10 U	10 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	NA	NA	NA	NA
Isophorone	10 U	10 U	10 U	NA	NA	NA	NA
Naphthalene	9 J	10 U	12	NA	NA	NA	NA
Nitrobenzene	10 U	10 U	10 U	NA	NA	NA	NA
n-Nitrosodi-n-propylamine	10 U	10 U	10 U	NA	NA	NA	NA
n-Nitrosodiphenylamine	10 U	10 U	10 U	NA	NA	NA	NA
Pentachlorophenol	25 U	25 U	25 U	NA	NA	NA	NA
Phenanthrene	10 U	10 U	10 U	NA	NA	NA	NA
Phenol	10 U	10 U	10 U	NA	NA	NA	NA
Pyrene	10 U	10 U	10 U	NA	NA	NA	NA

Notes: NA = Not Analyzed

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - GROUNDWATER NEAR DRAINAGE DITCH, STATISTICAL SUMMARY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

	Minimum Non-Detect	Maximum Non-Detect	Minimum Detected	Maximum Detected	Frequency of Detection	Arithmatic Mean Positive Detects	Median Positive Detects	Arithmatic Mean Half Non-Detects	Standard Deviation	Upper 95% Confidence Level	Location of Maximum Detect
Volatile Organic Compounds (ug/L)											
1,1,1,2-Tetrachloroethane	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
1,1,1-Trichloroethane (TCA)	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
1,1,2,2-Tetrachloroethane	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
1,1,2-Trichloro-1,2,2-trifluoroethane	10 U	10 U	0	0	0/2	NA	NA	5	0	5	
1,1,2-Trichloroethane	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
1,1-Dichloroethane	2 U	10 U	0.5 J	0.5 J	1/7	0.5	0.5	2.6429	2.212	4.2675	SWMU318-GW04
1,1-Dichloroethene	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
1,1-Dichloropropene	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
1,2,3-Trichlorobenzene	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
1,2,4-Trichlorobenzene	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
1,2,4-Trimethylbenzene	2 U	2 U	1 J	17	3/7	6.67	2	3.4286	5.996	7.8324	SWMU318-GW14
1,2-Dibromo-3-chloropropane (DBCP)	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
1,2-Dibromoethane (EDB)	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
1,2-Dichlorobenzene (o-)	2 U	10 U	0.4 J	0.4 J	2/7	0.4	0.4	2.5429	2.3115	4.2406	SWMU318-GW03,SWMU318-GW04
1,2-Dichloroethane	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
1,2-Dichloroethene (cis)	2 U	10 U	0.4 J	86	5/7	18.56	2	14.1143	31.745	37.4295	SWMU318-GW14
1,2-Dichloroethene (total)	10 U	10 U	2 J	2 J	1/2	2	2	3.5	2.1213	12.9705	SWMU318-GW01
1,2-Dichloroethene (trans)	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
1,2-Dichloropropane	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
1,3,5-Trimethylbenzene	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
1,3-Dichlorobenzene (m-)	2 U	10 U	0.7 J	0.7 J	2/7	0.7	0.7	2.6286	2.2216	4.2603	SWMU318-GW03,SWMU318-GW04
1,3-Dichloropropane	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
1,3-Dichloropropene (cis)	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
1,3-Dichloropropene (trans)	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
1,4-Dichlorobenzene (p-)	2 U	10 U	0.9 J	0.9 J	2/7	0.9	0.9	2.6857	2.1652	4.2759	SWMU318-GW03,SWMU318-GW04
2,2-Dichloropropane	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
2-Butanone (MEK)	10 UJ	10 UJ	0	0	0/2	NA	NA	5	0	5	
2-Chlorotoluene	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
2-Hexanone (MBK)	10 U	10 U	0	0	0/2	NA	NA	5	0	5	
4-Chlorotoluene	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
4-Isopropyltoluene	2 U	2 U	0.7 J	6.4 J	2/7	3.55	3.55	1.7286	2.0629	3.2437	SWMU318-GW14
4-Methyl-2-pentanone (MIBK)	10 U	10 U	0	0	0/2	NA	NA	5	0	5	
Acetone	10 UJ	10 UJ	0	0	0/2	NA	NA	5	0	5	
Benzene	2 U	10 U	0.9 J	14	2/7	7.45	7.45	3.9857	4.8064	7.5158	SWMU318-GW14
Bromobenzene	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
Bromochloromethane	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
Bromodichloromethane	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Bromoform	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Bromomethane	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Butylbenzene, sec-	2 U	10 U	2 J	5	2/7	3.5	3.5	2.2857	1.8898	3.6737	SWMU318-GW01
Butylbenzene, tert-	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
Carbon Disulfide	10 U	10 U	0	0	0/2	NA	NA	5	0	5	

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - GROUNDWATER NEAR DRAINAGE DITCH, STATISTICAL SUMMARY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

