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TETRA TECH NUS

SITE INVESTIGATION

for

MRP SITE 1 - CARR POINT

NAVSTA, Newport, Rhode Island

Naval Facilities Engineering Command Mid-Atlantic

Contract Number N62467-04-D-0055
Contract Task Order 406

May 2010

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SITE INVESTIGATION

FOR

MRP SITE 1 - CARR POINT

NAVSTA, NEWPORT, RHODE ISLAND

COMPREHENSIVE LONG-TERM ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

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EXECUTIVE SUMMARY

The Site Investigation for MRP Site 1 was conducted to determine if MC and/or other contaminants are present at the Site, and if the concentrations at which they are present could indicate a potential for risk to human health or the environment.

MRP Site 1, Carr Point (the Site), is part of Naval Station (NAVSTA) Newport and is located in Portsmouth, Rhode Island. The Site Investigation was conducted under the Installation Restoration Program for the NAVSTA Newport, Newport Rhode Island.

The Site investigated includes approximately 7 acres of land and an area of water spanning approximately 17 acres. This area included coastal land formerly used as a recreational skeet-shooting range where small arms were discharged at moving targets thrown out over the water by a mechanical means. The area currently is used as a recreational vehicle (RV) camping park for Navy and Department of Defense (DOD) personnel. Also, adjacent to this area is a gated storage area that is currently used for vehicle storage.

Portions of the gated storage area were previously used for drum and general storage. A goal of this investigation was also to characterize the gated storage area and identify any contaminants that may have been associated with past activities.

A Water Area Munitions Study (WAMS) (the equivalent of a Preliminary Assessment) was conducted for the former Carr Point Shooting Range by Malcolm Pirnie, Inc. in 2005 (Malcolm Pirnie, 2005). NAVSTA Newport personnel conducted sampling of the adjacent storage area in 2007.

E.1 PHYSICAL PROPERTIES OF THE SITE

There are three main portions of the site, the camping area, located to the north, is the former location of the firing arcs where the recreational skeet range was based, and is currently used as a seasonal RV camping area between Memorial Day and October 30. The central portion of the site is occupied by a gated storage area. The NAVSTA Newport MWR operates this storage area for Navy personnel to store vehicles, recreational vehicles and boats during off-season and other periods. The gated storage area is fenced and locked. The southern area is currently unused, and is mostly vegetated except where this vegetation was removed for the purposes of this Site Investigation. The southern area was previously used as a bulk materials storage area, as noted in the work plan and QAPP for the site investigation. Site topography is generally flat with a mean elevation of approximately 25 ft above sea level. The former Carr Point Shooting

Range is mostly level, and a small vegetated bluff is present on the west side of the site sloping steeply to a stony beach.

An intertidal gravel and sand beach extends the length of the western extend of the site. Sub-tidal sand (depositional) is found offshore in this same area. The shoreline associated with Carr Point, extending north to Melville-North, is mapped as an inter-tidal sand beach with limited area of back beach. Water currents in the bay adjacent to the site appeared to be tidally and wind – driven. Sediments included silts and sands up to 12 inches thick, underlain by a dense sand/gravel or till. Closer to the shoreline and within the intertidal areas, the sands were dominated by stones and cobbles, consistent with the shingle beaches that are naturally present on the west shoreline of Aquidneck Island.

The SI was conducted between May and July 2009. At that time, the overburden at the site was found to consist of silt, sand, and gravel in various proportions, with occasional minor amounts of clay. With increasing depth, the soil generally became more compacted and the color changed from brown and dark brown to dark gray. There were no distinct compositional units that could be correlated among the boring locations. The depth to bedrock ranges from 17 feet below ground surface (bgs) to 39 feet bgs .

E.2 CONTAMINANTS FOUND

Elevated concentrations of PAHs and propellants were found in the surface soil at the former firing areas (Camping Area). Research indicates that clay targets, known as “skeet” or “trap”, were historically manufactured with petroleum pitch, which is blended with the clay. Fragments of these clay targets were found in surface soil co-located with the higher concentrations of PAHs found in surface soil. Such conditions were not noted in subsurface soil in the areas investigated, which suggests that this is a condition limited to the surface only.

Presence of PCBs (Aroclor 1260) were found in surface soil at the gated storage area and at the outfall down-gradient of this area. This indicates a possible historic release within this gated area that was probably localized and is not indicative of the site as a whole.

Analytical data from subsurface soil investigations confirmed that the elevated concentrations of PAHs found on the surface soils, particularly in the Camping Area at the north end of the site do not extend into the subsurface soil. Traces of chlorinated solvents were noted in the area of the former oil water separator, located at the south end of the site. Metals are present throughout the site in the subsurface soil. In particular, arsenic was regularly reported above the RIDEM criteria, however, this is likely attributable to background conditions.

Analysis of groundwater samples indicated elevated concentrations of VOCs, particularly trichoroethene, tetracholoroethene and benzene. These elevated concentrations were localized, and found in samples from wells in the southern storage area and down-gradient of the drum storage area.

In sediment samples collected, elevated concentrations of metals were noted in the skeet target area closest to the shoreline.

Lead shotgun pellets remaining from the shooting range were found at all of the 20 sediment sample locations evaluated. Many of these locations provided more than the 10 pellets per square foot which was used as a screening concentration for this study. Areas with the highest lead pellet concentrations were found in an area between 200 and 400 feet west of the firing points. The highest pellet concentrations for surface (0-6 inches) and subsurface sediments (6-12 inches) were found at location SD11, with 6,128 pellets/ft^2 and 3,281 pellets/ft^2, respectively.

E.3 POSSIBILITY OF RISK FROM CONTAMINANTS

Comparison of soil data collected to human health screening criteria indicates that there is a potential for risk to human health from PAHs and the propellant nitroglycerine found in surface soil in the Camping Area, and from PCBs in surface soil at the gated storage area and adjacent to a storm drain outfall near that gated area. In addition, there could be a potential for risk to human health from metals present in surface and subsurface soils throughout the site, although some of these metals appear to be consistent with natural (background) soil conditions.

Actual risks to persons using the sites will be tempered by the presence of the maintained grass ground cover, and limitations of the use of the site as a camping area. Potential for risk assumes use of a property under a residential scenario, and the use as a campground would not result in the same exposures. In addition, the toxicity of the PAHs in the clay targets has been found in previous studies to be less than other sources of these chemicals and this limitation is likely to reduce the actual risks to any persons interacting with this clay material.

Comparison of groundwater data to screening criteria shows that there is a potential for risk to human health from VOCs in groundwater in the southern storage area. This potential risk is due to the presence of benzene, tetrachloroethene, and trichloroethene in groundwater near and down-gradient of the former drum storage area and the former oil water separator. Such risk assumes human contact with this water, either through residential or industrial use of the land.

Concentrations of contaminants found in the site surface soil and sediment may pose a potential for risk to terrestrial plants, benthic invertebrates, mammals, and birds. There is a potential risk to ecological receptors from nitroglycerine, PAHs, metals, and Aroclor-1260 in surface soil, and from metals in sediment. In addition, the presence of lead shot in the sediment of the former target area and the former overshoot area, located west of the firing arcs, may pose a potential risk to birds from the ingestion of the shot pellets.

E.4 CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this Site Investigation, it is concluded that contaminants found at the site that may pose a potential for risk to human health and the environment. However, two distinct sets of contaminants were found in two distinct areas of the site, and are likely to be present as a result of two different activities:

- PAHs and propellants are present in soil at the camping area, and lead shot in sediment offshore of the camping area, which appear to be present as a result of former sport skeet shooting at this location.

- VOCs are present in groundwater, and PCBs are present in soil at the storage area, and are likely to be present as a result of spills or leaks during the use of this area for drum and transformer storage.

Due to these distinct differences, it is recommended that the site be addressed in two parts – one being the former shooting range with the associated PAHs and propellants in soil and lead pellets in sediment, and the other being the former storage areas with VOCs in soil and groundwater, and PCBs in soil. Further investigations or remedial actions are recommended at both these locations under the appropriate environmental cleanup programs.

1.0 INTRODUCTION

This Site Investigation (SI) Report has been prepared for the Munitions Response Program (MRP), Site 1, Carr Point (the Site), which is part of Naval Station (NAVSTA) Newport and is located in Portsmouth, Rhode Island. The Site is managed under the Installation Restoration Program for the NAVSTA Newport, Newport, Rhode Island. This report was prepared for the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic under Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract No. N62467-04-D-0055, Contract Task Order (CTO) 406, based on the Navy's Statement of Work (SOW) dated March 5, 2007.

The Site investigated includes approximately 7 acres of land and an area of water spanning approximately 17 acres. This area included coastal land formerly used as a recreational skeet-shooting range where small arms were discharged at moving targets over the water. The area currently is used as a recreational vehicle (RV) camping park and gated storage area for Navy and Department of Defense (DOD) Personnel. A Water Area Munitions Study (WAMS) (the equivalent of a Preliminary Assessment) was conducted for the former Carr Point Shooting Range by Malcolm Pirnie, Inc. in 2005 (Malcolm Pirnie, 2005).

Portions of the Site have also been used as a storage area for drums and other materials, as well as for parking areas and general storage areas. Contaminants that may be present as a result of these other activities have also been sought as part of the Site Investigation.

1.1 REPORT ORGANIZATION

This SI report has been divided into eight sections, with tables and figures presented following the text. This section of the report, Section 1.0, provides background information about NAVSTA and the MRP Site 1, Carr Point area, including location, description, history of NAVSTA Newport and the site, and a discussion of previous investigations conducted at the Site. Section 2.0 provides a description of the site physical characteristics, including regional physiography, regional and site-specific geology, and regional and site-specific hydrology and hydrogeology. Section 3.0 of the report provides an overview of the field investigations conducted as part of this SI to assess the contamination and physical conditions at the Carr Point area. Section 4.0 presents a summary of contaminants found at the Site. Section 5.0 presents a discussion of the fate and transport processes available to these contaminants. Sections 6.0 and 7.0 present the results of the abbreviated human health risk assessment and the refined conceptual site model, respectively. Section 8.0 presents the summary and conclusions of this SI.

1.2 OBJECTIVES AND SCOPE OF THE INVESTIGATION

The purpose of the SI is to determine the presence of contamination, identify the possible sources of that contamination, and identify potential contaminant migration pathways, potential contaminant receptors, and associated exposure pathways. This information is necessary to determine whether a threat to human health or the environment may exist from site related contaminants, and to determine if a full remedial investigation is required that would quantify the extent of contamination and potential for risk from those contaminants.

The objectives of the SI were:

- To determine whether munitions constituents (MC) and/or other contaminants are present in the sediment, soil, or groundwater at the Site at levels that may be of concern to human health or the environment.
- To describe and map the areas confirmed and likely to have been impacted by MC and other contaminants at levels that may be of concern to human health or the environment.
- To refine the conceptual site model according to the data collected, the geological conditions encountered, and other physical characteristics of the Site.

The Site Investigation was conducted with respect to past use of MC for the Site. The WAMS (Malcolm Pirnie, 2005) concluded that Munitions and Explosives of Concern (MEC) were not present at the Site, although MC were likely to be present at the Site. This is consistent with the Site history, which describes the Site being used as a shoreline skeet and trap shooting range where shotguns were discharged at moving targets over the water. As such, this Site is being addressed as a WAMS.

A work plan and Quality Assurance Project Plan (QAPP) was prepared to direct the collection of data needed to meet the objectives described above. Data quality objectives were utilized to assure data collected as part of this Site Investigation could be used to support the description of nature and extent of contamination and human health risk assessment if it is needed at some time in the future.

1.3 NAVSTA BACKGROUND INFORMATION

This section presents general background information for the The Site, including Site location, and history of the Site. This section includes summaries of information presented in the Final WAMS report (Malcolm Pirnie, 2005) for the former Carr Point Shooting Range, and a preliminary sampling effort conducted at the storage portions of the Site.

1.3.1 Site Location, History, and Background

As stated in the WAMS report, "NAVSTA Newport is located in the northwest section of Newport, RI, and extends to the adjacent towns of Middletown and Portsmouth to the north. The installation occupies a six-mile stretch of shoreline on the west side of Aquidneck Island and is approximately 1,500 acres in area." MRP Site 1, Carr Point is located in the Melville South portion of Portsmouth, RI, approximately four miles north of the main portion of the installation (Figure 1-1).

Figure 1-2 presents historic Site features. The Site was formerly occupied by the Carr Point Shooting Range, a recreational skeet-shooting range where small arms were discharged at moving targets launched over the water. Prior to this operation, the southwest area of the Site was reportedly used for materials and drum storage. Two materials storage areas were present in the central and southern portions of the Site. A drum storage area was present in between the two materials storage areas. Portions of this area were leveled with fill and covered with asphalt pavement. Buildings that historically existed at the Site included Building 187 (Fire House), Building 212 (Storage), Building 213 (Fire Auxiliary Headquarters), and Building 233 (Club house). Only Building 233 remains on the site today and is used as an administrative office for the Navy's Morale Welfare and Recreation (MWR) division.

Historic drawings indicate that two drain pits were present on the site, one in the central portion of the Site adjacent to former Building 187, and one in the southern portion of the Site, in the former materials storage area. An oil-water separator is present in the former materials storage area. An underground 12-in reinforced concrete discharge pipe connected the former drum storage area with the oil-water separator, and then discharged to Narragansett Bay at the southern portion of the Site. A second underground 12-in vitrified clay discharge pipe traversed the central portion of the Site and discharged to the bay. A railroad spur is present in the southern portion of the Site. The Site currently is used as a RV camping park and gated storage area for Navy and Department of Defense Personnel. RVs are parked in the gated storage area for the winter.

The Site is located on approximately 7 acres of land. The Site is bounded on the west by the Narragansett Bay, on the north by picnic grounds, on the east by railroad tracks, and on the south by Normans Brook. To the east of the railroad tracks (upgradient) are Defense Highway and the former Tank Farm 4.

The WAMS summarized the history of munitions use at the former Carr Point Shooting Range and provides an assessment of the current conditions with respect to MEC and MC. As described in the WAMS report:

> The former Carr Point Shooting Range was used as a recreational skeet range by Navy personnel from 1967 to 1973, and by the Aquidneck Island Military Rod and Gun Club from 1975 to 1989. During its use as a skeet range, clay pigeons were launched toward Narragansett Bay, and small arms (i.e., shotguns) were fired at the targets as they flew over the water. As such, targets and ammunition dropped into the water (or onto the beach), with shells and casings released at the firing point… Because the shots were fired over water, there was no berm or similar ground feature to act as a backstop for spent ammunition…
>
> During the site survey of the former Carr Point Shooting Range, the data collection team located a partial firing arc at the extreme northern edge of the range. The data collection team also observed clay pigeon fragments along the low cliffs and in the beach rocks on the west side of the range, as well as one spent shotgun casing along the beach rocks. (Malcolm Pirnie, 2005)

The WAMS report concluded that there are no known or suspected MEC areas associated with the shooting range. Based on the site history, "the entire range is not suspected to contain MEC", but "the possibility exists for MC to be present" due to the firing of lead shot ammunition at clay pigeon targets launched into the air. The report indicated that MC associated with skeet shooting could potentially include "lead, lead styphnate/lead azide, antimony, arsenic, copper, tin, zinc, iron, and polycyclic aromatic hydrocarbons (PAHs) associated with clay targets (Interstate Technology and Regulatory Council, 2003)" (Malcolm Pirnie, 2005).

The lead shots were fired toward the water from three firing points on an arc located along the west side of the shooting range—one firing point at the northern end of the range, a second at the southern end, and a third in between (Figure 1-2). During the WAMS, a schematic of the areas with potential target fragment accumulation and lead shot accumulation, or "firing fan", was drawn using recommendations of Navy guidance (U.S. Naval Aerotechnical Shore Facilities Programming Guide, 1958). The firing fan included all three firing points, and extended over the water 20 degrees to the left of the southernmost range, and 20 degrees to the right of the northernmost range. Based on a firing range for shotguns conservatively estimated as 300 yards, the area of potential lead shot accumulation extended to 300 yards. The area of potential target fragment accumulation extended to 100 yards (Malcolm Pirnie, 2005).

The firing fan was adjusted in January 2009 by Tetra Tech NUS, Inc. when additional records not provided in the WAMs report were found. These additional records showed the presence of a second firing arc and anecdotal evidence suggested the presence of a third firing arc (not found on drawings or

maps). The firing fan delineation is presented on Figure 1-3, with the area extending to 100 yards labeled as the “target area” and the area beyond that as the “overshoot area”.

The WAMS concluded that because “the firing line was approximately 25 to 60 yards from the water, the majority of lead shot is presumed to have landed in the water…” In addition, “the beach area is within the first 100 yards of the fan, and is therefore a likely place for target debris to fall when struck. This is consistent with finds of target debris during the site walk”.

In addition to potential MC contamination in the firing fan from target fragments and lead shot, there is a potential for propellant residue in the vicinity of the firing points. According to EPA Method 8330B, Appendix A:

> Energetic material residues are heterogeneously distributed as particulates of various sizes, shapes, and compositions over large areas (>100 m2) at firing points, around targets, and around individual detonation events. Most of the energetic material residue deposition on DOD training ranges occurs as particles of pure or mixtures of secondary explosive compounds and as fibers or particles of gun propellants…The highest concentrations of energetic material residues have been found on or close to the ground surface at firing points…

The WAMS report notes that the former Carr Point Shoot Range was redeveloped as an RV park circa 1995 and currently has six RV campsites. Water and electricity hookups are available for RVs, but gas hookups are not (Malcolm Pirnie, 2005). The former clubhouse (Building 233) north of the Site has been converted to office and storage space for the RV park, or campground. The RV campground is open from Memorial Day weekend through the end of October. Use of the campground is restricted through MWR to military and DOD personnel and their immediate families and is not available to the general public. Children are commonly at the campground with their parents. According to the MWR, a majority of their customers return every year and can stay up to 2 weeks. A few customers may stay at the campground for a longer period of time, but this is discouraged. The campground is not gated during the off-season, but the area is patrolled and is easily visible from the main road. According to the MWR there do not appear to be any trespasser issues.