	Minimum Non-Detect	Maximum Non-Detect	Minimum Detected	Maximum Detected	Frequency of Detection	Arithmatic Mean Positive Detects	Median Positive Detects	Arithmatic Mean Half Non-Detects	Standard Deviation	Upper 95% Confidence Level	Location of Maximum Detect
Carbon Tetrachloride	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Chlorobenzene	2 U	10 U	2	2	1/7	2	2	2.8571	2.0354	4.352	SWMU318-GW04
Chloroethane	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Chloroform	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Chloromethane	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Cyclohexane	10 U	10 U	0	0	0/2	NA	NA	5	0	5	
Dibromochloromethane	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Dibromomethane	2 U	10 U	0	0	0/6	NA	NA	1.6667	1.633	3.0101	
Dichlorodifluoromethane (Freon-12)	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Ethylbenzene	2 U	10 U	0.6 J	8.1 J	5/7	2.18	0.6	2.4143	2.969	4.5949	SWMU318-GW14
Hexachlorobutadiene	2 U	10 U	0	0	0/7	NA	NA	1.5714	1.5119	2.6818	
Isopropylbenzene (Cumene)	2 U	10 U	1 J	2 J	2/7	1.5	1.5	2.2857	1.8898	3.6737	SWMU318-GW01
Methyl Acetate	10 U	10 U	0	0	0/2	NA	NA	5	0	5	
Methyl Cyclohexane	10 U	10 U	1 J	1 J	1/2	1	1	3	2.8284	15.6274	SWMU318-GW01
Methyl Tert-Butyl Ether (MTBE)	10 U	10 U	0	0	0/2	NA	NA	5	0	5	
Methylene Chloride	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Naphthalene	2 U	2 U	4.4	328	4/7	88.85	11.5	51.2	122.2056	140.9543	SWMU318-GW14
n-Butylbenzene	2 U	2 U	0.5 J	49	3/7	27.17	32	12.2143	19.9371	26.8572	SWMU318-GW14
n-Propylbenzene	2 U	10 U	4	4	1/7	4	4	2	1.7321	3.2721	SWMU318-GW01
Styrene (Ethenylbenzene)	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Tetrachloroethene (PCE)	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Toluene	2 U	10 U	0.7 J	4 J	4/7	1.58	0.8	2.4714	2.083	4.0013	SWMU318-GW14
Trichloroethene (TCE)	2 U	10 U	0.7 J	60	3/7	20.57	1	10.5286	21.8995	26.6128	SWMU318-GW14
Trichlorofluoromethane	10 U	10 U	0	0	0/2	NA	NA	5	0	5	
Vinyl Chloride	2 U	10 U	0	0	0/7	NA	NA	2.7143	2.1381	4.2846	
Xylene, m/p-	4 U	10 U	2 J	4 J	2/7	3	3	3.1429	1.4639	4.2181	SWMU318-GW14
Xylene, o-	2 U	10 U	1 J	1 J	1/7	1	1	2.7143	2.1381	4.2846	SWMU318-GW04
Xylenes, total	10 U	10 U	0	0	0/2	NA	NA	5	0	5	
Semivolatile Organic Compounds (ug/L)	0	0	0	0	0/0	NA	NA	NA	NA	NA	
1,1'-Biphenyl	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
2,2'-Oxybis[1-chloropropane]	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
2,4,5-Trichlorophenol	25 U	25 U	0	0	0/3	NA	NA	12.5	0	12.5	
2,4,6-Trichlorophenol	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
2,4-Dichlorophenol	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
2,4-Dimethylphenol	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
2,4-Dinitrophenol	25 U	25 U	0	0	0/3	NA	NA	12.5	0	12.5	
2,4-Dinitrotoluene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
2,6-Dinitrotoluene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
2-Chloronaphthalene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
2-Chlorophenol	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
2-Methylnaphthalene	10 U	10 U	8 J	8 J	1/3	8	8	6	1.7321	8.9201	SWMU318-GW04
2-Methylphenol (o-Cresol)	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
2-Nitroaniline	25 U	25 U	0	0	0/3	NA	NA	12.5	0	12.5	
2-Nitrophenol	10 U	10 U	0	0	0/3	NA	NA	5	0	5	

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - GROUNDWATER NEAR DRAINAGE DITCH, STATISTICAL SUMMARY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

	Minimum Non-Detect	Maximum Non-Detect	Minimum Detected	Maximum Detected	Frequency of Detection	Arithmatic Mean Positive Detects	Median Positive Detects	Arithmatic Mean Half Non-Detects	Standard Deviation	Upper 95% Confidence Level	Location of Maximum Detect
3,3'-Dichlorobenzidine	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
3-Nitroaniline	25 U	25 U	0	0	0/3	NA	NA	12.5	0	12.5	
4,6-Dinitro-2-methylphenol	25 U	25 U	0	0	0/3	NA	NA	12.5	0	12.5	
4-Bromophenyl-phenylether	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
4-Chloro-3-methylphenol	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
4-Chloroaniline	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
4-Chlorophenyl-phenylether	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
4-Methylphenol (p-Cresol)	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
4-Nitroaniline	25 UJ	25 UJ	0	0	0/3	NA	NA	12.5	0	12.5	
4-Nitrophenol	25 U	25 U	0	0	0/3	NA	NA	12.5	0	12.5	
Acenaphthene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Acenaphthylene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Acetophenone	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Anthracene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Atrazine	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Benzaldehyde	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Benzo(a)anthracene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Benzo(a)pyrene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Benzo(b)fluoranthene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Benzo(g,h,i)perylene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Benzo(k)fluoranthene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Bis(2-chloroethoxy)methane	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Bis(2-chloroethyl)ether	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Bis(2-ethylhexyl) Phthalate (BEHP)	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Butyl Benzyl Phthalate	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Caprolactam	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Carbazole	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Chrysene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Dibenz(a,h)anthracene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Dibenzofuran	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Diethyl Phthalate (DEP)	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Dimethyl Phthalate	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Di-n-butyl Phthalate (DBP)	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Di-n-octyl Phthalate	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Fluoranthene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Fluorene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Hexachlorobenzene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Hexachlorobutadiene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Hexachlorocyclopentadiene	10 UJ	10 UJ	0	0	0/3	NA	NA	5	0	5	
Hexachloroethane	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Indeno(1,2,3-cd)pyrene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Isophorone	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Naphthalene	10 U	10 U	9 J	12	2/3	10.5	10.5	8.6667	3.5119	14.5873	SWMU318-GW04
Nitrobenzene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	

APPENDIX M
DATA EVALUATED IN THE ECOLOGICAL RISK ASSESSMENT - GROUNDWATER NEAR DRAINAGE DITCH, STATISTICAL SUMMARY
SWMU 303/318
RCRA FACILITY INVESTIGATION (CTO-0041)
MCB CAMP LEJEUNE, NORTH CAROLINA

	Minimum Non-Detect	Maximum Non-Detect	Minimum Detected	Maximum Detected	Frequency of Detection	Arithmatic Mean Positive Detects	Median Positive Detects	Arithmatic Mean Half Non-Detects	Standard Deviation	Upper 95% Confidence Level	Location of Maximum Detect
n-Nitrosodi-n-propylamine	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
n-Nitrosodiphenylamine	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Pentachlorophenol	25 U	25 U	0	0	0/3	NA	NA	12.5	0	12.5	
Phenanthrene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Phenol	10 U	10 U	0	0	0/3	NA	NA	5	0	5	
Pyrene	10 U	10 U	0	0	0/3	NA	NA	5	0	5	

Notes: NA = Not Applicable

Responses to Comments

North Carolina
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Dexter R. Matthews, Director

January 14, 2005

Commander Atlantic Division
Naval Facilities Engineering Command
6506 Hampton Blvd.
Norfolk VA 23508-1278

Attention: Rodger W. Jackson, P.E.
Naval Facilities Engineering Command Atlantic
6506 Hampton Blvd.
NC/Caribbean IPT
Building C, 3rd Floor
Norfolk, Va. 23508-1278

RE: Comments on the Draft Site Specific Work Plans for SWMU 303/318 and 336
MCB Camp Lejeune, NC
Soil and Groundwater
Camp Lejeune, NC6170022580
Jacksonville, Onslow County, North Carolina

Dear Mr. Jackson:

The NC Superfund Section has received and reviewed the Draft Site Specific Work Plans for Solid Waste Management Units (SWMUs) 3303/318 and 336 for the Camp Lejeune, MCB located in Jacksonville, NC. The following comments are offered for the Work Teams consideration. If you have any questions or comments please contact me at (919) 733-2801 ext. 341.

General Comment

The Site Specific Work Plans appear to be in good order. Please notify the NC Superfund Section Representative as to the days that the work will be done on base. The State would also like to participate in the project meetings to be held on base as stated in Section 4.8 of the Work Plans.

Specific Comments

1. Bullet 6 at the bottom of page 6 has a typo. It should include ethene instead of ethane twice.

2. Please update the project Schedule in the Final submittal of the Work Plan.
3. Dave Lilley with the NC Superfund Section is in the process of reviewing the Site Specific Health and Safety Plan for SWMU 303/318 and 336 in this Site Specific Work Plan. His comments will be forwarded when they are completed. We only make recommendations to the Health and Safety Plan so this should in no way hold up the proposed work. Mr. Lilley has already commented on the Master Project Plans (MPPs) for Camp Lejeune. Make sure that all his comments on the MPP are included in the health and safety aspects of this work.

If you have any questions or comments, please contact me, at (919) 733-2801, extension 341 or email randy.mcelveen@ncmail.net

Sincerely,

Randy McElveen
Environmental Engineer
NC Superfund Section

Cc: Dave Lown, PE, PG, NC Superfund Section
James Culp, PE
Daniel Hood
Bob Lowder, EMD/IR

Response to 1/14/05 NCDENR Comments on

Draft Site-Specific Work Plans for SWMUs 303/318 and 336 RCRA Program, dated November 2004

General Comment

The Site Specific Work Plans appear to be in good order. Please notify the NC Superfund Section Representative as to the days that the work will be done on base. The State would also like to participate in the project meetings to be held on base as stated in Section 4.8 of the Work Plans.

Response: Comment acknowledged. Subcontractor mobilization is scheduled for January 31, 2005, and field sampling is scheduled for February 1 through 23, 2005. The State is requested to attend the two project meetings listed in the Work Plan.

Specific Comments

1. Bullet 6 at the bottom of page 6 has a typo. It should include ethene instead of ethane twice.

Response: The words "methane, ethane, and ethane" will be corrected to "methane, ethane, and ethene" on pages 4-8 and 4-13.

2. Please update the project Schedule in the Final submittal of the Work Plan.

Response: The project schedule will be updated.

3. Dave Lilley with the NC Superfund Section is in the process of reviewing the Site Specific Health and Safety Plan for SWMU 303/318 and 336 in this Site Specific Work Plan. His comments will be forwarded when they are completed. We only make recommendations to the Health and Safety Plan so this should in no way hold up the proposed work. Mr. Lilley has already commented on the Master Project Plans (MPPs) for Camp Lejeune. Make sure that all his comments on the MPP are included in the health and safety aspects of this work.

Response: Previous comments to the Master Project Plans have been included in this Site-Specific Health and Safety Plan.

North Carolina
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Dexter R. Matthews, Director

November 2, 2005

Commander Atlantic Division
Naval Facilities Engineering Command
6506 Hampton Blvd.
Norfolk VA 23508-1278

Attention: Rodger W. Jackson, P.E.
Naval Facilities Engineering Command Atlantic
6506 Hampton Blvd.
NC/Caribbean IPT
Building C, 3rd Floor
Norfolk, Va. 23508-1278

RE: Comments on the Draft SWMUs 303/318 RCRA Facility Investigation Report
MCB Camp Lejeune, NC
Soil and Groundwater
Camp Lejeune, NC6170022580
Jacksonville, Onslow County, North Carolina

Dear Mr. Jackson:

The NC Superfund Section has received and reviewed the Draft Solid Waste Management Units (SWMUs) 303/318 RCRA Facility Investigation (RFI) Report for the Camp Lejeune, MCB located in Jacksonville, NC. The following comments are offered for the Work Teams consideration. If you have any questions or comments please contact me at (919) 508 8467 or email at randy.mcelveen@ncmail.net.

General Comment

The SWMU 303/318 RFI Report appears to be in good order and represents the data well. Please notify the NC Superfund Section Representative as to the days that additional work will be done on base.

Specific Comments

1. The first paragraph at the top of page 2-8 is inconsistent with EPA SOPs and State guidance and practice for purging and sampling monitoring wells for RCRA Waste. Before varying from the EPA SOPs for groundwater sampling, proposed purge and sampling changes must be discussed with the partnering team to assure that proper

techniques are being used consistent State and EPA guidance. At a minimum the State requires that one well volume be purged prior to sampling and purging and sampling should be done at a reasonable extraction rate not to include micro purge rates.

2. Potable well PSWAS4140 is labeled as PSWHP-4140 in the last sentence at the top of page 3-3. Please make appropriate changes.

3. Figure 3-9 shows the groundwater contour map of the Upper Castle Hayne Aquifer as of February 2005. Why is there such a significant difference in groundwater elevation data and groundwater flow direction between January 2005 (Figure 3-10) and February 2005 (Figure 3-9)? If Figure 3-9 under sparging conditions at Site 86 please discuss this in the appropriate sections of the report and make a note to that effect on Figure 3-9.

4. As stated in the last paragraph on page 8-2 the soil data and shallow groundwater data indicate that the TCE and degradation products in the intermediate and deep aquifer are not site related. Will there be an additional effort to locate the source of the TCE in this area or will the plume be treated along with the 303/318 plume?

5. The recommendations at the bottom of page 8-4 include removal of contaminated soil beneath the wash pad. Will this include removal of the surface contamination at SWMU 318-SS01 and SWMU318-IS02 as discussed in the first paragraph on page 8-4?

6. Dave Lilley with the NC Superfund Section is in the process of reviewing the Human Health and Ecological Risk Assessment sections of the Report. His comments will be forwarded when they are completed.