Regarding the availability of analytical data for the Site, prior to this SI, the WAMS report noted that there has been no investigation, remediation, excavation, or cleanup of munitions-related constituents at the site. As such, no analytical data are available for the site. The majority of the skeet range facilities have been removed (e.g., high/low houses, firing points); however, no information regarding facilities decommissioning and/or soil removal has been identified (Malcolm Pirnie, 2005).

During project planning periods NAVSTA representatives noted that the firing range area was close to, or overlapping, a storage area that included a former oil drum storage area. An abbreviated air photo analysis was conducted and air photos from 1962 indicate fill within the area of the target area defined by the WAMS report (Figure 1-4). Navy public works drawings show a part of this area to be a designated drum storage area. The air photos also indicate materials storage areas adjacent to the drum storage area.

Prior to the initiation of this SI, five surface soil samples were collected at the storage areas of the Site by NAVSTA Newport in January 2007. These samples were analyzed by Rhode Island Analytical Laboratories, Inc. (RI Analytical) for total petroleum hydrocarbons (TPH), pesticides, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), Resource Conservation and Recovery Act (RCRA) metals, and total cyanide. TPH and metals were detected at all locations, and polycyclic aromatic hydrocarbons (PAHs) were found at all locations except the northeast corner. Aroclor-1260 was detected at the northwest corner and center locations. The RI Analytical data report is included in Appendix A.

1.3.2 Conceptual Site Model

The first tier conceptual site model is presented as Figure 8-1. This figure depicts the potential source areas (storage area, fill area and skeet range). The possible contaminant inputs, and the possible transport mechanisms available for more contaminants. Because of the overlapping portions of the site with various uses and probable common filling and historical operations, the Firing range area and the storage area were both investigated in this Site Investigation.

2.0 PHYSICAL CHARACTERISTICS

This section presents information on the regional and site-specific geology, hydrogeology, hydrology, and physical characteristics evaluated in support of the Site Investigation of the MRP Site 1, Carr Point.

2.1 REGIONAL CONDITIONS

This section is divided into six subsections: climate, setting and topography, archaeological resources, regional geology, regional hydrogeology, and regional surface water conditions. Geology and hydrogeology specific to the site are addressed in separate sections following this discussion.

2.1.1 Climate

The climate at NAVSTA Newport is presented below. Much of the climatological information was obtained from the Initial Assessment Report (IAS) report, and is referenced below. NAVSTA Newport is situated in a temperate climate zone characterized by wide variations in seasonal temperatures. Atmospheric conditions are influenced by the naval station's proximity to Narragansett Bay and the Atlantic Ocean, which affect the area's temperatures. Winter temperatures are somewhat higher and summer temperatures lower, than more inland areas. The orientation of Narragansett Bay exposes the Bay water and coastline to southerly sea breezes in summer months and northeasterly storms in the winter (SAIC, 2000).

The NAVSTA Newport installation is located along the coastline of the Atlantic Ocean; therefore, climate is affected by the ocean's thermal qualities. Winters tend to be milder than inland locations due to warm gulf currents.

Temperature, precipitation and snowfall data collected at the Newport, Rhode Island meteorological station (the station) between 1957 and 2000 are summarized below. This data was provided by the Northeast Regional Climate Center (NRCC) at Cornell University (NRCC, 2000).

According to records, the average annual temperature has varied between a maximum of 58.5 and a minimum of 43.2 degrees Fahrenheit (°F). January and February were the coldest months, with a mean minimum temperature of approximately 23.6°F. July and August were the warmest months, with a mean maximum temperature of approximately 78.2°F.

The average annual precipitation for the station was 45.31 in. For the period between 1957 and 2000, the average monthly precipitation ranged from 2.87 in for July to 4.50 in for March. The wettest months on

average were March, April, November, and December. The average seasonal snowfall was approximately 21.6 in, whereas, in the nearby inland area of Providence, Rhode Island the average seasonal snowfall was 35.5 in. In Newport, January and February each averaged approximately 7.1 in of snow. In Providence, the average monthly snowfall amounts for January and February were 9.8 and 10.2 in, respectively.

According to records from July 1996 through June 2000, the average wind speed measured at the Newport State Airport located in Middletown, Rhode Island was 9.1 miles per hour (mph). The prevailing wind direction between November and December has been west-northwest. In January and February, the prevailing wind direction has been from the north (NRCC, 2000). These winds are due to high-pressure weather systems off of the Canadian Shield (SAIC, 2000). The prevailing wind direction between May and August has been from the south-southwest (NRCC, 2000). Bermuda high-pressure systems drive the winds from the southwest during spring and summer months (SAIC, 2000).

2.1.2 Settings and Topography

NAVSTA Newport is located in the northwest section of Newport, RI, and extends to the adjacent towns of Middletown and Portsmouth to the north. The installation occupies a six-mile stretch of shoreline on the west side of Aquidneck Island and is approximately 1,500 acres in area (Malcolm Pirnie, 2005).

Aquidneck Island is located at the eastern portion of a large estuary formed as Narragansett Bay, which receives waters from the Blackstone River, Woonasquatucket River, and Taunton River valleys.

MRP Site 1, Carr Point is located in the “Melville South” portion of Portsmouth, RI, approximately four miles north of the main portion of the installation (Figure 1-1). The site is mostly level with topography ranging from 0 to 12 ft above mean sea level (MSL).

2.1.3 Archaeological Resources

A Cultural Resources Survey (CRS) was conducted for NAVSTA Newport in 1995. The CRS indicated that one area of archaeological sensitivity was found in the vicinity of the former Carr Point Shooting Range: Site RI-942.2, a previously identified locality for which insufficient information is available to determine whether or not the area is eligible for inclusion on the National Register. The CRS has identified one resource that meets the National Register criteria in the vicinity of the former Carr Point Shooting Range; this area is the Melville Fuel Depot and Net Depot facilities, including the associated former Tank Farms 3 and 4 (Malcolm Pirnie, 2005).

2.1.4 Regional Geology

The regional bedrock information summarized below is from the Bedrock Geologic Map of Rhode Island (Hermes, et. al., 1994). NAVSTA Newport is located at the southeastern end of the Narragansett Basin, an ancient structural basin originating near Hanover, Massachusetts. This basin is a complex north-south trending synclinal mass of Pennsylvanian age sedimentary rocks and is the most prominent geologic feature in eastern Rhode Island and adjacent Massachusetts. The basin is approximately 55 miles long and varies from 15 to 25 miles wide.

The rocks of the Narragansett Basin are non-marine sedimentary rocks of Pennsylvanian age, predominately conglomerates, sandstones, shales, and anthracite. Total thickness of the strata in the Narragansett Basin has been estimated at 12,000 ft. Many folds and some faults occur throughout the basin, but the character and amount of the folding and faulting are not clearly known.

The bedrock of the Narragansett Basin has been divided into six units, which are, in descending stratigraphic order: the Dighton Conglomerate, the Purgatory Conglomerate, the Rhode Island Formation, the Wamsutta Formation, the Sachuest Arkose, and the Pondville Conglomerate. The Rhode Island Formation immediately underlies NAVSTA Newport.

The Rhode Island Formation is the most extensive and thickest of the Pennsylvania formations in Rhode Island. The Rhode Island Formation in the northern portion of the basin is not metamorphosed. However, in the southern portion of the basin, as in the vicinity of NAVSTA Newport, the unit is metamorphosed. Metasedimentary rocks, including metaconglomerates and metasandstones, as well as schist, carbonaceous schist, phyllites, and graphite are present within the formation.

Overlying the Pennsylvanian rocks of the Narragansett Basin are surficial deposits of Pleistocene sediments. These Pleistocene sediments owe their origin to the Wisconsin glaciation that covered the area with ice several thousand feet thick. As the glaciers began to recede 10,000 to 12,000 years ago, unconsolidated glacial materials of variable thickness were deposited through the Narragansett Basin area. The unconsolidated glacial material ranges from 1 to 150 ft thick; it is thicker in the valleys and thinner in the uplands. Glacial material consists of a loose till and outwash deposits characterized by sands, silty sands, and gravels. These deposits were derived from shale, sandstone, conglomerate, and in a few places, coal (TRC, 1992).

Till is the most extensive of the glacial deposits in Rhode Island. This glacial deposit is unstratified and widely heterogeneous in grain size distribution, typically comprised of fine (clay/silt/sand) and coarse (pebbles/cobbles/boulders) fractions (USDA SCS, 1981). In southern New England, the late Wisconsinan

surface till is predominant. Published reports indicate that the surface till forms a discontinuous mantle over bedrock uplands and beneath stratified drift deposits. In general, the surface till comprises a loose sandy unit containing boulders and cobbles, and lenses of stratified sediments. However, surface tills vary in composition. The physical characteristics of surface till generally reflect local bedrock and older surficial materials from which the deposit was derived (Melvin, et. al., 1992).

Regionally, the Upland till plains, the Narragansett till plains, and the Charlestown and Block Island end moraines are till deposits in Rhode Island. NAVSTA Newport is located on the Narragansett till plain. This glacial till deposit may have been derived from a sedimentary and meta-sedimentary rock provenance (USDA SCS, 1981).

2.1.5 Regional Hydrogeology

Information presented below on regional groundwater hydrogeology in the NAVSTA Newport area is from the Initial Assessment Study (IAS) report for NAVSTA Newport (EEI, 1983) and from the Groundwater Map of Prudence Island and Newport Quadrangle, Rhode Island (Schiner and Gonthier, 1965). Groundwater on Aquidneck Island is obtained from the unconsolidated glacial deposits of till and outwash and from the underlying Pennsylvanian bedrock. Throughout the area, depth to groundwater ranges from less than 1 ft to about 30 ft, depending upon the topographic location, time of year, and character of subsurface deposits. The average depth to the groundwater is around 14 ft on Aquidneck Island and groundwater moves from areas of higher elevations to Narragansett Bay or the Sakonnet River. Groundwater supplies in the east bay section of Rhode Island are generally provided by aquifers in till and bedrock. The average depth to groundwater is approximately 5 to 12 ft.

The State of Rhode Island Department of Environmental Management (RIDEM) has classified groundwater in Rhode Island to protect and restore the quality of the state's groundwater resources for use as drinking water and other beneficial uses, and to assure protection of the public health and welfare, and the environment. Groundwater underlying the more developed portions of the installation is classified as Class GB. designates GB groundwater as that "which may not be suitable for public or private drinking water use without treatment, due to known or presumed degradation". Groundwater beneath the site has been classified by RIDEM as "GA". GA-classified groundwater resources are "suitable for public or private drinking water use without treatment" (RIDEM, 1996).

Seasonal water level fluctuations are common in the area. During the early spring the water table rises due to recharge from snowmelt and rainfall. In late spring and summer, the water table usually declines because rainfall either evaporates or is used by plants before it can reach the water table. During autumn the water table generally rises.

Bedrock wells in the area range from 14 to 1,300 ft in depth. The average depth for these bedrock wells is 135 ft. Yields from bedrock wells range from less than 1 to as much as 55 gallons per minute. Most bedrock wells yield less than 10 gallons per minute. The yields vary considerably in the bedrock over short distances because the joints and fractures that transmit water to the wells occur randomly. Joints and fractures are most numerous and widest near the top of the bedrock and become fewer and narrower with depth. Bedrock wells seldom go dry, but yields can be extremely low if not enough fractures and joints occur in the area of the well.

2.1.5.1 Area Water Use

Public water in the City of Newport and Town of Middletown is supplied and managed by the Newport Water Department. The Town of Portsmouth purchases water from the Newport Water Department but operates its own distribution system. Approximately two thirds of Portsmouth is serviced by public water with the remaining one third supplied water from private water wells. While no specific records exist as to private well use in the information reviewed, in general, the majority of private wells are reportedly located on the eastern portion of Aquidneck Island, primarily in Middletown (Personal Communication, Town of Portsmouth, 1992; Quinlan, 1997).

The Newport Water Department receives its water supply from a series of seven surface water reservoirs located on Aquidneck Island and two surface water reservoirs (Tiverton and Fall River) on the mainland. The seven surface reservoirs on Aquidneck Island are Lawton Valley Reservoir; St. Mary's Pond; Sisson Pond; Easton North Pond; Easton South Pond; Paradise or Nelsons Pond; and Gardners Pond. Each of these reservoirs is supplied water via rainfall and runoff, and is not augmented by groundwater supply wells.

2.1.6 Regional Surface Water Conditions

NAVSTA Newport is located within the Narragansett Bay drainage basin. The basin covers an area of approximately 1,850 square miles, of which 850 square miles are in Rhode Island (USDA SCS, 1981). All surface water drainage from the Narragansett Bay drainage basin empties into Narragansett Bay.

Narragansett Bay occupies three former river valleys which have been drowned by the advance of the Atlantic Ocean. Narragansett Bay is 20 miles long and 11 miles wide. The bay has a surface area of 102 square miles. The shape of the former river valleys has changed little since the last glaciations. The bay is divided into an eastern and western passage by Conanicut Island. The average depth of the bay is 30 ft. In the western passage, the average depth is 25 ft, while in the eastern passage; the average depth is 50 ft. The eastern passage, which the Carr Point Site fronts, allows deep water access up to the south

end of Prudence Island. Channel depth exceeds 80 ft in the eastern passage from Gould Island seaward, and depths in excess of 150 ft occur near the mouth of the bay.

Freshwater flows into the bay at an average rate of 1,239 ft3/sec from a drainage area of 1,850 mi2. This accounts for 90 percent of the annual flow of fresh water into the bay. The other 10 percent is provided by direct rainfall into the bay and sewage effluent. An average of some 43 in per year of precipitation falls directly into the bay. The freshwater input into the bay is small compared to the large volume of saline water in the bay. The relatively small freshwater input into the bay results in the bay water being well mixed with only small salinity gradients through the bay. Salinity ranged from about 22 parts per thousand (ppt) in the Providence River to 32 ppt at the mouth of the bay.

Tides are semi-diurnal in Narragansett Bay with a mean range of 3.6 ft at the mouth of the bay and 4.6 ft at the head. About 13 percent of the volume of water in the bay is exchanged each tidal cycle (Oviatt and Nixon, 1973). This is over 250 times the mean tidal river flow into the bay during a tidal cycle. The tidal movement is the single most important factor in water circulation in the bay.

2.2 PHYSICAL CHARACTERISTICS OF THE SITE

Site characteristics as of the time of the investigation are presented in this section. Figure 2-1 presents the general features of the site.

There are three main portions of the site. The camping area, located to the north, is the former location of the firing arcs where the recreational skeet range was based. The central portion of the site is occupied by a gated storage area. The NAVSTA Newport MWR operates this storage area for Navy personnel to store vehicles, recreational vehicles and boats during off-season and other periods. The gated storage area is fenced and locked. The third main section of the site is the southern area, which is currently unused, and is mostly vegetated, except where vegetation was removed for the purposes of this Site investigation. The southern area was previously used as a bulk materials storage area, as noted in the work plan and QAPP for the site investigation.

2.2.1 Site Topography and Setting

Abutting properties include additional recreational fields and land to the North, Normans Brook and wooded (unused) property to the South, and Narragansett Bay (downgradient) to the west. To the east (upgradient) is property also held by the US Navy and formerly used to hold ship fuels (No. 6 Fuel oil). This property is referred to as Tank Farm 4. Large portions of Tank Farm 4, particularly the areas closest

to MRP Site 1 were never used for storage of fuel, but were vacant lands. Tank Farm 3 is located to the northeast of the Carr Point Site.

The topographic profile of NAVSTA Newport is generally flat with a mean elevation of approximately 25 ft above sea level. The former Carr Point Shooting Range is mostly level, and a small vegetated bluff is present on the west side of the site sloping steeply to a stony beach.

Surface waters in the areas upgradient of the site (land occupied mostly by Tank Farms 3 and 4) drain primarily to Lawton Brook and Normans Brook, respectively. Since the former Carr Point Shooting Range is located in between these areas, it is reasonable to conclude that surface water from the site also drains to Lawton Brook and Normans Brook. These two streams discharge directly into Narragansett Bay.

The WAMS report summarizes the findings of a 2001 Integrated Natural Resources Management Plan (INRMP) written for NAVSTA Newport and presents tables listing the plants of special concern and potentially sensitive fish and wildlife resources that were identified for NAVSTA Newport in the INRMP. The study included a survey of marine, freshwater fish and wildlife, threatened and endangered species, migratory birds/mammals in adjacent ocean waters, special aquatic sites, resources of concern, and Narragansett Bay plants of special concern. Federally-listed marine turtle species that may be present in the waters of Narragansett Bay include the threatened loggerhead turtle (Caretta caretta), the endangered green turtle (Chelonia mydas), and the endangered Kemp's ridley turtle (Lepidochelys kempii). State of Rhode Island species include one endangered plant species (Northern Blazing Star Liatris scariosa var. nieuwlandii) and four threatened plant species, and two species of state special interest animal species. The INRMP also listed several species of commercial importance that included hard clams, blue mussels, squid, winter flounder, striped bass, bluefish, mackerel, tautog, and summer flounder.

2.2.2 Site Soils

According to the United States Department of Agriculture Soil Survey of Rhode Island, two soil map units occur on the site: beaches (Ba) and Merrimac sandy loam (MmA). Beach soils are mapped on the northwestern half of the site, along the shoreline. This map unit consists of sand dunes or escarpments and of sandy, gravelly, and cobbly areas that are exposed during low tide. Slopes range from zero to eight percent. About five percent of the Ba map unit includes rock outcrops (USDA SCS, 1981).

Merrimac sandy loam is mapped on the southeastern half of the site. Merrimac sandy loam is characterized as a nearly level, somewhat excessively drained soil on outwash plains and terraces. It consists of a dark brown sandy loam surface layer 8 in thick, a yellowish brown and dark yellowish brown

sandy loam subsoil 17 in thick, and a light yellowish brown gravelly sand substratum to a depth of 60 in or more. Permeability is moderately rapid in the surface layer and subsoil, and rapid in the substratum. Available water capacity is moderate and runoff is slow. The soil is extremely acid through medium acid.