If you have any questions or comments, please contact me, at (919) 733-2801, extension 341 or email randy.mcelveen@ncmail.net

Sincerely,

Randy McElveen
Environmental Engineer
NC Superfund Section

Cc: Dave Lown, PE, PG, NC Superfund Section
Ken Cobb, EMD/RCRA
Bob Lowder, EMD/IR
Louis Palmer, CH2MHill

Response to Comments
Draft RCRA Facility Investigation SWMU 303/318
Mr. Rodger Jackson, P.E. – NAVFAC Atlantic

General Comment:

To help decide whether the GW plume is a part of a new site, it would be good to succinctly summarize the data and figures within a tech memo or power point slide to be presented at an upcoming partnering meeting so the team can make a sound management decision and for Dan to justify to NAVFACHQ. Not a case for or against making it ER,N eligible, but an objective look of the lines of evidence. Baker would have to provide a much clearer argument that the plume came from pre-'86 activities and not from this SWMU. From the way the data is presented in the RFI now, it looks to me that this plume may be commingled with pre-86 and post-86 contamination that could have possibly come from this SWMU, pre-washrack aircraft hangar activities, perhaps the hangar to the West, and even from other structures in the area via direct discharge or through I&I from old storm or sanitary systems. In addition, I don't know if we could confidently say at this time, that the Site 86 plume and this plume is from the same source since their plume is a cigar shaped plume with a region of non-detects in between what we show in our figures. Dan may be correct that at best we would call the GW plume a new site if it qualifies (or it could be a new SWMU site if it doesn't). I have specific comments below that are related.

Response: *A technical paper (or white paper) is being prepared by Baker and Mr. Ken Cobb for an upcoming partnering meeting (January, 2006). This paper will be presented along with a Microsoft PowerPoint presentation illustrating the data and the historic activities conducted in the vicinity of the SWMUs. The paper will focus on clearing up the comments within this general comment, and will help the partnering team to decide which program the site, and any additional work associated with the site, should reside.*

Specific Comments:

1. Pg 1-3, 1st and 2nd paragraph - The text describes much of the past activity prior to the construction of the wash pad, however, Figure 1-3 shows very little of what is discussed. Suggest locating on the figure a symbol or representation of the location of the former drain lines, or at least show the 1959 water distribution plan, identify the staining on the tarmac, show where the ditch is and the direction of its flow. Perhaps zoom in on this fig to show more detail. You may want to underlay this historical activity and past/present utilities with the layers of Figs 4-6-4-20 (See comments 4-8) as a separate figure in Ch. 4.

Response: *As disused during the October 18, 2005 conference call, we will work with Mr. Ken Cobb at MCB, Camp Lejeune to get more historic data. The scale of the figure will be changed as to provide more detail provided the clarity of the figure remains intact. Given the high altitude that this figure was taken, we will only be able to enlarge it so much before it becomes distorted or unclear. We will also look at the possibility of overlying some of the isopleth maps onto the historic photograph of the site, in particular, the groundwater plume maps.*

As far as providing symbols or representing the locations of the stained areas, the ditches, etc., we will add this to the figure making it easier to associate the text to the figure.

2. Pg 4-20, last paragraph - The 2nd sentence refers to a "hot spot" shown in the upper portion of the aquifer, however Fig 4-6 does not show a shallow "hot spot".

Response: Maybe the term "hot spot" should be better defined in this paragraph. There is an area around 318-GW15 that contains some of the highest levels of Benzene in shallow groundwater. This area as well as an area centered on groundwater grab location SWMU318-GW35 has the highest levels of benzene contamination in the shallow groundwater. Therefore, we referred to these areas as "hot spots". The text will be modified so it is clear that the high concentrations in the intermediate groundwater correlate well with the highest concentrations in the shallow groundwater.

3. Figs 4-6 - 4-18 and corresponding discussion in Section 4.4.2 - To me the source of the plume looks as though it emanates from Bldg AS515 as well. Hangars commonly had floor drains in which all sorts of things could have been poured into them. Contaminants coming from this bldg as well as the SWMU could answer the argument of the East/West nature of the plume. I think that in Fig 13, it would be hard to say that the source area for TCE is not the wash area. True, a prior source may have contributed to some of this plume prior to the wash pad as shown, but the figs do show contamination leading off of the hangar and the wash rack. If this is the case, were the contaminants disposed of prior to 1986 to make it ER,N eligible? In some figures such as in Figs 4-18 4-20, it does look like a past contamination could be unrelated to 303/318, however, the data currently looks as though it is a combination of past unrelated contamination possibly from the pre-was rack aircraft cleaning, contamination coming from the SWMU, as well as contamination emanating from Hangar AS515 West of the SWMU. It would help complete the investigation and the question of the East/West flow if storm and sanitary sewer lines were overlaid on the figures and identify whether a storm ditch ran along side the entire Tarmac prior to the construction of the washrack.

Response: In order to answer all the questions and provide rebuttal to the statements contained within this comment, we are going to dissect this comment into several statements/questions and answer them individually.A good number of these comments may be answered by the research that Mr. Ken Cobb is currently conducting for the SWMUs and the surrounding area.

"To me the source of the plume looks as though it emanates from Bldg AS515 as well. Hangars commonly had floor drains in which all sorts of things could have been poured into them. Contaminants coming from this bldg as well as the SWMU could answer the argument of the East/West nature of the plume." – *Building AS515 could be one of the source areas contributing to this groundwater plume. However, according to the historic information that Mr. Ken Cobb provided, this is also an area that was used for maintenance prior to the construction of the hanger. Therefore, either recent or historical practice may have contributed to the groundwater contamination at the site. The contamination observed in the vicinity of Building AS515 is up gradient under normal groundwater flow conditions and therefore, is not likely related to activities at the wash pad or the adjacent SWMUs.*

"I think that in Fig 13, it would be hard to say that the source area for TCE is not the wash area. True, a prior source may have contributed to some of this plume prior to the wash pad as shown, but the figs do show contamination leading off of the hangar and the wash rack." – *Figure 4-13 does depict contamination leading off the wash pad and the hanger (Building AS515). However, the majority of the contamination and the highest concentrations appear down gradient of these structures. This coupled with the lack of TCE detections in soil collected from beneath the wash pad or adjacent to the SWMUs suggests that the source for this contamination may be located*

elsewhere. Given the information that we have collected to date, I still feel confident that a case could be made that the SWMUs may have contributed to the Naphthalene or Benzene groundwater plumes but not the chlorinated organic plumes. As for Building AS515, the same argument applies. The highest levels of contamination are down gradient and we do not have any soil data from beneath the building to determine if chlorinated organics reside in the soils. PID measurements did not indicate potential soil contamination, however this is just a screening tool.

" In some figures such as in Figs 4-18 4-20, it does look like a past contamination could be unrelated to 303/318, however, the data currently looks as though it is a combination of past unrelated contamination possibly from the pre-wasrack aircraft cleaning, contamination coming from the SWMU, as well as contamination emanating from Hangar AS515 West of the SWMU. It would help complete the investigation and the question of the East/West flow if storm and sanitary sewer lines were overlaid on the figures and identify whether a storm ditch ran along side the entire Tarmac prior to the construction of the washrack." – *We agree with these statements; however, we do not believe that this report should begin to investigate the answers to these questions and statements. The RFI report should stay focused on the contamination related to the SWMUs being investigated. The question that we try to answer in the RFI is "Did these SWMUs impact the environment and potentially cause risk to humans or the environment?" The answer to this question is that the Naphthalene and Benzene detections may have partially been the result of activities conducted at the SWMUs or the wash pad, but the other contamination is likely from another source or sources. We will use the ideas in this portion of your comment as part of the Technical Paper being prepared for January's partnering meeting.*

4. Fig 4-14, small western plume - Is it accurate to delineate this 100 ppb area using only well SWMU318-GW34?

<u>Response:</u> The detected concentration of cis-1,2-DCE in the intermediate sample from SWMU318-GW34 was 840 ug/L and the duplicate sample from this location contained a concentration of 760 ug/L. The TCE result from this same sample was 490 ug/L and its duplicate was 450 ug/L, thus indicating that the detection of cis-1,2-DCE was not an anomalous detection. Therefore, these results warrant depiction on this figure and since the samples collected from the groundwater grab locations surrounding this location did not contain detectable levels of cis-1,2-DCE, this sample depicts the extent of contamination based on the results of the RFI.

5. Fig 4-8, southern most plume - Same comment as 4 for the 10ppb/100ppb plume.

<u>Response:</u> Again, the detection was significant with regard to the concentration and therefore warrants depiction on the figure.

6. Fig 4-11, NE plume - Same comment for well 86-OW1IW.

<u>Response:</u> See the previous responses to comments 4 and 5.

7. I have also the same plume accuracy comments for Figs 4-13,-16, 19, 20 where vast areas are delineated using few data points.

<u>Response:</u> The plumes were constructed using data that was in excess of the comparison criteria. Realizing that monitoring wells that limited the number of deep groundwater monitoring wells (40-44') were authorized under the scope for this project, we also used grab sample data,

monitoring well data from Site 86 wells, and the new data to develop these maps. The data from all of the highlighted wells or data points were used in the construction of these figures. Therefore, these plumes are as accurate as the number of data points will allow.

8. Figs 4-18 - 20 - Did Baker use data currently collected for Site 86 LTM? This could eliminate data gaps between the their cigar shaped plume that starts just North of Bldg AS424 and this plume. Suggest inclusion of this data.

<u>Response:</u> We used the current data available at the time we conducted our sampling in January and February (I believe this was the January 2005 data). We wanted to use data that was collected at the same time as the data we were collecting for the RFI. The subsequent data was not used for the rounds collected in March, June, or September of this year.

December 19, 2005

TO: Randy McElveen

FROM: David Lilley

RE: Comments on the Ecological Risk Assessment portions of the Draft – SWMU 303/318 RCRA Facility Investigation Report, MCB Camp Lejeune, NC September, 2005

1. According to Table 4-9, the concentration of isopropylbenzene in SWMU318-GW01 is 4 ug/L, not 2J ug/L as appears in Table 7-4. Please correct and double check Tables 7-3 and 7-3 to ensure the lab data has been copied to these tables correctly.

2. Table 7-3: 1,2,4-trichlorobenzene, 1,3-dichlorobenzene (m-), and 1,4-dichlorobenzene (p-) should all have ESVs of 10 ug/kg according to the 2003 DENR guidance. Please correct.

3. Table 7-6: Since selenium and silver were retained as soil COPCs in Table 7-3, they should appear in Table 7-6. Please correct.

DL/dl/word/Eco3RA.doc/13

Response to Comments, NC DENR

SWMU 303/318 Draft RFI, September 2005; Ecological Risk Assessment Portions

David Lilley, 12/19/2005

1. According to Table 4-9, the concentration of isopropylbenzene in SWMU318-GW01 is 4 ug/L, not 2J ug/L as appears in Table 7-4. Please correct and double check Tables 7-3 and 7-3 to ensure the lab data has been copied to these tables correctly.

Response: Values on Table 4-9 reflect mobile laboratory data. Both mobile and fixed base laboratory data were available for SWMU318-GW01. As explained in the final paragraph of Section 7.2.1, fixed based data were preferentially used in the risk assessment. Fixed base data for groundwater sample SWMU318-GW01 are presented on Table 4-12. Isopropylbenzene data on Table 4-12 for SWMU318-GW01 agree with those presented on Table 7-4 and 7-7. Therefore, we believe that no changes to text or tables are necessary.

2. Table 7-3: 1,2,4-trichlorobenzene, 1,3-dichlorobenzene (m-), and 1,4-dichlorobenzene (p-) should all have ESVs of 10 ug/kg according to the 2003 DENR guidance. Please correct.

Response: Screening values on Table 7-3 reflect those values provided by the 2003 DENR Guidance for specific chemicals. Values for "total" chemical classes are only provided on this table if specifically indicated in the guidance. For example, the guidance presents a value for 2,4-dichlorophenol with a note indicating that for this chemical, the value for total dichlorophenols is used as a surrogate. Likewise, the value for total polycyclic chlorinated hydrocarbons is used as a surrogate for 3,3'-dichlorobenzidine as specified in the guidance. In all other instances "total" chemical class values are not used as surrogates for individual chemicals until the refined risk evaluation. Thus, the NCDENR 2003 screening values for total chlorobenzenes, total monochlorophenols, total polycyclic aromatic hydrocarbons, and total phthalates are introduced on Table 7-5 and are used in the refined risk evaluation presented on Table 7-6. Footnotes will be added to Table 7-3 indicating this methodology as follows:

Notes:

NA = Not Applicable/ Not Established

(1) Soil screening values are in microgram per kilogram (ug/kg) for organic compounds and in milligram per kilogram (mg/kg) for inorganic constituents.

(2) Values obtained from *Guidelines for Performing Screening Level Ecological Risk Assessments Within the North Carolina Division of Waste Management* (NCDENR 2003)

(3) The NCDENR (2003) has established a value for total chlorobenzenes, which is introduced in Step 3a (Table 7-5).

(4) The NCDENR (2003) has established a value for total monochlorophenols, which is introduced in Step 3a (Table 7-5).

(5) The NCDENR (2003) has established a value for total polycyclic aromatic hydrocarbons (PAHs), which is introduced in Step 3a (Table 7-5).

(6) The NCDENR (2003) has established a value for total phthalates, which is introduced in Step 3a (Table 7-5).

3. Table 7-6: Since selenium and silver were retained as soil COPCs in Table 7-3, they should appear in Table 7-6. Please correct.

Response: The table will be corrected in the final version of this report.