2.2.3 Site Geology

The overburden at the site generally consisted of silt, sand, and gravel in various proportions, with occasional minor amounts of clay. With increasing depth, the soil generally became more compacted and the color changed from brown and dark brown to dark gray. There were no distinct compositional units that could be correlated among the boring locations.

Borings conducted on the western portions of the site encountered silty sand and gravel for most of their lengths. The bottom few feet generally consisted of silt and phyllite fragments.

A boring conducted east of the railroad spur encountered mainly silt with weathered phyllite fragments from a depth of 4 ft to split spoon refusal at 31 ft bgs. Similar material was encountered in other borings located near the Gated Storage Area.

The depth to bedrock, as determined by split spoon refusal, ranged from 17 ft at the southern most boring SB07 to 39 ft in the northern most boring However, there were fluctuations of depths measured to bedrock between these extremes. The observed distribution is likely the result of differences in the degree of bedrock weathering encountered and the softness of the rock at the surface. The bedrock encountered consisted of dark gray phyllite, which is common in outcrops on the shoreline and in upland areas in the vicinity.

2.2.4 Site Hydrogeology

The depth to groundwater at the site ranged from 4.41 ft below the top of the PVC riser (bpvc) in the area of the rail spur to 11.94 ft bpvc in the camping area. The relative elevation of each monitoring well was determined by a State of Rhode Island registered land surveyor. As expected from the local topographic gradient, groundwater appears to flow to the northwest towards Narragansett Bay.

2.2.5 Sediment Conditions

An intertidal gravel and sand beach extends the length of the western edge of the site. Sub-tidal sand (depositional) is found offshore in this same area. Three macroalgal beds on sand substrate are located offshore in Normans Brook (a Class B1 water body which is located approximately 0.3 miles to the

southeast of the site, and flows adjacent to the former Tank Farm 4), Carr Point, and Lawton Brook (a Class B water body which is located approximately 0.5 miles to the northeast of the site and flows adjacent to former Tank Farm 3) areas. A fringe gravel terrace and fringing sand flat are located adjacent to the discharge area of Normans Brook. The shoreline associated with Carr Point, extending north to Melville-North, is mapped as an inter-tidal sand beach with limited area of back beach. The shoreline north of Lawton Brook is mapped as an inter-tidal gravel beach.

During sampling, no detailed evaluations of the bottom conditions in the sampling areas were conducted. Some photographs were taken, and are provided in the sediment investigation report, provided in Appendix B. No evidence of eelgrass or other submerged aquatic vegetation was observed during sampling. The hard shell clam Mercenaria mercenaria (Quahog) was found in samples and on the anchoring devices.

Water currents appeared to be tidally- and wind-driven. NOAA documents an ebb tide current of 0.6 knots to the south west and a flood tide of 0.8 knots to the NE. These velocities are supported by other documented information (Appendix B). Sediments included silts and sands up to 12 in below the sediment/water interface, underlain by a dense sand/gravel mix that is presumed to be a compacted material similar to a glacial till. This compacted material may actually be a glacial till, though it has not been formally identified as such. Closer to the shoreline and within the intertidal areas, the bottom substrate was dominated by stones and cobbles, consistent with the shingle beaches that are naturally present on the west shoreline of Aquidneck Island.

3.0 FIELD INVESTIGATIONS

This section describes the field investigation activities implemented as part of the SI for MRP Site 1, Carr Point. Field tasks were conducted during May and June of 2009. All activities were conducted in accordance with the Work Plan and Quality Assurance Project Plan (QAPP) (TtNUS, 2009).

The Work Plan and QAPP were prepared to direct the collection of data needed to provide a foundation for the SI report and risk assessment. The data were collected such that it could be used to support the nature and extent of contamination at the site, provide exposure point concentrations for the human health risk assessment, and provide exposure data for the first tier of an ecological risk assessment.

Figure 3-1 presents the current site features and on-shore sample stations. Separate discussions for each of the field investigation activities conducted at the site are provided in Sections 3.1 through 3.7 of this report. An overview of the investigation activities for each major field task is presented below; including an identification of sample numbers, locations of samples, analyses, and rationale for those tasks. Also provided is a discussion of field observations and measurements if applicable. Samples were collected and analyzed according to the quality assurance/quality control criteria defined in the QAPP prepared as part of the Work Plan (TtNUS, 2009).

3.1 TREE AND BRUSH CLEARING

Prior to the field investigation, brush clearing took place in order to access areas that were previously overgrown. On the southern end of the site where the oil water separator is located, an area approximately 1.5 acres in size was cleared to obtain access to test pit locations and two boring locations. Brush in this area was chipped and left in place while larger trees were set off to the side. Brush clearing was also conducted in the former drum storage area in order to access two boring locations. Brush in this area was chipped and left in place.

3.2 SOIL INVESTIGATIONS

Soil investigations were conducted at the site through several sampling efforts. These efforts were designed in the Work Plan to evaluate different target areas of the site and different potential sources of contaminants. The field efforts included test pit excavations, soil borings, and surface soil samples, including multi-incremental (MI) soil sampling for the former shooting areas. These efforts are described in the following subsections.

3.2.1 Test Pit Excavation

Test pits were excavated in the former storage areas of the site (Southern Area and Gated Storage Area). In the Southern Area, three test pits, (TP01A - TP01C), were excavated around the oil water separator and three test pits, (TP02 - TP04), were excavated in order to locate a former drain pit. In the Gated Storage Area, two test pits were excavated. Test Pit TP06 was excavated in the southwest corner to determine if there was a pipe leading from the former drum storage area to the oil-water separator (OWS). Test pit TP07 was also excavated in the former drum storage area. This test pit was excavated in the northern half of the former drum storage area at the direction of RIDEM to investigate potential contamination at the groundwater table. Test pit TP05 was excavated southwest of the location where Building 187 was formerly located. The purpose of this test pit was to locate a drain pit that was shown on historical drawings adjacent to former Building 187.

Between May 11, 2009 and May 13, 2009 a total of nine test pits were excavated. Table 3-1 presents a sample summary and description of each test pit. Global Remediation Services of Boston, Massachusetts advanced and backfilled the test pits using a rubber track-mounted excavator. The test pits were excavated to depths ranging from approximately 3.5 to 12 feet (ft) bgs. The TtNUS FOL observed the excavations and documented each test pit with test pit logs (Appendix C). Soil was screened for volatiles in the field using a portable photo-ionization detector (PID). The soils encountered, size of the excavations, depths to groundwater (if applicable), and the presence of debris, metal, oil, staining, or odor were recorded. All samples were collected from the excavator bucket. The operator would first remove any material in the sample area that had fallen from the sides of the excavation. The operator would then scrape the side of the excavation in the sample area to obtain enough soil volume for the designated sample analyses. Once the excavator bucket was at rest on the ground and the excavator turned off, VOC vials were filled using a “Terra core” sampler driven into the soil within the excavator bucket. Soil from the bucket was then transferred into a stainless steel bowl where it was homogenized and placed into the appropriate sample containers for other analyses.

Test pit soil samples were analyzed for VOCs, SVOCs, pesticides/PCBs, metals and PAHs. Analytical results of test pit samples collected during this SI are provided in Section 4 of this report.

Test Pits TP01A, B, and C:

Test pits TP01A, TP01B and TP01C were all excavated in the area of the OWS which is located at the south end of the Site at the top edge of a slope to the shoreline. The inset on Figure 3-1 presents test pit locations around the OWS. TP01A was excavated along the inlet edge of the OWS where the inlet pipe enters the structure. The trench was approximately 4 ft wide and was excavated to a depth of

approximately 8 ft. A pipe leading into the north end of the OWS was uncovered at about 5 ft bgs. Soil from beneath the pipe was collected at a depth of 5 to 6 ft bgs as described above. The test pit was excavated to a final depth of 8 ft to locate the bottom of the OWS and look for any visual evidence of contamination, however, no such evidence was found.

During brush clearing a concrete manhole was located about 6 ft NE of the OWS. It was discovered that the two structures were connected by a 6-8 inch (in) diameter pipe with a shut off valve in the center. TP01B was excavated to locate the pipe entering the concrete manhole. The TP01B trench was approximately 4 ft wide and was excavated to a depth of 8 ft bgs. The pipe leading into the concrete manhole was uncovered at approximately 5 ft and a sample was collected from beneath it at a depth of 5 to 6 ft bgs.

TP01C was excavated along the southeast (onshore) side of the OWS to identify visual or olfactory evidence of contamination, however, no such evidence was found. The trench was approximately 4 ft wide and was excavated to a depth of 8 ft bgs. The bottom of the OWS was located at approximately 7 ft bgs.

Groundwater was observed in each test pit at approximately 8 ft bgs. All three trenches had the same lithology. The interval of 0-1.5 ft bgs consisted of brown topsoil with some organics, rounded gravel and rocks up to 6 in, and was characterized as sandy silt. At 1.5-2 ft bgs a grayish brown layer was present that was siltier, with finer sand then above, as well as more angular gravel up to 3 in. Present below 2 ft was a brown material with some clay and medium grained sand with some large round rocks up to 12 in.

Test Pit TP02:

Test pit TP02 was excavated in the area located to the southeast of the OWS to locate the former drain pit shown on historical drawings. While scraping the surface soil with the excavator to possibly locate the drain pit field personnel observed that the surface soil in one area was rockier and more gravely than the surrounding material. It was hypothesized that this could possibly be the area where the drain pit might have been located so the field team decided to investigate the area through the excavation of TP02.

The trench for test pit TP02 was approximately 4 ft wide, 8 ft long and 8 ft deep. The top 6 in of material was an organic layer consisting of sticks and leaf debris. Present from 0.5-1.5 ft bgs was brown silty sand with rocks up to 12 in. Below 1.5 ft was sandy silt with some clay. (Refer also to field log sheets presented in Appendix C).

No fill debris was encountered in this test pit. Groundwater was encountered at approximately 7 ft. Once the water level stabilized it was at about 3 ft below ground surface. The water filled the excavation very quickly. No visual evidence of contamination was observed.

Test Pit TP03:

Test pit TP03 was excavated in the southern area of the site to the east of TP02. This trench was also excavated to seek evidence of the former drain pit shown in this area on historical drawings, as well as to compare the material in the trench to the material observed in test pit TP02.

The trench for test pit TP03 was approximately 6 ft wide, 15 ft long, and 10 ft deep. The top 6 in of material was an organic layer of sticks and leaf debris. Present from 0.5-1.5 ft was brown, medium grained silty sand with some rounded rocks up to 8 in. Below 1.5 ft was a dark brown to grey silty sand with some clay and large rocks up to 12 inches in size. (Refer also to field log sheets presented in Appendix C).

No fill debris was encountered in this trench. Groundwater was encountered at approximately 8 ft bgs. Water filled the trench much slower than at test pit TP02, and it seemed to level off at approximately 8 ft bgs. Material in this test pit was less sandy with more clay then test pit TP02.

Test Pit TP04:

Test pit TP04 was excavated in the southern area of the site to the southeast of test pit TP02 and the OWS. This trench was excavated because historical drawings showed the former drain pit in this location.

The trench for test pit TP04 was approximately 5 ft wide, 12 ft long, and 8 ft deep. The top 3 ft at this location were disturbed during the original scouring while searching for the former drain pit and were therefore assumed to be similar to test pits TP02 and TP03. Below 3 ft was brown/grey material consisting of large grained silty sand with a large amount of gravel and rounded stones up to 8 in. Groundwater was encountered at 7 ft bgs and filled in the trench quickly. (Refer also to field log sheets presented in Appendix C).

No fill debris or visual evidence of contamination was encountered in this trench. A sample was collected at the groundwater level where soil was saturated.

Test Pit TP05:

Test pit TP05 was excavated in the parking area southwest of former building 187 where a former drain pit is shown on historical drawings (Figure 1-2).

The trench for test pit TP05 was approximately 17 ft wide, 24 ft long, and 3.5 ft deep. The top 1 ft of material was compact gravely material used to create the parking lot. From 1-2 ft grey silty sand with fragments of phyllite was found. Below 2 ft was medium grained silty sand with rounded rocks up to 12 in. Groundwater was not encountered in this excavation. (Refer also to field log sheets presented in Appendix C).

This test pit was only excavated to 3.5 ft because it was in the center of a parking lot. It was excavated in the location where historical drawings showed the drain pit to be and it was not found at that depth. The field team decided that it would be more beneficial to wait for more information to become available before more trenches were excavated. Further excavation would have further impacted the parking lot. One sample was collected in the area where the historic drawings showed the drain pit. This sample was collected in the same manner as described above but directly from the test pit rather than from the excavator bucket.

Test Pit TP06:

Test pit TP06 was excavated in the southwest corner of the former drum storage area to determine if there was a pipe leading from the former drum storage area to the OWS.

The trench for test pit TP06 was approximately 10 ft wide, 20 ft long, and 7 ft deep. The top 3.5 ft of material was brown silty medium grained sand with rounded gravel up to 4 in. Between a depth of 3.5 ft to 7 ft was clayey medium-grained sand with larger more angular rocks than above, up to 12 in. A sample was collected at the end of the pipe. The test pit was excavated to 7 ft at the direction of RIDEM to investigate if there was any asphalt or ground water. No asphalt or groundwater was encountered. (Refer also to field log sheets presented in Appendix C).

Although there is fill material on the surface, none was encountered in this test pit. The material appears to be clean fill at this location.

Test Pit TP07:

Test pit TP07 was excavated in the center of the northern half of the former drum storage area, in the vicinity of SB11. This test pit was excavated in this location at the direction of RIDEM to locate groundwater and to seek visual evidence of contamination.

The trench for test pit TP07 was approximately 4 ft wide, 8 ft long, and 12 ft deep. Between 0 and 4 ft, fill material was found overlying an asphalt base. Asphalt was found at 4 ft, overlying a sand base layer, and a base of compacted grey material. Between 5 and 8 ft was a compact natural light brown sandy clay material with angular gravel up to 3 in. 8-12 ft was the same sandy clay with a darker brown color. Groundwater encountered at 10 ft. (Refer also to field log sheets presented in Appendix C).

No visual evidence of contamination was observed.

3.2.2 Soil Samples at Storm Drain Outfalls

Soil samples were collected at two outfalls located along the beach. One outfall was located at the termini of the pipe from the OWS. The second outfall was located at the termini of the drainage pipe that runs beneath the center of the gated camper storage area. Two samples intervals were collected at each location from 0-6 in and 6-12 in.

Soil samples from outfalls were analyzed for VOCs, SVOCs, pesticides/PCBs, metals and PAHs. Chemical analysis of the test pit samples collected during this SI is provided in Section 4 of this report.

At each location debris (sticks, leaves, stones, etc.) were removed to allow access to the surface soil. Once the area was scanned visually and with a PID for evidence of contamination, VOC samples were collected using a “Terra core” sampler. An 8-oz wide mouth jar was half-filled, covered with aluminum foil, and set aside to allow volatiles to concentrate in the headspace. A headspace reading was measured with the PID and recorded on the sample log sheet.

Soil was collected from the sample station using a stainless steel trowel and placed in a stainless steel bowl. The soil was homogenized and placed in the appropriate sample jars for laboratory analysis. Once these steps were completed, any excess soil was removed to expose soil at 6 inches in depth. The entire process was repeated for a second sample collected from the 6-12 in interval.

3.2.1.1 Outfall Soil Sample SS01

Outfall soil sample SS01 was located at the termini of the drainage pipe that runs beneath the center of the gated camper storage area. No visual evidence of contamination was observed and there were no readings from the PID. The sample was collected as described above. The 0-6 in interval was described as brown medium grained silty sand with pieces of phyllite up to 3 inches in size. The 6-12 in interval was described as brown medium grained silty sand with some pieces of phyllite up to 1 inch in size.

3.2.2.2 Outfall Soil Sample SS02

Outfall soil sample SS02 was located at the termini of the OWS outfall pipe. No visual evidence of contamination was observed and there were no readings from the PID. The sample was collected as described above. The 0-6 in interval was described as fine grained sandy silt with some angular pieces of phyllite up to 3 inches in size. The 6-12 in interval was described as fine grained sandy silt with few pieces of angular phyllite up to 3 inches in size.

3.2.3 Drilling and Soil Sampling From Borings

Drilling activities were conducted at the site in order to characterize the overburden geology, collect surface and subsurface soil samples for laboratory analysis, and install groundwater monitoring wells. Soil borings were advanced at a total of 11 locations, 8 of which were completed as overburden groundwater monitoring wells. This section of the report provides an overview of the soil boring investigation and summary of the field measurements and observations made during the drilling activities.

3.2.3.1 Overview of Soil Borings

A total of 11 soil borings were advanced across the site and soils were sampled in each to characterize the overburden and to aid in determination of the nature and extent of the subsurface soil contamination. At 8 of the 11 soil boring locations overburden groundwater monitoring wells were installed. The boring and monitoring well locations are shown in Figure 3-1. Boring logs are presented in Appendix C. A soil boring sample summary is presented on Table 3-2. A summary of borings and rationale for locations is provided on Table 3-3.

The soil borings were advanced in accordance with the procedures specified in the approved Work Plan, except for the following field modifications approved by the Navy.

- Soil boring SB07 was advanced using hollow stem auger, not the drive and wash method specified in the Work Plan because overburden material found at this location (gravelly sand) favored the use of hollow stem auger (FMR 1).

Continuous split spoon sampling was conducted at 2-ft intervals to the top of bedrock in all 11 borings. The physical characteristics of each soil sample were described using the Unified Soil Classifications System (USCS) and recorded on boring logs, presented in Appendix C. In addition to sample characteristics, other pertinent observations such as water levels, sample moisture, depth changes in lithology, fill material, staining, and visual contaminants or odors were recorded on the boring logs. As each split spoon sampler was opened the soils were monitored for organic vapors using a PID. Readings were recorded on the boring logs.

Two sample aliquots were collected from each 2-ft long split spoon interval. One aliquot was used for jar headspace screening for organic vapors, and a second aliquot was stored for possible laboratory analysis. Results from jar headspace screening for organic vapors were recorded on sample log sheets and boring log sheets. At least four soil samples from each boring were collected for laboratory analysis in accordance with the Work Plan.