January 30, 2006

TO: Randy McElveen

FROM: David Lilley

RE: Response to Response to Comments on the Ecological Risk Assessment portions of the Draft – SWMU 303/318 RCRA Facility Investigation Report, MCB Camp Lejeune, NC
December 19, 2005

1. Response to comment 2: The screening levels as they appear in the 2003 DENR guidance have been reviewed by NC DENR and US EPA Region 4 and are appropriate for use as is in Step 2 of the ERA process. Please use them as such.

RESPONSE: Screening values provided by NC DENR (2003) for total chlorobenzenes, total monochlorophenols, total polycyclic aromatic hydrocarbons, and total phthalates will be used as surrogates for individual chemicals belonging to these chemical classes in Step 2 of the ERA as requested. Tables, Figures, and text will be edited accordingly.

DL/dl/word/Eco3RA.doc/17

December 12, 2005

TO: Randy McElveen

FROM: David Lilley

RE: Comments on the Human Health portions of the Draft SWMU 303/318 RCRA Facility Investigation Report, RCRA Program, MCB Camp Lejeune, Jacksonville, NC September 2005

1. Page 6-23: The latest version of ProUCL is 3.00.02 and can be found at: http://www.epa.gov/nerlesd1/tsc/form.htm. Please use this updated version in future risk assessments.

2. Appendix H, Table 1: The exposure route listed for fugitive dusts should be inhalation, not ingestion and dermal as listed on this table.

3. Appendix H: The difference between Tables 2.3 and 2.4 (Table 2.4 is for the construction worker scenario) should be made clear in the heading of these tables.

4. Appendix H, Table 5.1: 1,2,3-trichlorobenzene does not appear in IRIS as claimed.

5. Appendix H, Table 3.2: Why are there 2 different naphthalenes listed with 2 different concentrations? This seems to have been carried throughout the risk assessment. Please correct.

6. Appendix H, Table 7.4: It appears as though an ABS of 0.1 was used for 1,4-dichlorobenzene. Since 1,4-dichlorobenzene is an organic, shouldn't the ABS be the default of 0.01 as appears on Table 4.3 of Appendix H?

7. Appendix H, Tables 7.x: It is unclear to the reader why dermal exposure to benzene in the deep groundwater was not quantified. Please explain.

8. Appendix H, Tables 7.x: The fugitive dust inhalation intake values for 1,4-dichlorobenzene and chrysene seem to be off by several orders of magnitude. Please check the inhalation spreadsheets to make sure they are working properly.

DL/dl/HumanHealthRA2/82,83

Response to Comments, NC DENR

SWMU 303/318 Draft RFI, September 2005; Human Health Risk Assessment Portions

David Lilley, 12/12/2005

1. Page 6-23: The latest version of ProUCL is 3.00.02 and can be found at: http://www.epa.gov/nerlesd1/tsc/form.htm. Please use this updated version in future risk assessments.

Response: The most current version of ProUCL is being used in all risk assessments.

2. Appendix H, Table 1: The exposure route listed for fugitive dusts should be inhalation, not ingestion and dermal as listed on this table.

Response: Table 1 will be revised as per this comment in the final version of the report.

3. Appendix H: The difference between Tables 2.3 and 2.4 (Table 2.4 is for the construction worker scenario) should be made clear in the heading of these tables.

Response: Tables 2.3 and 2.4 will be revised in the final report.

4. Appendix H, Table 5.1: 1,2,3-trichlorobenzene does not appear in IRIS as claimed.

Response: 1,2,3-Trichlorobenzene was used as a surrogate. A footnote will be added to Table 5.1 to indicate this.

5. Appendix H, Table 3.2: Why are there 2 different naphthalenes listed with 2 different concentrations? This seems to have been carried throughout the risk assessment. Please correct.

Response: Naphthalene was analyzed as both a VOC and SVOC with two different detection limits given for each analysis. Therefore, both were

carried through the risk assessment to avoid underestimating potential risk from exposure to detected concentrations of naphthalene.

6. Appendix H, Table 7.4: It appears as though an ABS of 0.1 was used for 1,4-dichlorobenzene. Since 1,4-dichlorobenzene is an organic, shouldn't the ABS be the default of 0.01 as appears on Table 4.3 of Appendix H?

Response: The typographical error for the ABS value for 1,4-dichlorobenzene will be corrected. In addition, all applicable risk calculations will be revised as per the comment.

7. Appendix H, Tables 7.x: It is unclear to the reader why dermal exposure to benzene in the deep groundwater was not quantified. Please explain.

Response: An error was located in the Excel model that caused dermal exposure results for benzene in deep groundwater not to be pulled into Tables 7.x. The model will be revised to correct this error.

8. Appendix H, Tables 7.x: The fugitive dust inhalation intake values for 1,4-dichlorobenzene and chrysene seem to be off by several orders of magnitude. Please check the inhalation spreadsheets to make sure they are working properly.

Response: The inhalation spreadsheets will be reviewed. Please note the approach for choosing volatilization factors (VFs) will be revised as follows: the VF provided on the USEPA Region 9 PRG table will be used first, if available. Otherwise, a VF will be calculated based on USEPA OSWER guidance.

January 30, 2006

TO: Randy McElveen

FROM: David Lilley

RE: Response to Response to Comments on the Human Health portions of the Draft SWMU 303/318 RCRA Facility Investigation Report, RCRA Program, MCB Camp Lejeune, Jacksonville, NC
December 12, 2006

1. No comments.

DL/dl/HumanHealthRA2/85

Response to Comments, NC DENR

SWMU 303/318 Draft RFI, September 2005

Randy McElveen, 11/24/2005

General Comment

The SWMU 303/318 RFI Report appears to be in good order and represents the data well. Please notify the NC Superfund Section Representative as to the days that additional work will be done on base.

***Response*:** The NC Superfund Section Representative will be notified when additional work is scheduled.

Specific Comments

1. The first paragraph at the top of page 2-8 is inconsistent with EPA SOPs and State guidance and practice for purging and sampling monitoring wells for RCRA Waste. Before varying from the EPA SOPs for groundwater sampling, proposed purge and sampling changes must be discussed with the partnering team to assure that proper techniques are being used consistent State and EPA guidance. At a minimum the State requires that one well volume be purged prior to sampling and purging and sampling should be done at a reasonable extraction rate not to include micro purge rates.

***Response*:** Purging and sampling at SWMU 303/318 were conducted in accordance with the approved work plan. This was discussed at a recent partnering meeting. However, in the future, purging and sampling will follow the revisions described in the new Master Sampling Plan, as approved.