- Surface soil (0-1 ft) samples were collected by hand at 10 of 11 locations prior to advancing boring equipment. Soil boring sample CRP-SB04-0002 could not be collected by hand because it was beneath asphalt, it was sampled during the advancement of soil boring SB04;
- another sample was collected at the interval immediately above bedrock;
- a third sample was typically collected at the interval above the water table; and
- the fourth sample was typically collected where the greatest PID reading was recorded or somewhere in between bedrock and the top of the water table (within the saturated zone).

Following the collection of the jar headspace screening aliquot, the VOC soil sample for laboratory analysis was collected as a grab sample from the most heavily contaminated portion of the split spoon sampler, based on the initial organic vapor screening results and/or visual observation. If no organic vapor detections and no visual evidence of contamination were noted, the grab VOC sample was collected from the center of the target sample interval. The samples for the remaining laboratory analyses were collected after the entire 2-ft interval was uniformly mixed. Observed geologic conditions possibly affecting contaminant distribution, such as potential confining layers, coarse-grained (relatively high porosity/permeability) soils, or the vadose zone above the water table, were taken into account when selecting the VOC sample location from the split spoon sampler. Remaining soils from each boring were contained in a roll-off container until they could be properly characterized and disposed of off-site.

Soil samples were analyzed for VOCs, metals, SVOCs, pesticides, PCBs, gasoline range organics (GRO), and diesel range organics (DRO). Details on the results of these analyses are discussed in Section 4 of this report. A summary of soil samples collected and selected for laboratory analysis is presented in Table 3-2. General observations such as sample type and number, sampling time, depth interval, and methods used were recorded on a soil sample log sheet.

All borings that were not completed as monitoring wells were abandoned by backfilling with a mix of sand, and bentonite-cement-grout. This backfill material was used in order to re-seal the bottoms of the foundations in the sumps were borings were drilled and to reduce potential hazard from possible sinkhole formation.

3.2.3.2 Field Measurements and Observations During Soil Borings

During the advancement of soil borings and sampling, all of the field measurements and observations were recorded in a field notebook and/or on boring logs. Recorded field measurements and observations included jar headspace screening results for organic vapors measured with a PID, geologic soil descriptions and visual/olfactory signs of potential contamination (i.e., discolored soils, odors, etc.). Table 3-2 includes a summary of headspace readings and visual/olfactory observations of potential contamination for all soil samples collected. Field measurements and observations from the SI soil boring program are also presented in the soil boring logs and well construction logs included in Appendix C.

Boring SB01 was completed in camping area at the top of the bank adjacent to the shoreline, down gradient of former building 213 (Figure 1-2). Overburden material in this area was mostly sandy silt and silty sand with some gravel and fragments of weathered phyllite. Headspace screening was conducted at every interval. All the PID readings were 0.0 parts per million (ppm). Bedrock was reached at 28.5 ft.

Boring SB02 was advanced in the northwest corner of the gated storage area. Overburden material in this area consisted mainly of sandy silt and silty sand with some gravel. Weathered phyllite was encountered at approximately 23.5 ft and competent bedrock was encountered at 26 ft. Headspace screening was conducted at every interval. All PID readings were 0.0 ppm.

Boring SB03 was advanced in the gated storage area down gradient of former building 212. Overburden material in the area consisted mainly of sandy silt and silty sand with some gravel. Weathered phyllite was encountered at 25 ft and competent bedrock was encountered at 29.5 ft bgs. Headspace screening was conducted at every interval. All PID readings were 0.0 ppm.

Boring SB04 was completed on the northwest portion of the asphalt road that surrounds the former drum storage area. Overburden material in this area consisted of silty sand and sandy silt with occasional clay and some gravel. Phyllite fragments and weathered phyllite were encountered at approximately 30 ft and competent bedrock was encountered at 35 ft bgs. Elevated headspace readings were recorded at 4 ft (5.3 ppm), 6 ft (15.2 ppm), and 18 ft (5.1 ppm). A sample was collected at the 4-6 ft interval where the highest PID reading was recorded.

Boring SB05 was advanced near the south east corner of the gated storage area on the outside of the fence where the train track spur enters the gated camper storage area. Overburden material in this area consists mostly of silty sand and sandy silt with some clay and rock fragments. Weathered phyllite was encountered at approximately 30 ft and competent bedrock was encountered at 31.5 ft bgs. The only interval that provided a detected headspace reading was at 4 ft (4.3 ppm).

Boring SB06 was completed in the southwest portion of the former drum storage area. Overburden at this location consisted mostly of sandy silt and silty sand with some gravel and rock fragments. Some concrete was encountered at 2 ft. Weathered phyllite was encountered at 20 ft and competent bedrock was encountered at 25 ft bgs. Elevated headspace readings were recorded at 18 ft (4.1 ppm), 22 ft (4.2 ppm), 24 ft (13.8 ppm), and 25 ft (4.6 ppm). Readings were also recorded at 16 and 20 ft but they were both below 1 ppm.

Boring SB07 was completed in the center of the cleared area in the southern storage area. The material encountered in this location was mostly sandy silt and silty sand with gravel and rock fragments. Weathered phyllite was encountered at 15.5 ft and competent bedrock was encountered at 17.5 ft. Headspace screening was conducted at every interval. All PID readings were 0.0 ppm.

Boring SB08 was advanced next to the OWS in the southern storage area. The overburden material encountered in the area was mostly silty sand and sandy silt with some gravel. Weathered phyllite was encountered at 17 ft and competent bedrock was encountered at 17.5 ft bgs. An elevated headspace reading was recorded at 14 ft (24 ppm). Headspace readings were also recorded at 8 and 16 ft but both readings were below 1 ppm.

Boring SB09 was advanced in the north end of the jobsite in between the shore fence and the remainder of shooting arc no.1 (arc 1). The overburden material encountered at this location was mostly silt and sandy silt with some gravel. Bedrock was encountered at 39.5 ft bgs. Headspace readings above 0 ppm were recorded at five intervals with a maximum reading of 0.6 ppm.

Boring SB10 was completed in the center of the gated storage area next to test pit TP05. The overburden material in the area consisted of silt and sandy silt with some gravel. Bedrock was encountered at 18 ft bgs. Headspace screening was conducted at every interval. All PID readings were 0.0 ppm.

Boring SB11 was completed in the center of the north portion of the former drum storage area. The overburden material in this area was fill from 0-4 ft (evidence by the layer of asphalt present at 4 ft). Below that was natural material consisting of silt and sandy silt with rock fragments, clay and some gravel. Bedrock was encountered at 20.5 ft bgs. Headspace screening was conducted at every interval. All PID readings were 0.0 ppm.

There were indications that the ground had been reworked in borings SB01, SB04, SB06, and SB11. Boring SB01 encountered a fragment of decaying wood at a depth of 8 ft bgs. This boring had to be moved due to excessive drilling water loss at a depth of 14 ft bgs, possibly caused by an abandoned pipe at this depth. In boring SB04, a layer of peat was encountered from approximately 5 ft to 6 ft bgs, which likely indicates the original grade at this location. The fill material above the layer of peat was dark brown to dark gray silty sand and gravel. SB11 encountered fragments of asphalt at a depth of 4 ft bgs, and SB06 encountered a layer of concrete at 2 ft bgs.

3.2.4 Multi Incremental Soil Sampling at Firing Points

Multi increment (MI) soil samples were collected from the three former firing points and analyzed for propellants by EPA SW-846 Method 8330B and SVOCs by EPA Method 8270C. Sampling was conducted in accordance with the EPA test method and the Department of Defense Environmental Data Quality Workgroup Guide for Implementing EPA SW-846 Method 8330B. Chemical analytical results are presented in Section 4 of this SI report.

Before sampling began three grids were laid out, one encompassing each firing arc. About half of the northern most shooting arc remains (arc 1) as well as a small concrete pad which is believed to be the southern most point of the southern most arc (arc 3). In order to create the three grids, the distance between the northern most point and the southern most point was measured (about 410 ft), and that was then divided into three equal sections to create the separate three grid sets. Within each grid set were 30 squares (about 15x15 ft); from west to east, two rows of nine squares, a row of seven squares, and a row of five squares. Figure 3-2 shows the layout of a grid, this pattern was chosen to best cover the area of the shooting arc. Figure 3-1 depicts the grids on the former firing arcs, identified as arc 1, arc 2, and arc 3.

At each arc, three samples were collected. Each sample was a composite of 30 surface soil aliquots, one collected from each of the 30 squares within the grid from a depth of 0-2 in. The three samples from each grid were designated with an A, B or C. Aliquots for sample A were collected from the southeast corner of each square, aliquots for sample B were collected from the southwest corner of each square and aliquots for sample C were collected from the northwest corner of each square. At each aliquot location within the square, (A, B or C), two soil grabs were collected and placed in separate bowls. One bowl was designated for propellant analysis and the other bowl was designated for SVOC analysis. Grab samples were collected by first removing the grass from the surface soil; then, a 2 in long, 1.7 in ID coring tool was driven into the soil; the coring device was removed from the ground using a stainless steel trowel and the soil was transferred into the stainless steel mixing bowl. Once all 30 grab samples were collected, all of the soil in the bowl designated for propellant analysis was placed into labeled Ziploc bags and shipped to the laboratory for preparation and analysis under method 8330B. The soil in the bowl designated for SVOC analysis was homogenized in the field and from that material a 4 oz jar was filled and shipped for laboratory analysis. The soil that was left over from the SVOC bowl was used to refill holes created in the lawn during sampling.

Using this approach, three composite samples were collected from each of the three arcs, for a total of nine samples. Samples were analyzed for propellants under method 8330B and for SVOCs under method 8270.

3.3 GROUNDWATER SAMPLING

A groundwater sampling was conducted to identify contaminants present in groundwater and to provide initial information on the hydrogeology at the site. This section provides an overview of the groundwater sampling effort, including summaries of the monitoring well installation methods, well construction details, groundwater sampling methodology, and field measurements and observations associated with the groundwater investigation conducted at the site. A description of the site hydrogeology based on the data collected during the Phase I investigation is provided in Section 2 of this report. The SI soil boring and well boring logs are presented in Appendix C; groundwater monitoring well construction logs are presented in Appendix C; a detailed evaluation of groundwater analytical data is presented in Section 4.0.

Eight overburden monitoring wells (MW01, MW02, MW03, MW04, MW05, MW06, MW07, and MW08) screened across the water table were installed. The well locations were chosen in order to investigate areas of suspected groundwater contamination based upon historical information, and to provide information on the direction(s) of groundwater flow. The drilling was performed by a drilling subcontractor under the supervision of a TtNUS field geologist. Figure 3-1 shows the locations of the groundwater

monitoring wells. Table 3-3 presents a summary of wells installed. Table 3-4 presents details on the construction of the wells installed as a part of this SI.

At each well location, a boring was advanced down to bedrock, and soil samples were collected as described in Section 3.2.3 of this report. After completion of the boring, a groundwater monitoring well was constructed as described below. Soil descriptions and headspace screening results from the boring were used to determine the target depth and screen length for the well.

The monitoring wells were constructed of 2-in inside diameter (I.D.), flush-threaded, Schedule 40 PVC screen and riser. The screen for each overburden well was 10 ft long and 10-slot (0.010 in). The well annulus was backfilled with No.0 silica (quartz) sand filter-pack to at least 1 ft above the top of the well screen, and a minimum 2-ft thick seal consisting of bentonite chips was placed above the sand pack (only one foot of bentonite was placed above the sand pack at MW07 due to shallow groundwater present. Sand was placed in the well annulus from the top of the bentonite seal to the ground surface, except in overburden wells MW01, and MW03, where the backfill above the filter-pack consisted entirely of the bentonite seal due to the shallow depth of these wells. A concrete surface seal was placed at each well surrounding either the stick up casing or the flush-mount casing. A total of five flush-mount wells and three stick-up wells were installed. Stick-up wells were completed with a 4-in I.D. steel stick-up protective casing with a locking cap.

It is important to note that much of the commonly used sand filter-pack sizing criteria have primarily been developed for water supply wells or wells which are to be installed in uniform water-bearing geologic materials that are considered to be aquifers (i.e., water bearing units that yield significant quantities of water to wells). The descriptions on the boring logs (see Appendix C) indicate that the overburden formation materials are not very uniform and include a significant percentage of fines. Thus, although an attempt was made to install wells from which representative, sediment-free groundwater samples could be collected, there are no defined well design criteria that would have assured truly sediment-free or low turbidity groundwater in the wells at this site.

3.3.1 Overburden Well Installation

The overburden monitoring wells were installed using a combination of hollow-stem auger and standard drive-and-wash drilling methods. Hollow-stem auguring was only used at MW07. The well screen depths for overburden wells were chosen based upon information obtained from split-spoon soil sampling.

Overburden monitoring wells MW01, MW02, MW03, MW04, MW06, MW07, and MW08 were screened across the water table since no significant readings from the PID during headspace screening were

encountered. MW05 was screened below the water table because during drilling the material encountered seemed to be very dry and dense, it was expected that the borehole would yield no water so the screen was placed deeper into the weathered phyllite.

During well construction, 2 feet of sand was generally used below the screen. Less than 2 feet was used in monitoring wells MW 02, MW05, MW07 and MW08. In MW07 and MW98, where refusal was encountered at a relatively shallow depth, the sand depth was decreased in an attempt to optimize the position of the well screen relative to the water table. The goal was to keep 3 feet of screen above the water table to assure that there would be adequate water and to assure that the screen bridged the water table. In MW05, there was no evidence of any water in the overburden during drilling, and the screen was placed at the bottom of the borehole to maximize exposure to groundwater in that location. During construction of MW02, only one foot of sand was installed, possibly due to over installation of bentonite, and then compensated by putting down less sand. Regardless, this is not expected to affect the overall performance of the well.

3.3.2 Groundwater Monitoring Well Development and Synoptic Water Level Measurements

Following monitoring well installation, activities, each newly installed monitoring well was developed by removing water with 1/2-in ID, 5/8-in OD low density polyethylene (LDPE) tubing fitted with a check valve and driven by a Waterra pump. During well development, water quality parameters (stabilization criteria) were monitored, including: pH, conductivity, temperature, and turbidity. The objective of the well development program was to remove fine-grained sediments from the vicinity of the well screen, pumping until the water quality parameters stabilized, optimally achieving a turbidity of less than 5 NTUs.

There were no monitoring wells that achieved this optimum stabilization criteria. The silty nature of the soil in the area created very silty conditions in the wells. Turbidity levels did not go below 39.5 NTU and the lowest final reading was 42.3 NTU. Well development logs are provided in Appendix C.

MW01 was developed by pumping it dry and allowing it to recharge. A total of 5 gallons of water were purged from the well at the end of the 2-hr time limit which amounts to approximately 10 well volumes. Turbidity in this well never reached below “off scale” during development. During low flow sampling turbidity levels reached below 5 NTU and stabilization was achieved.

MW02 was developed by continuously pumping water. A total of 30 gallons were removed from this well at the end of 4 hours, which amounts to approximately 28 well volumes. This was the first well developed and it was after this well development that the field geologist and project manager added the 2-hr time limit. Turbidity levels in this well were constantly fluctuating up and down. Turbidity in this well reached as

low as 39.5 and had a final turbidity of “off scale”. During low-flow sampling turbidity levels stabilized at approximately 40 NTU and stabilization was achieved in approximately 1.25 hrs.

MW03 was developed by continuously pumping water. A total of 40 gallons of water were purged from this well at the end of the 2-hr time limit which amounts to approximately 25 well volumes. Turbidity in this well reached 42.3 NTU at the end of development. During low flow sampling turbidity levels reached 20.0 NTU at the end of the time limit.

MW04 was developed by pumping it dry and allowing it to recharge. A total of 7.5 gallons were purged during development which amounts to approximately 6.6 well volumes. Turbidity in this well was “off scale” during the entire development. During low flow sampling turbidity levels ended up at 69.4 NTU at the end of the 2-hr limit.

MW05 was developed by pumping dry and allowing it to recharge. A total of 20 gallons was purged from this well during development which amounts to approximately 5 well volumes. During development turbidity in this well reached a low of 296 NTU at the end of 2 hours. During low flow sampling turbidity reached a low of 20.7 but had a final reading of 148 NTU at the end of 2 hours.

MW06 was developed by purging dry and allowing it to recharge. A total of 12 gallons were purged during development which amounts to approximately 6.3 well volumes. At the end of the 2-hr development period turbidity levels were still “off scale”. During low-flow sampling turbidity levels stabilized around 44 NTU.

MW07 was developed by continuously pumping water. A total of 60 gallons were purged at the end of the 2-hr time limit, which amounts to approximately 36 well volumes. Turbidity reached 119 NTU at the end of the 2hr time limit. During low flow sampling turbidity levels stabilized around 4 NTU and stabilization was achieved in approximately 45 min.

MW08 was developed by purging dry and allowing it to recharge. For the last purge it was left to recharge fully while MW07 was being purged. This was done in order to purge as much water as possible although it does appear that the 2-hr time limit was greatly exceeded. A total of 12 gallons were purged during development which amounts to approximately 8 well volumes. Turbidity was “off scale” during the entire development. During low flow stabilization turbidity did stabilize around 25 NTU and stabilization was achieved in 1.25 hours.

Table 3-5 provides a summary of the well development data collected, including the final stabilization criteria readings.

A synoptic groundwater level measurement round was conducted on June 16, 2009. Water levels were collected twice during the synoptic round. The first group of readings was collected inside of a 25 min time period that was approximately 2 hours after low tide (0951 to 1013). The second group of readings was collected inside of a 20 min time period that was approximately 2 hours after high tide (1634 to 1652). The water levels were collected in the same order during each round.

Depths to groundwater ranged from approximately 4.41 to 11.96 ft below top of PVC riser pipes in onsite monitoring wells. The entire water column was gauged in each monitoring well with an oil-water interface probe to check for the presence of both light non-aqueous phase liquids (LNAPLs) and dense non-aqueous phase liquids (DNAPLs). No non-aqueous phase liquids (NAPLS) were detected in any of the monitoring wells gauged during the investigation.

A subcontracted surveyor licensed in the State of Rhode Island surveyed the elevation and location of each of the groundwater monitoring wells, in reference to the Rhode Island Grid System. The elevations of each well's outer protective casing and the top of the PVC inner riser pipe were surveyed to the nearest one-hundredth of a foot (0.01 ft). The ground adjacent to each well was surveyed to the nearest one-tenth of a foot (0.1 ft). The well coordinates and elevations are provided in Table 3-4.

3.3.3 Groundwater Sample Collection

Groundwater samples were collected from the eight new monitoring wells installed. Groundwater sampling was conducted between June 1 and June 4, 2009.

In accordance with the work plan, newly installed wells were sampled no less than 2 days following well development. Prior to initiating groundwater sampling activities the groundwater level of each monitoring well was measured to the nearest 0.01 ft using an electronic water sensing device. The water level indicator and probe were decontaminated before each use with a tap-water/non-phosphate detergent wash and a distilled/deionized water rinse.

Low-flow (low-stress) groundwater sampling was conducted using the "EPA Region I Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, Revision 2", dated July 30, 1996, as amended 2002. Prior to sample collection the monitoring wells were purged using decontaminated bladder pumps that operated using compressed nitrogen. New Teflon bladders were used in each monitoring well. The intake of the purge and sample tubing was placed 1 ft above the bottom of the screen for all monitoring wells sampled. Approximately 1 to 5 gallons of groundwater were purged from each monitoring well prior to stabilization of sampling criteria, as presented in Table 3-6. Drawdown greater than 0.3 ft was noted in the following monitoring wells: MW01 (0.85 ft at 100 mL/min),

MW04 (0.75 ft at 75 mL/min), MW05 (1.34 ft at 90 mL/min), MW06 (1.45 ft at 75 mL/min), and MW08 (1.27 ft at 75 mL/min).

Field measurements of groundwater sampling criteria were collected every 3 to 5 minutes (or as appropriate) during purging of the monitoring wells to determine stabilization prior to sample collection. These parameters included the water level, flow rate, temperature, specific conductance, pH, oxidation reduction potential (ORP), dissolved oxygen, and turbidity. No PID positive detections, odors, or sheens were noted during the purging and sampling event, or during previous well development activities. All field measurements and notable observations made during groundwater sampling were recorded on “low flow” groundwater sample log sheets (Appendix C).

Groundwater samples were submitted for analysis of VOCs, SVOCs, PAHs, pesticides/PCBs, TPH (GRO/DRO), total metals, dissolved metals. Groundwater sample log sheets, sample collection summary sheets, and chain-of-custody forms are contained in Appendix C.

3.4 SEDIMENT INVESTIGATION

Sediment sample stations were selected to characterize present levels of contaminants associated with the firing range in the sediments offshore of the firing range. Table 3-7 provides a sediment sample collection summary. Figure 3-3 presents the locations of the sediment sample stations.

Sediment samples were collected between June 15 and June 19, 2009 from 20 stations located in the subtidal and intertidal zones along the shoreline located west of the firing range. Nine composite samples were collected from the skeet target area, and 11 composite samples were collected from the overshoot area. Locations of each core collected were recorded using a Trimble DSM-232 GPS using OMNISTAR™ real-time differential corrections combined with ESRI ArcPad™ software.

3.4.1 Sediment Location Descriptions

Sediment samples were collected in two locations, the skeet target area, and the overshoot area. Sediment sample locations SD01 through SD09 were located in the skeet target area and sediment sample locations SD10 through SD20 were located in the overshoot area. The skeet target area is located beneath the zone where clay pigeons would have most likely been hit, and the overshoot area is where pellets may have landed after missing the target.

Each sediment sample location consisted of a circle with a 5-foot radius. In all but one location the eight cores that were collected, were collected from within this 5-foot radius. The cores collected at SD06 were collected from within and outside of the circle because of too much wave action at the time of collection.

During the collection of the sediment samples observations were recorded to describe depth, water current/direction, sediment conditions and coordinates (horizontal and vertical). Sediment samples were collected in either fine to coarse grained silty sand, or in fine to medium grained sand. At many locations evidence of marine life was also captured in the core tubes, including small bivalves, crabs, sea worms, shrimp and immature larva. None of these animals were identified to a taxonomic level.

3.4.2 Sediment Sample Collection and Processing

Twenty sediment stations were sampled from a boat using an AMS stainless steel multi-stage soil core sampler. All composite samples were collected with 1.88 in ID, 12 in long, acetate sleeves that were manually inserted into the sediment to a depth of up to 12 in or until refusal. These sleeves were collected from the boat using a hand-driven coring device fitted with extension rods. Once the 12 in depth or refusal was reached the coring device was removed from the sediment and raised to the surface. The acetate liner was removed from the coring device and capped on both ends; it was then placed in an upright position until all cores that make up the composite sample for that location were collected. The cores were then transferred to the handling team on shore.

A total of 20 surface sediment samples from 0-6 inches were collected from the 20 stations and 15 subsurface sediment samples were collected from below 6 inches. Every sample collected was comprised of eight aliquots contained in separate acetate core tubes.

Once on shore, each core was divided into two separate bowls representing the 0-6 inch interval and the greater than 6 inch interval. Because of partial compression of the sediment, and because cores rarely reached 12 inches in depth during sampling, the sample handling team on shore would use information provided but the boat sampling team as well as visual evidence to determine how much sediment was placed into each bowl from each core. Best judgment was used for each group of core tubes to place what was likely to represent the top 6 inches of sediment in one bowl and the remaining below 6 inches of sediment in the second bowl. The contents of each bowl were weighed to the nearest gram. Weights of each sample were recorded on the sample log sheets.

Once the samples were divided and weighed they were placed on a No. 10 sieve and fines were allowed to pass through the sieve retaining larger material. To ensure that all fines were removed, the sample was flushed through the sieve with seawater. When all of the fines were collected in the bowl below the sieve,

the seawater that was added to aid in the sieving process was decanted, the fines were homogenized, and the appropriate sample jars were filled. Sediments passing through the No. 10 sieve were analyzed for PAHs and metals (target area) and metals only (overshoot area). A split sample for metals analysis was also collected for RIDEM (there was no split sample collected from SD01-0612, SD02-0612 and SD12-0006 because of inadequate sample volume).

The material left on the sieve that could possibly contain, or be lead shot pellets was placed in a plastic bag for later lead shot count analysis.

Upon returning to the office in Wilmington MA, the TtNUS sediment sampling team separated the lead shot pellets from the sediment. This was done under magnifiers in a clear glass pan with approximately 0.5 inches of water placed over a plain white paper. The material that was caught in the sieve was dispersed in the water on one side of the dish and moved to the opposite side of the dish by hand using hand tools. As lead shot pellets were identified, they were removed with forceps and dried.

Once all material was sorted, the pellets were counted and weighed. If less than 100 pellets were found, the material was sorted through a second time to ensure that no pellets were missed during the original sort (the significance of missing one or two lead pellets once the total is greater than 100 becomes far less). Pellets were finally placed in a labeled plastic bag for possible future analysis and natural material remaining (stones, shells, gravel, etc.) was discarded. Number of pellets and weights were recorded on the sample log sheet.

The Work Plan specifies an action level of 10 pellets per square foot. Each acetate tube provided a sample surface area of 2.776 in^2, and thus the eight acetate liners together represent a surface area of approximately 22.2 in^2. In order to produce a number that represents total pellets per square foot or 144 in^2, the number of pellets counted in each sample were multiplied by 6.5 (144 in^2 / 22.2 in^2 = 6.5).

3.4.3 Sediment Analysis

Sediment samples that were collected from the skeet target area were analyzed for metals (except mercury) and PAHs. Sediment samples collected from the overshoot area were only analyzed for TAL metals, except mercury. The skeet target area was tested for SVOCs as well as metals because there is a possibility that the clay pigeon debris could be a source of contamination. Chemical analytical results are presented in Section 4 of this report.

4.0 ANALYTICAL RESULTS

This section presents a discussion of the analysis of samples collected and the results from those analyses. Results for detected contaminants are summarized on Tables 4-1 through 4-5. Figures 4-1 through 4-4 present representative contaminants detected as discussed below.

4.1 SAMPLE ANALYSIS AND DATA VALIDATION

Samples collected were analyzed in accordance with the Final SI Work Plan and Quality Assurance Project Plan (TtNUS, 2009). Laboratory analysis for VOCs was conducted by EPA SW-846 Method 8260B, SVOCs by EPA SW-846 Method 8270C, pesticides by EPA SW-846 Method 8081A, PCBs by SW-846 - Method 8082, petroleum hydrocarbons by EPA SW-846 Method 8015B, and metals by EPA SW-846 Methods 6010B, 7471A, and 7470A. In addition, a subset of the samples collected were analyzed for propellants following EPA SW-846 Method 8330B.

Soil and sediment samples analyzed for SVOCs were analyzed in full scan mode. Groundwater samples were analyzed for SVOCs by full scan mode and selective ion monitoring (SIM), for select target compounds to achieve lower quantitation limits.

Petroleum hydrocarbons (extractable) were analyzed using a GC/FID method (EPA Method 8015B) modified for quantification of extractable petroleum hydrocarbons in the C-9 to C-36 range. Results from this analysis were reported as diesel range organics (DRO). In addition, gasoline range organic compounds (GRO) were analyzed in most samples for which VOCs were analyzed. The GRO analysis provides quantification of petroleum hydrocarbons in the C-5 to C-12 range. Both DRO and GRO results are discussed in the text of this section as petroleum hydrocarbons.

All the laboratory data results were validated by Tetra Tech NUS, Inc. chemists according to established US EPA Region I data validation guidelines. A Tier II level data validation was performed for the VOC, SVOC, pesticide, PCB, GRO, DRO, metal, and propellant results.

Based on this validation process, some analytical results were qualified due to limitations inherent to sample matrix interferences or to field and or laboratory issues. Sample results qualified and appended with a “J” are considered approximate because of limitations identified during data validation.

In general, data were found to be acceptable for use in this SI and can be used for evaluation of risk under CERCLA and EPA protocols. Qualifications on the reported data are documented in the data

validation memoranda for each data package provided by the analytical laboratory. Data validation memoranda are presented in Appendix D of this report.

The discussion in this section contains summaries of analytical results along with comparisons of detected contaminant levels to comparison criteria as described in the Carr Point Work Plan.

4.2 SUMMARY OF ANALYTICAL RESULTS

Data discussions in this section focus on the maximum concentrations of chemical contamination detected. Concentrations of chemical contamination detected compared as described above are presented in summary tables 4-1 through 4-5, for each environmental medium sampled.

Separate sections discuss the following media:

- Surface soil (including samples collected at boring locations, outfall locations, and multi-increment sample grids at former firing arcs (MIS samples);
- subsurface soil from borings, and subsurface soil from test pits;
- groundwater collected from monitoring wells and;
- sediment samples from intertidal and subtidal areas near the site.

Analytical results for field duplicate samples were averaged with the original sample results. Sample stations where this calculation was performed are identified with the suffix "-AVG". For instances where two positive or non-detected results were reported, the results were added together and divided by two. For instances where one positive result and one non-detect result were reported, the positive result was added to one-half the undetected result and then divided by two. If the non-detect result was elevated due to dilutions, the positive result was used for the average.

4.2.1 <u>Surface Soil</u>

This section presents the results of the surface soil sampling. Surface soils were collected from soil borings and outfalls, and as part of the MIS sampling. Surface soil samples collected from the soil borings and outfalls were analyzed for VOCs, SVOCs, pesticides, PCBs, metals, and petroleum hydrocarbons. The MIS samples were analyzed for semi-volatiles and a limited group of propellants, selected as indicators of contaminants present from discharge of firearms. Surface soil analytical results exceeding criteria are presented in Table 4-1. Representative analytes found in surface soil samples exceeding PALs are presented on Figure 4-1.

4.2.1.1 Results from Surface Soil Samples at Boring Locations

The results from surface soil samples collected at boring locations are discussed in this section. The locations of the soil borings where surface soils were collected are depicted on Figure 3-1. As stated in Section 3.2.3.1, surface soil samples were collected from a depth interval of 0-1 foot, as measured from the ground surface. However, at the SB-04 location asphalt was present at the ground surface, and therefore the surface sample interval at that location was identified as 0-2 feet. The analyzed sample at SB-04 was actually taken from the interval immediately below the asphalt bedding material (approximately 0.5 feet below ground surface) to 2 feet below ground surface.

Contaminant-specific concentrations were compared to Project Action Limits (PALs) and residential Regional Screening Levels (RSLs). As described in Section 2.7.1.3 of the QAPP, soil PALs are the lower of RIDEM Residential Direct Exposure Criteria (DEC) and EPA Ecological Soil Screening Levels (Eco-SSLs) or Oak Ridge National Laboratory (ORNL) Soil Preliminary Remediation Goals for Ecological Endpoints (Eco-PRGs).

Representative analytes exceeding these criteria were selected for depiction on Figure 4-1. Representative analytes selected were benzo(a)pyrene and Aroclor 1260. Benzo(a)pyrene was selected as it is the most toxic of the PAHs, and Aroclor 1260 was the most prevalent non-PAH contaminant detected above PALs in surface soil.

VOCs

Two VOCs, acetone and methylene chloride, both common laboratory contaminants, were reported in four samples at low concentrations. None of the detected concentrations exceeded the PALs or RSLs.

SVOCs

Twenty-one SVOCs, primarily PAHs, were detected in surface soil samples collected at the boring locations. SVOCs were detected in 10 of the 11 samples (all samples except SB03). PALs were exceeded in 5 of the 11 samples collected. PAH concentrations in two additional samples exceeded RSLs but not PALs. The following PAHs were detected in surface soil borings at concentrations that exceeded the project action limits: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene. The maximum PAH concentrations were found most frequently at location SB-09, which is located on the northern end of the former firing range (north end of camping area). The second-highest PAH concentrations were found in the sample from location SB05,

which is located near the rail spur. Clay pigeon fragments, which are suspected to contain PAHs, were noted in the surface soil samples from the firing range, SB01 and SB09.

Pesticides/PCBs

Fifteen pesticides and one PCB (Arcolor-1260) were detected in surface soil borings. PALs were exceeded in 4 of the 11 samples collected. Three of the surface soil samples that exceeded PALs, SB02, SB03, and SB10, are located in the gravel parking lot. The fourth sample that exceeded PALs, SB09, is located in a grassy area of the former firing range. The following pesticides and PCB were detected at concentrations that exceeded the PALs: 4,4'-DDT (maximum concentration = 62 µg/Kg at SB09), Aroclor-1260 (maximum concentration = 45,000J µg/Kg at SB02), and dieldrin (maximum concentration = 32J µg/Kg at SB10).

Petroleum Hydrocarbons

Petroleum hydrocarbons as DRO were detected in all 11 surface soil samples. DRO were detected in all of the surface soil samples and exceeded the PAL at two sample locations: SB05 and SB09. The maximum concentration detected, 5,600 mg/kg, was reported at location SB09, and located at the north end of the camping area. Volatile petroleum hydrocarbons as GRO were not detected in any of the surface soil boring samples.

Metals

Twenty-two metals were detected in surface soil boring samples. The following metals were detected in surface soil at concentrations that exceeded PALs: antimony, arsenic, cadmium, chromium, cobalt, copper, lead, manganese, mercury, selenium, vanadium, and zinc. Several metals exceeded PALs at all 11 sample locations: arsenic, cobalt, lead, manganese, vanadium, and zinc. Aluminum and iron concentrations were higher than residential RSLs in most or all surface soil samples collected; PALs are not established for these metals.

Maximum metal concentrations were most detected in sample SB10, which is located in the gravel parking lot at the suspected location of a former drain pit. The second-highest number of maximum metal concentrations were detected in surface soil sample SB08, the location of the former oil/water separator.

4.2.1.2 Surface Soil at Outfalls

The results from surface soil samples collected at shoreline outfalls during this investigation are discussed in this section. Surface soil samples were collected immediately downgradient of the two outfall pipe termini that discharged near the shoreline. Samples at location CRP-SS01 were collected at an outfall that appears to have once carried storm drain water from the Gated Storage Area. Samples at location CRP-SS02 were collected at the outfall of what appears to be the historic discharge from the oil-water separators at the Southern Storage Area. During sample collections, water was not noted to be discharging from either of these outfalls.

Four surface soil outfall samples were collected. Two samples were collected at each of two outfall locations, one from 0 - 6 in and one from 6 - 12 in.

Contaminant-specific concentrations were compared to PALs and residential RSLs. As described in Section 2.7.1.3 of the QAPP, PALs for soil are the lower of RIDEM Residential DEC and EPA Eco-SSLs or ORNL Soil Eco-PRGs.

VOCs

Tetrachloroethene was detected in one of the four outfall soil samples at a trace level (1.1 J ug/kg at SS02-0612), collected at the discharge from the former oil-water separator. Acetone, a common laboratory contaminant, was also reported in one sample. The trace concentrations did not exceed PALs or RSLs.

SVOCs

Five SVOCs were detected, all in sample CRP-SS01-0006. SVOC concentrations were low, and none exceeded the PALs. The maximum concentration detected was for 2-methylnaphthalene (580 µg/Kg).

Pesticides/PCBs

Nine pesticides and one PCB (Aroclor-1260) were detected in the outfall soil samples. PALs were exceeded for dieldrin and Aroclor-1260 in 2 of the 4 samples collected, in both samples collected at location CRP-SS01. Maximum concentrations were detected in sample CRP-SS01-0006.

Petroleum Hydrocarbons

Petroleum hydrocarbons as DRO were detected in all four samples, but at concentrations below the PALs. DRO were detected in each outfall soil sample with a maximum concentration of 170 mg/kg at CRP-SS01-0006. GRO were not detected in any of the outfall samples.

Metals

Twelve metals were detected at concentrations that exceeded PALs and/or RSLs. The following metals were detected at concentrations that exceeded PALs: antimony, arsenic, cadmium, cobalt, copper, lead, manganese, mercury, vanadium, and zinc. Several metals exceeded PALs in all four samples: arsenic, cobalt, lead, manganese, vanadium, and zinc. Aluminum and iron concentrations were higher than residential RSLs in all four samples collected; PALs are not established for these metals. Maximum metal concentrations were found most often in the sample from location SS01-0006.