2. Potable well PSWAS4140 is labeled as PSWHP-4140 in the last sentence at the top of page 3-3. Please make appropriate changes.

***Response*:** The well designation on page 3-3 will be changed to PSWAS-4140.

3. Figure 3-9 shows the groundwater contour map of the Upper Castle Hayne Aquifer as of February 2005. Why is there such a significant difference in groundwater elevation data and groundwater flow direction between January 2005 (Figure 3-10) and February 2005 (Figure 3-9)? If Figure 3-9 under sparging conditions at Site 86

please discuss this in the appropriate sections of the report and make a note to that effect on Figure 3-9.

***Response*:** A note will be added to Figure 3-9. However, Section 3.3.2 discusses the significant difference in groundwater elevation and flow direction on pages 3-7 and 3-8.

4. As stated in the last paragraph on page 8-2 the soil data and shallow groundwater data indicate that the TCE and degradation products in the intermediate and deep aquifer are not site related. Will there be an additional effort to locate the source of the TCE in this area or will the plume be treated along with the 303/318 plume?

***Response*:** K. Cobb of EMD is preparing a presentation for the MCB Partnering Team to discuss the site and potential actions. It is our understanding that the Partnering Team will recommend a path forward following the presentation in March 2006.

5. The recommendations at the bottom of page 8-4 include removal of contaminated soil beneath the wash pad. Will this include removal of the surface contamination at SWMU 318-SS01 and SWMU318-IS02 as discussed in the first paragraph on page 8-4?

***Response*:** The Interim Measure is expected to include all the soil contamination in the vicinity of the wash pad.

6. Dave Lilley with the NC Superfund Section is in the process of reviewing the Human Health and Ecological Risk Assessment sections of the Report. His comments will be forwarded when they are completed.

***Response*:** Responses to risk assessment comments are attached.

27 September 2005

Comments for
Draft RCRA Facility Investigation
SWMU 303/318

Kenneth Cobb
MCB Camp Lejeune

General Comment: Excellent Report. I liked the conclusions section. It tied the report together well. The recommendations paragraph (both in the Executive Summary and Section 8) was a bit light given the discussion as to previous activities near the wash rack. I'll provide more specific input below.

Specific Comments:

1. Section 4, pg 4-6, section 4.1.2, first sentence, second paragraph. I believe the word 'to' needs to be removed from 'to the SWMU'. And I'm also not sure how the portion in parenthesis is intended to sound. I'd recommend removing it.

2. Section 4, pg 5-12, section 4.3.2. A reference is made early on to a Corrective Measures Study. Recommend removing the sentence.

3. Section 4, pg 4-20, section 4.4.2., forth and fifth paragraphs. In the forth paragraph of the section (the first whole paragraph to the page) the final sentence is confusing due to its length. I recommend making at least two sentences out of the given info. Also, in the final sentence, it states: 'the SWMUs may have been responsible….' However, the next paragraph indicates that contamination 'may not have been released' to the environment from the SWMU. The confusion may lie mainly in the extra long sentence mentioned previously. My interpretation of text is that the SWMU (wash rack/OWS) may have contributed to some of the contamination in the area. This contamination appears to be limited to subsurface soils. However, up-gradient groundwater contaminations is unlikely due to SWMU related activities, and are a result of prior activities.

4. Section 4 Isopleth maps. In figure 4-7 the '10 ppb' and 'DL' isopleths are dashed lines. In figure 4-6 these keys are filled in solid. Other maps have one dashed and the other filled solid. To avoid confusion and remain consistent, I recommend choosing one of the options and applying it across the board. I like the 'dashed line' approach for the '10 ppb' and 'DL' key.

5. Section 6, pg 6-25 and 6-26, section 6.3.5. Is there a guidance document that recommends choosing averaging time for non-carcinogens (AT_{NC})? I understand the carcinogenic lifetime exposure due to the RAGS guidance, and I did read that non-carcinogenic times varied from weeks to years. I'm just curious if we apply a standard across the board.

6. Section 6, pg 6-30, last paragraph, last sentence. Are we talking about infant children specifically or all children less than 12 years of age. Even if they don't shower, parents must bath them. I have to admit, that is funny when you first read it.

7. Section 7, pg 7-38, section 7.6, last paragraph, third sentence. 'Chemicals' is spelled incorrectly.

8. Appendix F. The final pages of appendix F contain SWMU 46 data. I believe this to be in error since no supporting discussion references SWMU 46.

9. Recommendation and Executive Summary Section. Please review and offer your comments on the below discussion.

Interim Measures (Removal Actions) for contaminated soils are scheduled for the site in October 2005. SHAW Environmental Inc will be performing the removal action under the Navy's Remedial Action Contract, contract number N62470-02-D-3260 task order 014. The Interim Measure is expected to remove all VOC and SVOC soil contamination from beneath the wash rack and to the east near the oil water separator.

Due to the nature of the groundwater plumes, and the minimal levels of soil contamination beneath the wash rack, it is highly probable that other activities contributed to groundwater contamination beneath the site. Evidence supports that maintenance activities as far back as 1962 utilized this general area as a maintenance and cleaning area for aircraft. The wash rack, AST's and OWS were not constructed/installed until a later date.

The groundwater contamination identified during the RCRA Facilities Investigation for 303/318 is of the same nature, and appears to join the groundwater plume associated with Installation Restoration Site 86. A review of the 2005 Monitoring Report for IR Site 86 shows the southwest section of the plume as unbounded. This southwest section of the groundwater plume for IR Site 86 appears to merge with the groundwater isopleths provided in the RFI. The information gathered during the RFI should be forwarded to the IR Partnering Team for review and discussion.

The base will have to initiate a Corrective Measures Study (CMS) under RCRA or a Feasibility Study (FS) under CERCLA to address the groundwater contamination located at, and in the vicinity of the site.

Response to Comments
Draft RCRA Facility Investigation SWMU 303/318
Mr. Kenneth Cobb, EMD – MCB, Camp Lejeune

General Comment: Excellent Report. I liked the conclusions section. It tied the report together well. The recommendations paragraph (both in the Executive Summary and Section 8) was a bit light given the discussion as to previous activities near the wash rack. I'll provide more specific input below.

Response: No response required. See Specific Comment #9 for responses to suggested text for Recommendations section of the report.

Specific Comments:

1. Section 4, pg 4-6, section 4.1.2, first sentence, second paragraph. I believe the word 'to' needs to be removed from 'to the SWMU'. And I'm also not sure how the portion in parenthesis is intended to sound. I'd recommend removing it.