4.2.1.3 MIS Soil Samples Collected at Former Firing Arcs

MIS soil sample analytical results are discussed in this section. All MIS samples were composite samples collected from 0 to 2 in bgs as described in Section 3.2.4 of this report. Three MIS samples were collected from each grid, and identified as A, B, and C. Table 4-1 presents a total of nine MIS sample results, three for ARC1, located on the northern extreme of the camping area, ARC2, located immediately south, and ARC3, located at the southern end of the camping area. The locations of the MIS sampling grids are presented on Figure 4-1.

MIS samples were analyzed for SVOCs and selected propellants. Detected concentrations were compared to PALs and residential RSLs. As described in Section 2.7.1.3 of the Work Plan, PALs for SVOCs in soil are the lower of RIDEM Residential DEC and EPA Eco-SSLs or ORNL Soil Eco-PRGs. For propellants, the PALs are the lower of the RIDEM Residential DEC or the ORNL Regional Screening Levels.

SVOCs

Eighteen SVOCs were detected in MIS samples. The following PAHs were detected in surface soil at concentrations that exceeded the PALs: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene. PAHs in these soils were higher than anticipated (benzo(a)pyrene

detected at concentrations up to 25,000 ug/kg) and the PAH distribution was similar to that found in surface soil samples collected at SB01 and SB09, where fragments of clay targets were noted.

The maximum SVOC concentrations were found in sample ARC1A, located on the northern end of the former firing range. Sample ARC3C, on the southern end of the former firing range, had the lowest detected SVOC concentrations.

Propellants

Nine MI composite surface soil samples were analyzed for three common propellants: 2,4-dinitrotoluene, 2,6-dinitrotoluene, and nitroglycerin. Nitroglycerin was detected in all nine composite samples. The nitroglycerin concentrations exceeded the PAL in the composite soil samples from Arc 1 and Arc 2. Nitroglycerin was detected in ARC3 samples at concentrations that exceeded the RSL but below the PAL. 2,4-dinitrotoluene was detected at trace concentrations in all three composite soil samples from ARC1 and in one of the composite soil samples from Arc 2 (CRP-SO-ARC2A). 2,6-dinitrotoluene was not detected in any MI soil sample. The maximum concentrations of 2,4-dinitrotoluene (0.16J mg/kg) and nitroglycerin (16J mg/kg) were both detected in sample CRP-SO-ARC1A.

4.2.1.4 Surface Soil Data Summary

Contaminants found above project action levels include SVOCs (mostly PAHs), PCBs, Metals, and nitroglycerine.

The elevated concentrations contaminants found in surface soil was dominated by the PAHs in the surface soil at the former firing areas (Camping Area). The presence of these PAHs is supported by the historic use of this area. Research indicates that clay targets were historically manufactured with petroleum pitch, which is blended with the clay. The findings of clay target fragments at SB-09, located at the Northern extreme of the ARC1 indicates that the PAHs in this area are a result of those targets. To date, there has been no identification of the launching tower where the targets were ejected, nor is there any indication of how this range managed their broken targets. However, broken targets could have been compiled in this area during the use of the site as a firing range. The concentrations of PAHs decreases from north to south in the area of the former firing arcs. This could be because of longer use of ARC1. Decreasing concentrations of propellants detected in surface soil from north to south also supports this possibility.

Presence of PCBs (Aroclor 1260) was limited to the surface soil at the gated storage area and at the outfall downgradient of this area. This indicates a possible historic release that was probably localized and is not indicative of the site as a whole.

Pesticides were found at four specific locations. DDT was found in surface soils at borings SB03 at the center of the site and SBO9 at the north end of the former firing area. Dieldrin was found in surface soil at SB10 and in the soils collected at the outfall location SS01. Other minor detections of pesticides were found not exceeding the PALs, and the highest concentrations of pesticides overall were found in the soil at the outfall where SS01 is located. This provides indication that any use or discharge of contaminants on the ground surface in this area were concentrated in storm drain outfalls as would be expected in areas where such drains exist.

Metals were found exceeding PALs in surface soil across the site. Many metals, such as aluminum, arsenic, manganese and iron are anticipated to be present as a result of natural mineral content of the soil, and others, such as cadmium, chromium, lead etc. may be present as a result of the former use of the southern portions of the property as an industrial storage area. In developed areas such as this, separation of natural mineral content from those present as a result of industrial use is difficult and requires detailed evaluation of local background soils.

Nitroglycerin was detected in all nine composite samples collected from the arcs, indicating that it has persisted in soil since the use of the site. Its presence is predictable due to former discharge of shotgun rounds.

A shotgun shell casing was found at the location of the surface soil sample SB09. A small metallic object that appeared to be electrical was observed at the location of surface soil sample SB01.

4.2.2 Subsurface Soil

This section presents the results of the subsurface soil sampling. Subsurface soils were collected from soil borings and test pits. The samples were analyzed for VOCs, SVOCs, pesticides/PCBs, metals, and petroleum hydrocarbons. Subsurface soil analytical results exceeding criteria are presented on Table 4.2.

4.2.2.1 Results from Samples Collected from Subsurface Soil Borings

The locations of the soil borings are depicted on Figure 3-1. Contaminant-specific concentrations are compared to PALs and residential RSLs. As described in Section 2.7.1.3 of the QAPP, PALs for soil are the lower of RIDEM Residential DEC and EPA Eco-SSLs or ORNL Soil Eco-PRGs.

Representative analytes exceeding these criteria are depicted on Figure 4-2. Representative analytes for subsurface soil were limited to benzo(a)pyrene and tetrachloroethene. Benzo(a)pyrene was selected as it is the most toxic of the PAHs detected. Tetrachloroethene was detected above RSLs in soil near the oil water separator. No other non-PAH organic compounds were detected above PALs in the subsurface soil.

Thirty-three subsurface soil samples were collected. Three subsurface soil samples were collected at each soil boring location; one sample was collected from the interval immediately above competent bedrock; one sample was usually collected just above the suspected water table; and a final sample was collected from the interval with the greatest contamination as determined by the PID, or from an interval between the water table and bedrock if no significant PID readings were recorded. Subsurface soil samples were collected from the same soil borings as the surface soil samples.

VOCs

Seventeen VOCs were detected in subsurface soil samples. Detected VOC concentrations were generally low, and none exceeded the PALs. Tetrachloroethene (PCE) was detected in all three soil samples taken from boring SB08, corresponding to elevated PID readings (Table 3-2). The PCE concentration in SB08-1214 and SB08-1416 exceeded the RSL for that compound (maximum concentration = 2100 µg/kg at SB08-1214). Boring SB08 is located at the oil-water separator at the southern end of the site. Boring SB04, located downgradient of the former drum storage area, has the most detections of VOCs (12) but none were present at concentrations above PAL or RSL criteria.

SVOCs

Thirty-three subsurface soil samples were collected and analyzed for SVOCs, which were detected in 19 of the 33 samples. The SVOC concentrations were generally low, and none exceeded the PALs. Concentrations of benzo(a)anthracene (300 J µg/kg) , benzo(a)pyrene (260 µg/kg), and benzo(b)fluoranthene (240 J µg/kg) exceeded the RSLs in one or two locations (SB06-0810 and SB09-0608) but did not exceed the PALs. Both of these subsurface soil samples were taken at the approximate location of the groundwater table.

Pesticides/PCBs

Thirteen pesticides and one PCB (Aroclor-1260) were detected in subsurface soil samples. None of the detected concentrations exceeded either the PALs or the RSLs. Aroclor-1260 was detected at a maximum concentration of 49 µg/Kg in sample SB11-0810, which is located on the northern portion of the drum storage area.

Petroleum Hydrocarbons

Petroleum hydrocarbons were detected in all thirty-three subsurface soil samples. No detected concentrations exceeded the PALs. DRO were detected in all of the subsurface soil samples with a maximum concentration of 170 mg/kg at SB10-0810 (located in the center of the gravel parking area). GRO were detected in five soil samples with a maximum concentration of 51 mg/kg at SB09-0608. GRO were detected in samples from soil borings SB01 and SB09, both of which are in the grassy area of the former firing range.

Metals

The following metals were detected in subsurface soil at concentrations that exceeded PALs: arsenic, beryllium, cobalt, copper, lead, manganese, nickel, vanadium, and zinc. Vanadium concentrations exceeded PALs at all thirty-three sample locations. Aluminum and iron were detected at concentrations that exceeded residential RSLs; PALs are not established for these metals.

Maximum metal concentrations were found most often in the sample SB09-3840, which is located on the northern end of the former firing range. The second-highest number of maximum metal concentrations was found in the sample SB05-3032, which is located adjacent to the railroad spur.

4.2.2.2 Results from Subsurface Soil Samples Collected from Test Pits

The results from test pit soil samples collected during the investigation are discussed in this section. The locations of the test pits where soils were collected are depicted on Figure 3-1. Contaminant-specific concentrations are compared to PALs and residential RSLs. As described in Section 2.7.1.3 of the QAPP, PALs for soil are the lower of RIDEM Residential DEC and EPA Eco-SSLs or ORNL Eco-PRGs.

Six subsurface soil samples were collected from test pits that were excavated as part of this site investigation. Three samples were collected from test pits excavated in the area of the oil-water separator, one sample was collected at each of the two test pits excavated in the areas estimated to be

where the former drain pits were located, and one sample was collected from test pit TP-06 in the south-western corner of the former drum storage area.

VOCs

One VOC, tetrachloroethene (PCS) was detected in the test pit samples (TP01A-0506; 2.5 J µg/kg). This low concentration did not exceed PAL or RSL criteria. TP01A-0506 was collected close to the sample SS-02 that was collected at the discharge pipe from this oil-water separator.

SVOCs

SVOCs were detected in 3 of the 6 test pit samples. Only at the sample collected from TP-06, located in the drum storage area, the SVOC concentrations exceeded PALs. The following SVOCs were detected at concentrations that exceeded PALs in sample TP-06: benzo(a)anthracene (10,000 J µg/kg), benzo(a)pyrene (9,400 µg/kg), benzo(b)fluoranthene (10,000 µg/kg), benzo(g,h,i)perylene (5,200 µg/kg), benzo(k)fluoranthene (4,300 µg/kg), chrysene (11,00 J µg/kg), dibenzo(a,h)anthracene (1,900 µg/kg), indeno(1,2,3-cd)pyrene (5,400 µg/kg), and pyrene (23,000 µg/kg). TP06 is located at the southwest corner of the former drum storage area, near pipe that is connected to the oil-water separator.

The concentration of benzo(a)pyrene (90J µg/kg) detected at TP01A exceeded the RSL but did not exceed the PAL.

Pesticides/PCBs

Eight pesticides and one PCB (Aroclor-1260) were detected in test pit samples. Detected concentrations were low and none exceeded PAL or RSL criteria. The maximum concentration of Aroclor-1260 (83 µg/kg), was detected at TP05-0102.

Petroleum Hydrocarbons

Petroleum hydrocarbons as DRO were detected in all six test pit samples. However, no detected concentrations exceeded the PALs. DRO were detected in all of the test pit samples with a maximum concentration of 430 mg/kg at TP06-0405. GRO were not detected in any of the test pits.

Metals

The following metals were detected in test pit soils at concentrations that exceeded PALs: arsenic, beryllium, cobalt, copper, lead, manganese, vanadium, and zinc. Manganese, vanadium, and zinc concentrations exceeded PALs in all six samples. Aluminum and iron were detected at concentrations that exceeded residential RSLs; PALs were not established for these metals. Maximum metal concentrations were found most often in the sample TP05-0102, which is located in the gravel parking lot, in the Gated Storage Area.

4.2.2.3 Summary of Subsurface Data

Analytical data from subsurface soil investigations show that the elevated concentrations of PAHs found on the surface soils in the Camping Area at the north end of the site do not extend into the subsurface soil. This further supports the likelihood of the source of the PAHs to be a result of a surface disposal in this area.

Traces of chlorinated solvents are noted in the area of the former oil water separator at the south end of the site. PCBs were not detected exceeding criteria at depth at SB02 and SB10 where elevated detections were found in the surface soil.

Although metals were detected above PALs and residential RSL, no discernable pattern indicating a contaminant source was noted. Arsenic was reported above the RIDEM criteria of 7 mg/kg, however, this is a common occurrence on Aquidneck Island. The soil type in this area is mostly Merrimack Sandy Loam, subtype A for 0-3% slopes (MmA) (USDA, 1981). The basewide background soil investigation (Tetra Tech July 2008) identified ranges and mean concentrations of metals for this soils of this type on Prudence Island, although they are not all compared to site concentrations in this SI report. However, it is noteworthy that arsenic concentrations reported in that background data set were below 7 mg/kg.

4.2.3 GROUNDWATER SAMPLE RESULTS

Groundwater samples were collected according to procedures outlined in Section 3.3.3, from eight newly-installed overburden monitoring wells, as shown on Figure 3-1. A total of nine samples were collected and analyzed for VOCs, pesticides/PCBs, TPH as GRO and DRO, and total and dissolved metals. Groundwater sample results were compared to PALs, which are based on federal MCLs and RIDEM groundwater objectives for GA aquifers. Results from groundwater analysis are discussed below. Analytical results can be found in Table 4-3. Analytes exceeding MCLs are presented on Figure 4-3. For samples locations where field duplicates were also taken, the two sample results were averaged and are

identified with the suffix “-AVG” in the analytical result table. Data validation memoranda are presented in Appendix D of this report.

VOCs

Detected VOC concentrations were generally low; however, three monitoring wells (MW-04, MW-06 and MW-08) contained trichloroethene (TCE), tetrachloroethene (PCE), and benzene at concentrations exceeding their PALs of 5 ug/L. TCE was detected in three samples taken at MW-04, MW-06, and MW-08, with the highest concentration detected, 28 ug/L, at MW-06. PCE was detected above the PAL at MW-04 and MW-08. The highest PCE concentration of 2,700 ug/L was detected in MW-08. Additionally, benzene was detected above the PAL at an average concentration of 16 ug/L in MW-08. At this location toluene and xylenes were detected at very low concentrations and ethylbenzene was not detected at all. This may indicate that the benzene is not the result of a fuel release.

While toluene and xylenes were also detected at this location, ethylbenzne was not. This may indicate that the benzene detections are not a result of a fuel release although they may be contributing to the GRO result.

Pesticides/PCBs

Four pesticides were detected at very low levels in MW-01, MW-05 and MW-07; none of the concentrations measured exceeded PALs. No PCBs were detected in groundwater samples.

TPH

Groundwater samples were collected and analyzed for TPH, as GRO (C5 to C12 hydrocarbons) and DRO (C9 to C36 hydrocarbons). GRO was detected at two wells (MW-04 and MW-08), with the highest concentration detected in MW-08, at an average concentration of 0.41 mg/L. As noted in the VOCs results, benzene was detected at MW-08, and while toluene and xylenes were also detected at this location, ethylbenzene was not, and the benzene concentrations were relatively high compared to toluene and xylenes. This may indicate that the benzene detections may not be a result of a fuel presence. At MW-04, the only benzene/toluene/ethylbenzene/xylene (BTEX) compound detected was toluene. MW-08 is located adjacent to the oil-water separator.

There is no PAL set for GRO. No DRO were detected in groundwater samples.

Metals

Groundwater samples were analyzed for both total and dissolved metals. Metals were detected in each of the nine samples collected; however, none of the concentrations exceeded PALs.

Summary of Groundwater Data

Groundwater samples contain elevated concentrations of VOCs, particularly trichoroethene, tetracholoroethene and benzene. These elevated concentrations were most frequently detected in wells in the southern storage area and downgradient of the drum storage area (MW-08 and MW-04).

4.2.4 SEDIMENT SAMPLE RESULTS

Sediment samples were collected at the locations shown on Figure 4-4. Sediment samples were collected from two zones: the skeet target area, which is within 300 feet of the shore, and the overshoot area, between 300 and 600 feet from the shore (Figure 1-3). Sediments were sampled in a grid pattern, with stations approximately 100 feet apart, as described in the Work Plan.

Sediment samples were collected from nine locations in the skeet target area and from 11 locations in the overshoot area. The samples were collected from the 0-6 in depth interval and the 6-12 in interval, as described in Section 3.4.2. A boat was used to access 18 of the sediment sample locations, while the nearest two sampling locations were accessible from the shore during low tide.

As described in Section 3.4.2 sediment samples were sieved prior to analysis. The samples were sieved in order to separate the lead pellets so that the abundance of pellets in the target area and overshoot areas could be determined and reported based on a number per square foot of the seafloor. The portions of the samples that passed through the No. 10 sieve (fines) were analyzed in accordance with the work plan and regulatory requests. Sieved samples collected from the skeet target area were analyzed for PAHs and metals while sieved samples from the overshoot area were only analyzed for metals.

Chemistry analytical results were compared to PALs as described in the Work Plan. PALs for sediment were the lowest of the following set of criteria: Toxicity Reference Values (EPA, 1999), Florida Threshold Effects (Florida Department of Environmental Protection, 1994), Oregon Tier II Chronic Values (Oregon Department of Environmental Quality, 2001), Apparent Effect Threshold (NOAA, 1999), Interim Marine Sediment Quality Guideline (Canadian Council of Ministers of the Environment, 2002), and Effects Range-Low benchmark for marine and estuarine sediments (Long, et al 1995). Analytical data compared

to the PALs are presented in Table 4-4. All analytes exceeding the PALs are depicted on Figure 4-4. Results of lead pellet counts are presented in Table 4-5.

For sample locations where field duplicates were also taken, the two sample results were averaged and are identified with the suffix "-AVG" in the analytical result tables located in Table 4-4.

4.2.4.1 Sediment Results - Skeet Target Area

The skeet target area spans approximately 750 feet along the shore and 300 feet into the Narragansett Bay (see Figure 3-3). A total of 15 samples were taken from nine locations (SD01 through SD09) in this area. Of these samples, nine were of surface sediments (0 – 6 in deep) and six were of subsurface sediments (6 – 12 in deep). Samples were analyzed for PAHs, metals, and lead pellet count.

PAHs

PAHs were detected in 10 of the samples collected, specifically at sampling locations SD01, SD02, SD04 through SD07, and SD09. While PAHs were detected at these locations, none of the detections exceeded PAL criteria.

Metals

Metals were detected in all of the 15 samples taken in the skeet target area. Of these samples, lead was detected at levels above the PAL (21 mg/kg) in the surface and subsurface sediments at all locations. The lowest concentration, 29.5 mg/kg, was detected in subsurface sediments at SD07, while the highest concentration of lead was detected at SD02 in the surface sediment, at a concentration of 424 mg/kg.

Seven additional metals were also detected above the PALs at SD01 and SD02. Maximum concentrations of arsenic, 19.4 mg/kg, and manganese, 2190 mg/kg, were detected at SD02 in the subsurface sediments. Maximum concentrations of copper, 207 mg/kg, and nickel, 47.4 mg/kg, were detected at SD01, in the surface and subsurface sediments, respectively. Zinc was detected at concentrations above the PAL (68 mg/kg) at SD01 and in the surface sediments of SD02, with the highest concentration detected at 99.7 mg/kg. Additionally, cobalt was detected above the PAL of 10 mg/kg in the subsurface sediments of SD01 and SD02 (18.8 mg/kg) and antimony above its PAL of 2 mg/kg in the subsurface sediments of SD01 (3.3 mg/kg).

Lead Pellet Count Analysis

Lead pellets were found at every sediment sample location in the skeet target area. Of the 15 samples taken in the skeet target area, pellets were detected in 14 of the samples. Pellet counts in the surface sediment samples collected in the skeet target area ranged from a maximum of 3,800 pellets/ft^2 at SD08, to a minimum of 32 pellets/ft^2 at SD02. At locations SD01 and SD02, located nearest to the shoreline, pellet levels exceeded the criterion but were the lowest values for the surface sediments in the skeet target area, with pellet concentrations increasing with distance offshore. Near-shore locations contained the most clay pigeon fragments; however, this could be attributed to wave and tidal action concentrating the fragments in this area, as these fragments tend to be less dense than the sand/gravel matrix that makes up the shoreline substrate.

Pellet counts in the subsurface sediment samples (depths greater than 6 in) collected in the skeet target area ranged from a maximum of 311 pellets/ft^2 at SD06 and SD09, to a minimum of 0 pellets/ft^2 at SD02. There were three locations, SD03 through SD05, where the 6-12 in interval could not be reached. This appears to be a result of less depositional sediment present at these locations. Similar to the surface sediments, abundance of pellets per square foot of surface area increased with distance from shore.

4.2.4.2 Sediment Results - Overshoot Area

The overshoot area spans an area of approximately 300 feet along the border of the skeet target area and beyond 600 feet into Narragansett Bay. For the SI, only the distance of the overshoot area up to 600 feet from the firing arcs was sampled. This area is presumed to include the area where most shot pellets fell after missing their target (see Figure 1-3). A total of 20 samples were collected, of which 11 were surface sediments (0 – 6 in deep), and nine were subsurface sediments (more than 6 in deep). Samples were analyzed for metals and lead pellet count.

Metals

Metals were detected in all 20 of the samples taken in the overshoot area; however, only 15 samples exceeded the PAL for lead (21 mg/kg). Lead was detected at locations SD10 through SD17. The highest concentration of lead was found in the subsurface sediments at SD11, with a concentration of 169 mg/kg. The lowest concentration detected above the PAL for lead was in the subsurface sediments at SD13, with a concentration of 23.5 mg/kg. None of the other metals analyzed exceeded PALs for the site.

Lead Pellet Count

Pellets were found at every sediment sample location, though not at all depth intervals. Of the 20 samples taken in the overshoot area, pellets were detected in 18 of the samples. Pellet counts in the surface sediment samples collected in the overshoot area ranged from a maximum of 6,128 pellets/ft^2 at SD11, to a minimum of 0 pellets/ft^2 at SD018 and SD20. Within the overshoot area, pellet concentrations are highest at the sediment sample locations closest to shore and lowest at the sample locations at the most distant samples from the firing arcs. Both of the locations that had 0 pellets in the overshoot area are located in the furthest sample row from the shoreline, with only one location, SD19, in that row being above the site action level. This row is located approximately 600 feet from the firing points of the shooting arcs; it was expected that shot pellets used for clay pigeons would not be able to maintain velocity to travel beyond this distance.

Pellet counts in the subsurface sediment samples collected in the skeet target area ranged from a maximum of 3,281 pellets/ft^2 at SD11 to a minimum of 6 pellets/ft^2 at SD18, SD19 and SD20. All subsurface samples collected in the last row of the sampling grid (SD18, -19 and -20) were below the action level of 10 pellets/ft^2. There were two locations in the overshoot area where the 6-12 in interval could not be reached, SD12 and SD17. Similar to the 0-6 in interval, the concentration of pellets decreased with distance from the shore. Five of the nine locations where both intervals were sampled, the 6-12 in interval had a higher concentration of pellets than in the 0-6 in interval (SD13, SD14, SD16, SD18 and SD20). This may be a result of higher sediment deposition rates in the deeper water, further from shore.

4.2.4.3 Summary of Sediment Data

The following contaminants were detected at levels exceeding the site PALs in the surface and subsurface sediments: lead, arsenic, copper, manganese, nickel, zinc, cobalt, and antimony. It appears that, aside from lead, metal contamination is limited to the skeet target area at locations SD01 and SD02. These two locations are closest to the shore, and are accessible during low tide. Lead appears to be present above PALs at nearly all sampling locations, though concentrations do not exceed PALs in the last row of the sampling grid (SD18, -19 and -20) in either surface or subsurface intervals and in surface sediments at SD13. The highest concentrations of lead are located in the middle of the area sampled, though there is no clear correlation between concentration levels and sampling intervals. The highest lead concentration found in the surface sediments of 424 mg/kg is at SD02, and the highest lead concentration found in the subsurface sediments of 223 mg/kg is at SD01.

Although not always found at both sample intervals, lead pellets were found at every sediment sample location. Three samples did not contain any lead pellets, and an additional three samples contained lead pellets at concentrations below the site action level of 10 pellets/ft^2. Areas with the highest lead pellet concentrations occur in the middle of the sampling area (distant portions of the target area and closer portions of the overshoot area), with the highest pellet concentrations for surface and subsurface sediments existing at SD11, of 6,128 pellets/ft^2 and 3,281 pellets/ft^2, respectively. While this location does not contain the highest levels of lead, compared to the rest of the locations sampled, there does appear to be a correlation between lead concentrations and pellet concentrations detected in the sediments.

The extent of lead in sieved samples appears to have been delineated with respect to distance from the shore; however, it is unclear how far lead in sieved samples or lead pellets extends tangential to the shoreline.

5.0 CONTAMINANT BEHAVIOR IN THE ENVIRONMENT

This section has been prepared to describe the major contaminants and contaminant groups that have been detected at the MRP Site 1, Carr Point, in relation to their expected behavior in the site-specific environment, given the available information on current environmental conditions at the site. A general discussion of contaminant behavior in the environment is presented, rather than a detailed analysis of chemical fate and transport. Much of the information presented in this section is based on the chemical properties of the contaminants that have been found at the site and the basic processes that are likely to act on the contaminants when released to the environment.

Contaminant behavior in different environmental media is determined by a variety of factors. The physical and chemical properties of the contaminants and the properties of the environmental medium into which the contaminants are released (i.e., soil, groundwater, surface water, or sediment) are some of the factors that determine the eventual fate of these chemicals. A site-specific example is that the PAHs present at the site appear to be associated with clay from shooting targets, and are likely to behave differently in the environment than would PAHs occurring in a release as liquid chemicals. Similarly, lead shot pellets present in marine sediments have degradation characteristics that would be different from those expected in another environment.

5.1 GENERAL FATE AND TRANSPORT PROCESSES

The fate and transport processes considered in this section are those that govern the migration and fate of contaminants (once released or deposited) in soil and groundwater, and in surface water and sediment in a coastal marine environment. This generalized discussion of fate and transport processes is provided so that the observed site-specific contamination conditions can be better characterized and understood.

5.1.1 General Fate and Transport Processes of Soil Contaminants

Organic and inorganic chemicals can be released to soils directly through spills or discharges at the surface or beneath the surface (i.e. via subsurface storage tanks or drains) or through deposition of atmospheric or airborne contaminants. Once organic and inorganic chemicals are released to soils, a variety of processes may occur that may cause them to become immobilized, degraded, or to be mobilized to another environmental medium. Some of these processes include:

- **Sorption** – Chemicals may be taken up and held on soil particles by adsorption (sticking to a particle surface) or absorption (diffusion into the particle). Chemicals may sorb directly to the soil grains or to organic or metal oxyhydroxide coatings on the grains. The degree of sorption of a

particular chemical in the environment is controlled by both soil properties (i.e., organic carbon content, metal oxyhydroxide content, clay content, or specific surface area) and by chemical properties (i.e., partition coefficients, solubility, polarity).

- **Volatilization** – Chemicals having high Henry's Law coefficients or vapor pressures will readily volatilize into the ambient air rather than remain adsorbed to the soil particles. Once in the atmosphere, the chemicals may undergo further transport through additional processes such as advection, diffusion, or dispersion. The chemicals may also be transformed through chemical processes such as photolysis or hydrolysis.

- **Leaching** – Chemicals may be transported downward through the soil strata by liquids that infiltrate through the soils or by water from precipitation. Chemicals released to or transported into soils beneath the groundwater surface may be leached from the soils by groundwater and transported downgradient in groundwater. The leaching of chemicals from soils and their subsequent mobilization are controlled by soil properties (i.e., adsorptive capacity, organic carbon content, clay content, or specific surface area) and by chemical properties (i.e., solubility, ability to partition to other phases).

- **Runoff/Erosion** – In situations where the chemicals remain sorbed (bound) to soil particles, chemicals may still be mobilized from one contaminated area to another or to other environmental media. Contaminants sorbed to soil particles can be conveyed over land suspended in runoff that occurs during precipitation events or through the wind erosion of contaminated soils. Contaminants sorbed to surface particles may also become solubilized in rainwater or snowmelt and be conveyed over land dissolved in the precipitation runoff.

5.1.2 General Fate and Transport Processes of Groundwater Contaminants

Organic and inorganic chemicals may be directly released to groundwater from subsurface tanks or drainage structures or may be transported into groundwater from other media. Once in groundwater, a variety of processes may occur that affect the transport and transformation of contaminants. This section describes the physical phases of contaminants in groundwater and the general transport and transformation processes affecting contaminants in groundwater.

Physical Phases of Contaminants in Groundwater

Contaminants occur in groundwater in two principal physical phases: dissolved (disassociated molecules) and suspended solids (adsorbed to mobile particles). These physical phases dictate how contaminants

are transported and changed within the aquifer. The two phases and the fate and transport processes that govern them are described below:

- **Dissolved Phase** - Dissolved aqueous phase organic and inorganic contaminants generally migrate in the direction of groundwater flow. Three processes transport dissolved-phase contaminants: advection, mechanical dispersion, and molecular diffusion. These processes are presented in more detail below. In addition, dissolved contaminants may interact with both the aquifer matrix and other groundwater constituents during transport. A variety of chemical, physical, and biological interactions can significantly retard or accelerate the rate of dissolved contaminant transport, or transform the contaminants into other chemicals or states.

- **Suspended Solid Phase** - Metals and some organic compounds can migrate through aquifers as suspended solids, either in insoluble form or adsorbed to small particles. Research has demonstrated that, depending on the nature of the geologic formation, clay- and silt-sized particles in the colloidal range (0.001 micron to 1.0 micron) can migrate through an aquifer with the groundwater, and that certain organic compounds and metals can be retained on the colloid surfaces through surface charge attractions. The low-flow sampling methods used to collect the groundwater samples evaluated in this RI are designed to obtain samples that include the colloids that would be transported with the groundwater, but exclude the larger particulates that would be introduced from a disturbance in the well caused by sampling.

General Transport and Transformation Processes of Contaminants in Groundwater

The major contaminant transport processes in groundwater (advection, dispersion, and molecular diffusion) and important transformation and retardation processes (degradation and sorption) are described below:

- **Advection** – Advection is the dominant contaminant transport process in groundwater. Advection is the flow of a fluid in response to a gradient, such as pressure or hydraulic head; contaminant transport results from the entrainment of the chemicals in the flow field. Advective transport of contaminants consists of the movement of dissolved or suspended contaminants with the bulk flow of the groundwater. Under conditions where the only contaminant transport mechanism is advection, the rate and direction of advective transport coincide with the rate and direction of groundwater flow. However, the secondary transport and transformation processes described below may slow the rate of transport and spread the contaminants over a wider area than indicated by advective transport alone.

In non-ideal aquifer systems, preferential pathways for groundwater flow may occur because of heterogeneities in the subsurface soils or the bedrock matrix, or because of the presence of subsurface structures such as pipelines. Geologic materials (soils or bedrock fractures) that are more permeable than surrounding materials allow the preferential flow of groundwater through those geologic units. Similarly, gaps between a subsurface conduit and the surrounding soils or the presence of bedding materials that are more permeable than the surrounding soils may create preferred pathways for groundwater flow along the direction of the conduit.

- **Mechanical Dispersion** - Mechanical dispersion is a mixing process that results from velocity variations within bodies of moving fluids. In groundwater environments, variable velocity regimes are caused by irregularities in the aquifer media, and these irregularities exist at a variety of scales. For example, velocity variations at the microscopic scale arise from: 1) fluids moving faster through the centers of pores than along the edges; 2) fluids moving faster through large pore spaces than through narrow ones; and 3) some fluid particles following more tortuous flow paths than others as they travel around individual soil particles. At the macroscopic scale, velocity variations result from the presence of layers or lenses of materials having different hydraulic conductivities.

  The mixing due to dispersion increases as aquifer heterogeneity increases, and it results in the dilution of a solute body as contaminated water mixes with uncontaminated water along the margins of a plume. Dispersion also results in the spreading of a contaminant plume over a larger area (both parallel and perpendicular to the direction of flow) than would be expected from advection alone.

- **Molecular Diffusion** - Molecular diffusion is movement in response to a concentration gradient. Dissolved contaminants will move from areas of high concentration to areas of low concentration within an aquifer even if the groundwater is not moving, because the process is driven by the random thermal motion of the contaminant molecules. Diffusive transport is a slow process compared to the more rapid processes of advection and dispersion, and its impact on plume geometry is usually small. Diffusion is typically the dominant transport mechanism only in low-permeability hydrogeologic systems.

- **Sorption** – As described above relative to contaminant transport in soils, chemicals may be taken up and held on soil particles by adsorption (sticking to a particle surface) or absorption (diffusion into the particle). Both of these processes are known collectively as sorption. Sorption is an important process in contaminant transport in groundwater because most groundwater contaminants react to some extent with the aquifer's solid surfaces. Consequently, their transport

is affected not only by the processes of advection, dispersion, and diffusion, but also by sorption reactions that retard the rate of contaminant transport. Contaminant sorption to mineral surfaces or the oxyhydroxide or organic coatings on these surfaces cause the contaminants to be removed from the groundwater, at least temporarily, thereby retarding the rate of contaminant transport. The extent to which the movement of a contaminant is retarded relative to the rate of groundwater flow depends on the solute's propensity to sorb to the aquifer's surfaces. Weakly sorbed contaminants will tend to repeatedly adsorb and desorb, continuing to flow with groundwater at a reduced rate. Strongly sorbed contaminants will tend to remain sorbed to the soil particles and remain out of the groundwater flow field. The propensity to sorb is governed by many factors including the chemical characteristics of the solute, the composition of the aquifer's solid surfaces, and the groundwater chemistry.

- **Biological Degradation** – The degradation of organic contaminants in groundwater can occur by biotic (biological) and abiotic (non-biological) means. In biological degradation (biodegradation), microorganisms use available carbon sources (i.e. organic contaminants or naturally occurring organic compounds) to obtain needed energy and nutrients through reduction-oxidation (redox) reactions. This involves the transfer of electrons from the food/energy source to an electron acceptor such as oxygen or nitrate. Thereby, the energy source (typically the contaminant or a naturally occurring organic compound) is oxidized and the electron receptor is reduced. Depending on the microorganisms and contaminants present, biodegradation can occur in groundwater under either aerobic or anaerobic conditions. In both cases, the microorganisms need the right conditions to thrive, including adequate sources of food (carbon), electron acceptors (such as oxygen or nitrate), and essential nutrients (various minerals).

  Under aerobic conditions, carbon (as either anthropogenic or naturally occurring organic compounds) is oxidized by microorganisms to provide a net energy gain that is necessary for their growth and reproduction. Dissolved oxygen is used as the primary electron acceptor by the aerobic microorganisms. Low-molecular weight and highly water soluble organic compounds are most readily degraded by aerobic microorganisms. The rate of biodegradation generally decreases for higher molecular weight compounds; those with lower water solubility; and molecules with more complex chemical structures including aromatic rings, branching, or halogen atoms (Hemond, 1994).

  After the oxygen in a system is depleted, anaerobic biodegradation becomes the predominant degradation mechanism. Anaerobic microorganisms typically use other available electron acceptors including nitrate, sulfate, ferric iron, and carbon dioxide. The redox reaction results in these electron acceptors being transformed to a reduced state. For example, nitrate is converted

to nitrite, nitrous oxide, or nitrogen gas; sulfate to sulfide; ferric iron (Fe^{3+}) to ferrous iron (Fe^{2+}); and carbon dioxide to methane. In some cases, the chlorinated hydrocarbon can be used as the electron acceptor.

Aerobic biodegradation is the primary mechanism for biodegradation of petroleum hydrocarbons. Petroleum hydrocarbons can also be degraded anaerobically, but anaerobic degradation typically occurs at a significantly lower rate than aerobic biodegradation.

- **Abiotic Degradation** - Mechanisms of abiotic degradation include hydrolysis, photolysis, chemical oxidation, and chemical reduction. Subsurface contaminants may be degraded or transformed by these naturally-occurring abiotic processes. Hydrolysis is the process where a chemical molecule and a water molecule are both split and recombine to form new chemicals. Chemical oxidation consists of the loss of electrons by an organic compound or a metal ion to break down or transform the compound. Photolysis is the chemical process by which molecules are broken down into smaller units through the absorption of light, typically yielding electrons. Chemical reductions are the chemical reactions whereby an organic compound or a metal gains electrons. The dominance or effectiveness of these transformation processes is governed by factors such as temperature, pH, conductivity, solubility, and chemical concentration.