Response: Agreed. We will eliminate the suggested text from the report. The removal of this text does not change the overall purpose of the paragraph or the intent of the text.

2. Section 4, pg 5-12, section 4.3.2. A reference is made early on to a Corrective Measures Study. Recommend removing the sentence.

Response: Agreed. However, the sentence will be changed to reflect the collection of this data was a cost conscience effort to save money if the evaluation of remedial technologies is required. Otherwise it is not evident why this data was collected. The sentences will read "The TOD and TOC analyses were collected for use in the remedial technology evaluation. This data was collected in case a Corrective Measure Study is required at these SWMUs".

3. Section 4, pg 4-20, section 4.4.2., forth and fifth paragraphs. In the forth paragraph of the section (the first whole paragraph to the page) the final sentence is confusing due to its length. I recommend making at least two sentences out of the given info. Also, in the final sentence, it states: 'the SWMUs may have been responsible….' However, the next paragraph indicates that contamination 'may not have been released' to the environment from the SWMU. The confusion may lie mainly in the extra long sentence mentioned previously. My interpretation of text is that the SWMU (wash rack/OWS) may have contributed to some of the contamination in the area. This contamination appears to be limited to subsurface soils. However, up-gradient groundwater contaminations is unlikely due to SWMU related activities, and are a result of prior activities.

Response: The last sentence of the forth paragraph will be modified in the final text. The sentences will now read "Given the fact that the groundwater primarily travels north to northeast under normal conditions, this trend lends some credence to the suspicion that past activities prior to the construction of Building AS515, the wash pad, and the SWMUs, may have been responsible for some of the contamination detected at the site." However, the two paragraphs are correct in that the Benzene and Naphthalene detected in the vicinity of the SWMUs may have been result of SWMU activities, however, non-SWMU related activities may also have contributed to the contamination. There is not enough evidence that this contamination has not at least partially resulted from activities at the wash pad. The detections of Naphthalene in the subsurface soils lends further evidence to support the theory that at least some of the contamination is the result of

SWMU-related activities. However, the isopleth maps illustrate that a large part of the groundwater plume for these contaminants emanates from a source area located to the west of the site, thus indicating that a portion of the groundwater plume is not the result of SWMU related activities.

As indicated in paragraph five, the TCE and daughter product contamination detected in the shallow groundwater does not have a direct link to the SWMU and is suspected to have result from other activities, not SWMU-related.

4. Section 4 Isopleth maps. In figure 4-7 the '10 ppb' and 'DL' isopleths are dashed lines. In figure 4-6 these keys are filled in solid. Other maps have one dashed and the other filled solid. To avoid confusion and remain consistent, I recommend choosing one of the options and applying it across the board. I like the 'dashed line' approach for the '10 ppb' and 'DL' key.

Response: Agreed. The figures will be checked for inconsistencies as you have stated here and corrected in the final version of the report.

5. Section 6, pg 6-25 and 6-26, section 6.3.5. Is there a guidance document that recommends choosing averaging time for non-carcinogens (AT_{NC})? I understand the carcinogenic lifetime exposure due to the RAGS guidance, and I did read that non-carcinogenic times varied from weeks to years. I'm just curious if we apply a standard across the board.

Response: RAGS also provides guidance on calculating AT_{nc}, which is the exposure duration (total amount of time exposed) expressed in years multiplied by number of days per year. For noncarcinogens, AT represents the pathway-specific period of exposure for noncarcinogenic effects. As far as selecting the exposure duration over which a receptor is evaluated, RAGS and other USEPA guidance documents recommend some standard defaults. For example, an "adult resident" is evaluated over 24 years and a "child resident" is evaluated over 6 years (1 to 6 years old). Another example is an "industrial/commercial worker" evaluated over 25 years (i.e., assumed to remain at the same job for 25 years). These are examples of standard parameters used in a typical human health risk assessment based on CERCLA guidance. USEPA promulgated exposure parameters were used in this risk assessment whenever available.

6. Section 6, pg 6-30, last paragraph, last sentence. Are we talking about infant children specifically or all children less than 12 years of age. Even if they don't shower, parents must bath them. I have to admit, that is funny when you first read it.

Response: The child resident evaluated here is a young child from 1 to 6 years old. The risk assessment assumes that a child this age does not yet shower, and consequently is not exposed to VOCs from the shower head. However, for a young child dermal exposure to groundwater via bathing is evaluated via the dermal exposure pathway risk calculations.

7. Section 7, pg 7-38, section 7.6, last paragraph, third sentence. 'Chemicals' is spelled incorrectly.

Response: The typographical error will be corrected in the final version of the document.

8. Appendix F. The final pages of appendix F contain SWMU 46 data. I believe this to be in error since no supporting discussion references SWMU 46.

Response: *Appendix F includes the recently collected data, Site 86 data, and the data collected during the past RFI investigation. During the first phase of the RFI investigation at SWMUs 303/318, SWMU 46 was being investigated as well. The inclusion of this data was in error as the old data was included in this appendix and it will be removed.*

9. Recommendation and Executive Summary Section. Please review and offer your comments on the below discussion.

Interim Measures (Removal Actions) for contaminated soils are scheduled for the site in October 2005. SHAW Environmental Inc will be performing the removal action under the Navy's Remedial Action Contract, contract number N62470-02-D-3260 task order 014. The Interim Measure is expected to remove all VOC and SVOC soil contamination from beneath the wash rack and to the east near the oil water separator.

Due to the nature of the groundwater plumes, and the minimal levels of soil contamination beneath the wash rack, it is highly probable that other activities contributed to groundwater contamination beneath the site. Evidence supports that maintenance activities as far back as 1962 utilized this general area as maintenance and cleaning area for aircraft. The wash rack, AST's and OWS were not constructed/installed until a later date.

The groundwater contamination identified during the RCRA Facilities Investigation for 303/318 is of the same nature, and appears to join the groundwater plume associated with Installation Restoration Site 86. A review of the 2005 Monitoring Report for IR Site 86 shows the southwest section of the plume as unbounded. This southwest section of the groundwater plume for IR Site 86 appears to merge with the groundwater isopleths provided in the RFI. The information gathered during the RFI should be forwarded to the IR Partnering Team for review and discussion.

The base will have to initiate a Corrective Measures Study (CMS) under RCRA or a Feasibility Study (FS) under CERCLA to address the groundwater contamination located at, and in the vicinity of the site.

Response: *These statements can be added to the Conclusions and Recommendations section of the report. However, additional data will be needed. Such as the date of the construction of the Oil/Water separator, Wash Pad, and the AST, and whether the corrective action planned for October took place during that month and when the report will be available for review by the state.*