5.1.3 General Transport Processes of Contaminants in Sediment and Surface Water

The transport processes of contaminants in sediment and surface water are generally the same as those observed controlling contaminant migration through soils and groundwater. These processes, as discussed in the previous sections, include advection, mechanical dispersion, molecular diffusion, biological and abiotic degradation, and sorption.

The surface waters present at Carr Point are restricted to an intertidal and subtidal coastal beach. The intertidal area is a stone and cobble shoreline which is active and maintains oxygenated sand and gravel. The subtidal area is less active and is characterized by a shallow oxygenated zone up to approximately four inches in thickness or less, and an anaerobic zone below. Surface water is saline, and it is assumed that freshwater is transferred from the shoreline overburden through the marine sediment to the salt water above via hydrostatic pressure.

As in groundwater, contaminants occur in surface water in both dissolved phase and sorbed to particles. These physical phases dictate how contaminants are transported and changed within the water body. Contaminant transformation in surface water occurs by the same processes affecting groundwater

contaminants (biological and abiotic degradation, and sorption); however photolysis (an abiotic degradation mechanism), is typically more significant in surface water than groundwater.

Once entrained in the water column, suspended sediments are subject to the transport mechanisms governing the surface water. In addition to advection driven by hydraulic gradient, as observed in groundwater transport processes, surface waters are also subject to wind-driven advection. Wind may create surface currents or drift in one direction which could, in turn, cause return currents at deeper levels.

Sediments may precipitate or settle out depending on the flow velocities of the surface water and the suspended solid particle mass. With respect to the suspended solid particle mass, the rate of settling is influenced by the grain size, mineralogy, and chemistry of the suspended solid particle. Once part of the sediment bed, the settled particle can be eroded and transported when the shear stress exerted on the bed by surface water flow exceeds a critical minimum shear value. The critical shear stress also varies according to sediment size, mineralogy, and chemistry. If sediment is deposited in locations where the critical shear stress is not exceeded, or is exceeded only infrequently, then the sediment will slowly consolidate as it accumulates, increasing in both density and strength. As bed density increases, the stress threshold for erosion increases and the sediment deposit becomes more stable and less likely to be eroded by natural forces.

Sediment particles, either in the suspended or depositional state, can undergo chemical transformation through molecular diffusion and degradation, either abiotic or biotic, similar to saturated soils. In addition, the geochemical conditions of the surface water can influence the state in which chemicals exist, either in an insoluble state or in a dissolved state, or cycling back and forth between the soluble and insoluble states.

5.2 FATE AND TRANSPORT CHARACTERISTICS OF SITE CONTAMINANTS

This section presents brief profiles of significant individual contaminants or contaminant groups detected at MRP Site 1, Carr Point. The profiles provide information which can be evaluated in relation to potential sources of the contaminants and their behavior in the environment. The contaminants are presented by chemical class. Prior to each chemical class profile, a brief summary of related contaminants detected at the site is presented.

5.2.1 Volatile Organic Compounds (VOCs)

Several VOCs were detected in soil and groundwater.

In surface soil (the 0 to 2 ft interval) three VOCs were reported infrequently and at low concentrations, including two common laboratory contaminants, acetone and methylene chloride, and the chlorinated ethene compound, PCE. PCE was detected at a trace concentration in only one surface soil sample: 1.1 J µg/L in sample SS02, from 6 to 12 in bgs. This sample is from an outfall pipe location in the oil-water separator area.

In subsurface soils (below 2 ft bgs), a total of 16 VOCs were detected, including three common laboratory contaminants, 2-butanone, acetone, and methylene chloride. The PALs for VOCs were not exceeded in any soil sample. The only VOC soil criterion exceeded was the RSL for PCE, at SB08, located near the oil-water separator. A trace level of PCE was also detected in one sample from TP-01A, also in the area of the oil-water separator.

Of the remaining 12 VOCs, ten were detected just once and only at low concentrations that did not exceed criteria. Nine of these VOCs were detected at SB04, downgradient of the former Drum Storage Area, in the soil sample collected from 4 to 6 ft bgs, above the water table at this location. The VOCs detected at low concentrations in this sample include several BTEX compounds as well as cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride. Neither PCE nor trichloroethene (TCE) were detected.

The three VOCs detected in more than one subsurface soil sample include PCE (discussed above), TCE, and chloroform (only trace levels of chloroform were reported in three soil locations), as described in Section 4.2.2.

In groundwater, in addition to the common laboratory contaminant acetone, ten VOCs were detected infrequently (at up to three of the eight sample locations). Only three compounds exceeded criteria in groundwater: TCE, at all three well locations where it was detected, MW04, MW06 and MW08; PCE, at two wells, MW04 and MW08 (a trace level of PCE was also detected in groundwater at MW06); and benzene, at MW08 only (a trace level of benzene was also detected at MW05). The maximum number of detections of any VOC was at three locations, for PCE, TCE and chloroform (Section 4.2.3).

Brief profiles of the three VOCs that exceeded criteria in groundwater at the site, one of which also exceeded the RSL in one subsurface soil sample, are presented below.

Tetrachloroethene (PCE), also known as tetrachloroethylene and perchloroethylene, is a manufactured organic chemical that is widely used for dry cleaning of fabrics and for metal-degreasing. PCE is a colorless liquid at room temperature, it is nonflammable, and evaporates easily into the air. It is a chlorinated aliphatic compound that is soluble in water (to a limit of approximately 200 mg/L) and has a relatively weak tendency to sorb to soil particles. PCE is miscible in hydrocarbons, oil, alcohol, chlorinated

solvents, and most common organic liquids. PCE's relatively high vapor pressure and low affinity to soil indicate that if released to soil, it will evaporate rapidly into the atmosphere and can leach rapidly through soil and into groundwater. PCE can occur as a dense, non-aqueous phase liquid (DNAPL) because it has a high density, low solubility in water, and it adsorbs onto carbon. Because PCE is denser than water and because of its other properties, a sufficiently large spill of PCE would be expected to sink through the water column until encountering a lower permeability barrier. It can be found in the subsurface as highly concentrated free product, as fingers of residual saturation moving more or less vertically through the saturated zone, and/or as dissolved molecules in groundwater. Biodegradation may be an important, but slow, process for transformation of PCE. Biodegradation of PCE in groundwater may occur under anaerobic, highly reducing conditions by the process of reductive dechlorination. Reductive dechlorination would result in breakdown of PCE to TCE, cis-1,2-dichloroethene, vinyl chloride, and ethene or ethane. PCE should not hydrolyze under normal environmental conditions.

Trichloroethene (TCE), also known as trichloroethylene, is a man-made chemical not known to occur naturally. It is mainly used as a solvent in industrial degreasing and cleaning of metals, but has numerous other applications. TCE is a colorless, highly volatile liquid, and is also a biodegradation product of PCE. It is a chlorinated aliphatic compound that is even more soluble in water than PCE (to a limit of approximately 1,100 mg/L) and has a relatively weak tendency to sorb to soil particles. Like PCE, TCE is miscible in hydrocarbons, oil, alcohol, chlorinated solvents, and most common organic liquids. Its relatively high vapor pressure and low affinity to soil indicate that if released to soil, it will evaporate rapidly into the atmosphere and can leach rapidly through soil and into groundwater. TCE can occur as a DNAPL because it has a high density, low solubility in water, and it adsorbs onto carbon. Because TCE is denser than water and because of its other properties, a sufficiently large spill of TCE would be expected to sink through the water column until encountering a lower permeability barrier. It can be found in the subsurface as highly concentrated free product, as fingers of residual saturation moving more or less vertically through the saturated zone, and/or as dissolved molecules in groundwater. Biodegradation may be an important, but slow process for transformation of TCE in the subsurface. TCE may biodegrade in groundwater under either anaerobic or aerobic conditions: anaerobic biodegradation by reductive dechlorination or aerobic biodegradation by cometabolic oxidation. Cometabolic oxidation is less effective than reductive dechlorination for degrading TCE. Reductive dechlorination would result in break down of TCE to cis-1,2-dichloroethene, vinyl chloride, and ethene or ethane. Cometabolic oxidation would result in rapid breakdown of TCE to an innocuous organic compound, without the formation of less chlorinated intermediates. TCE is not hydrolyzed by water under normal environmental conditions.

Benzene is a clear, colorless, organic liquid with a sweet odor and is highly flammable. It is an aromatic hydrocarbon compound that is soluble in water (to a limit of approximately 1,780 mg/L) and has a relatively weak tendency to sorb to soil particles. Its relatively high vapor pressure and Henry's law

constant and relatively low solubility indicate a tendency to volatilize from liquid to air very quickly. Benzene is formed both through natural processes and through manufacturing. It is a natural part of crude oil and gasoline; also, trace amounts of benzene may result from incomplete combustion of carbon-based materials. Benzene is used to make some types of rubbers, lubricants, dyes, detergents, drugs and pesticides. Some industries use benzene to make other chemicals which are used to make plastics, resins, and synthetic fabrics like nylon and polyester. Benzene has also been used as a solvent in printing, paints and dry cleaning, but this use is declining, coincident with the replacement of benzene with other organic solvents. Benzene is emitted into the workplace and the environment from industrial and other manmade sources, including gasoline from filling stations and auto exhaust.

If benzene is released to soil it can evaporate very quickly and/or leach to groundwater. Since benzene is less dense than water, large releases would have a tendency to stay near the groundwater surface rather than migrate deep into the aquifer. Biodegradation may be an important process for breakdown of benzene in the subsurface. Aerobic biodegradation is the primary mechanism for biodegradation of petroleum hydrocarbons, such as benzene. Petroleum hydrocarbons can also be degraded anaerobically, but anaerobic degradation typically occurs at a significantly lower rate than aerobic biodegradation.

5.2.2 Semi-Volatile Organic Compounds (SVOCs)

SVOCs detected in surface and subsurface soils were primarily PAH compounds. Considering all surface soil samples together (0 to 2 ft deep), 21 different SVOCs were detected, 17 of which are PAHs. The majority of PAH criteria exceedances at the site were in surface soil samples, where both PALs and/or RSLs were exceeded in some samples. In subsurface soils, 18 SVOCs were detected and all but three are PAHs. Concentrations of PAHs in subsurface soils were generally low, much lower than those found in surface soil, and only two locations exceeded an RSL. No subsurface soil samples exceeded PALs. The distribution of PAHs in soil indicates that they are primarily associated with the makeup of the clay in the skeet targets that were used at the site, and likely deposited as fragments on the ground surface.

In sediment samples analyzed for PAHs, low concentrations of up to 14 PAHs were detected in one or more sediment samples, none exceeding PALs.

PAHs – The class of chemicals known as polycyclic aromatic hydrocarbons (PAHs) are represented at this site primarily by benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene and pyrene. Most commonly, this group of contaminants is found in coal tar, pitch, petroleum, and also as ubiquitous products of incomplete combustion. However, the previous use of this site, the observations of

clay skeet targets in the samples themselves, and the horizontal and vertical distribution pattern of elevated PAHs in site soils indicate that the majority of high PAH concentrations (>100mg/kg) in soil samples collected at this site are due to the presence of the skeet targets in the associated areas.

Clay skeet targets are known to be formulated with petroleum products. Original skeet targets were made with coal tar, pitch and clay. The Remington Arms Co. Material Safety Data Sheet (MSDS) dated 1994 stated that trap and skeet targets sold under the name Blue Rock® are a combination of 67% dolomitic limestone and 32% petroleum pitch, fused together through heat and pressure. More recently, "standard clay" targets have become more popular, as they biodegrade more easily and contain no PAHs.

Testing on older clay targets found on other firing ranges have found high concentrations of the PAHs noted above. However, the manufacturers have shown that the material does not break down readily, and thus does not move through the environment. PAHs from pitch fused with the limestone appear to be very stable and are not likely to leach into the surrounding media.

PAHs are typically noted as a result of incomplete combustion and associated with petroleum products. PAHs released to the ground surface with a chemical or petroleum release will adhere to soil particles and then travel with erosion and runoff. Asphalt surfaces tend to break down and provide fine-grained sands with PAHs from the asphaltic binder. PAHs provided to the atmosphere as soot or unburned fuels will move as suspended particles until they are deposited into soil or water and become bound within the sediment matrix. Because PAHs were not found at high concentrations in all sediment and soil samples, but rather found mostly co-located with fragments of clay targets, the PAHs at this site are more clearly attributable to the deposits of broken/used and unrecovered clay targets. Subsurface soil, sediment and groundwater data indicate that the PAHs are stable within the surface soils in which they were found, and they do not appear to be migrating in the environment.

5.2.3 Pesticides

In surface soil samples (soils collected within 0 to 2 ft bgs), 15 pesticides were detected, two at concentrations that exceeded one or both criteria at two locations each. Dieldrin exceeded the PAL and the RSL at SS01 (0 to 6 in and 6 to 12 in bgs) and at SB10 (0 to 1 ft bgs). SS01 is an outfall location where elevated PCBs and lead were also observed, and SB10 is in the area of the suspected former drain pit, where elevated PCBs, the maximum copper level, and somewhat elevated arsenic and lead were also observed. The PAL for 4,4-DDT was exceeded at SB09 and SB03. The surface soil at SB09, in the firing area, also had elevated PAHs, DRO and lead.

Considering all subsurface soil samples (samples below 2 ft bgs, including borings and test pits), 15 pesticides were detected, many of which overlapped with those detected in surface soils. In subsurface soil samples, neither PALs nor RSLs were exceeded for any of the detected pesticides.

In groundwater, only trace levels of four pesticides were detected, at concentrations near or below detection limits.

Pesticides generally have low water solubility and high solubility in most organic solvents. They have very low vapor pressures and Henry's law constants and moderate sorptive capacity. The importance of biodegradation as a transformation process varies among pesticides. Some, such as dieldrin, are generally resistant to biodegradation, others, such as heptachlor, may biodegrade at a slow rate under anaerobic conditions.

5.2.4 Polychlorinated Biphenyls (PCBs)

At MRP Site 1, Carr Point, only PCB Aroclor-1260 was detected in both surface and subsurface soil, but not in groundwater. In surface soil, Aroclor-1260 exceeded the RSL and the PAL at three locations: SB02, SB10, and at storm drain outfall SS01 (at both 0 to 6 in and 6 to 12 in bgs). In subsurface soil (below 2 ft bgs, including boring and test pit samples) none of the detected concentrations of Aroclor-1260 exceeded either the RSL or the PAL.

The presence of elevated concentrations of PCB as Aroclor-1260 in surface soils from SB02, SB10 and SS01 indicates that a PCB release may have occurred in this area. Historical information shows that this area was used for storage of transformers between the 1980s and the 1990s.

Elevated levels of PCBs were not detected in any other soil sample. Because PCBs are nearly insoluble in water and sorb strongly to soil, it is common to find that PCBs released to the ground surface remain in surface soils, and that most of the PCB mass in soils likely remains bound in the soils and is expected to remain immobile, as discussed below.

PCBs are a group of synthetic organic chemicals that contain 209 individual compounds (known as congeners). Mixtures of PCB congeners, called Aroclors, were manufactured for use in industry as coolants and lubricants in electrical equipment before their manufacture in the United States was ended in 1977 due to evidence that PCBs build up in the environment and may cause harmful effects. They have been used in closed systems such as heat transfer liquids, hydraulic fluids and lubricants, and in open systems such as plasticizers, surface coatings, inks, adhesives, pesticide extenders, and for micro

encapsulation of dyes for carbonless duplicating papers. Aroclor-1260 is a colorless, liquid PCB mixture with an average chlorine content of 60%.

PCBs are inert, thermally and physically stable, and have dielectric properties. PCBs are only slightly water soluble and are strongly sorbed to soil. PCBs tend to remain immobile and sorbed to soil when leached with water; however, in the presence of organic solvents they may leach from soil. PCBs are resistant to biodegradation, although they may biodegrade slowly under some conditions. PCBs are also resistant to chemical degradation by oxidation or hydrolysis.

5.2.5 Metals

Analysis of site soils and sediments indicated the presence of numerous metals at concentrations exceeding the corresponding PALs and/or RSLs. Groundwater samples, however, did not exceed metals criteria in either total or dissolved metals samples.

Surface soils (at borings and outfalls) consistently had the highest number of metals present at levels exceeding PALs at all sample locations, in comparison to subsurface soils and sediments. Six metals exceeded PALs at all surface soil sample locations, as follows: arsenic, cobalt, lead, manganese, vanadium and zinc. Of these six metals, vanadium also exceeded the PAL at every subsurface soil location, and of the remaining five metals, all but lead exceeded the PAL at most subsurface soil locations. Many other metals were also detected at many locations at concentrations exceeding PALs, as discussed in Section 4.

However, in comparing the PAL values with background values presented in the Basewide Background Study Report (TtNUS, 2008), it is noted that for vanadium, the PAL value is well below the corresponding mean background concentrations for both surface and subsurface soils within the same soil type (MmSS), and is even below the minimum values presented in the range of detections. Also, the PAL for manganese is below the mean background concentration calculated for subsurface soils.

The metal, lead, has an associated RSL (400 mg/kg) which is significantly higher than the PAL (11 mg/kg), and this value was also exceeded in three surface soil sample locations. The maximum concentration for lead (as well as for arsenic and for PCBs) was from SB02 surface soil. Lead also exceeded the RSL in surface soil at SB09 (in the firing area) and at SB01 (in the target area). Very high levels of DRO and PAHs were also detected at SB09, and at much lower levels at SB01.

Aluminum and iron have no PALs, but exceeded the RSLs in the majority of surface and subsurface soil samples. However, it is noted that the RSLs for aluminum and iron are both lower than the corresponding mean background concentrations within the same soil type (MmSS).

In sediments, lead exceeded the PAL at all sample locations in the Target Area, in both surface and subsurface sediments. At SD01 and SD02, arsenic, copper, manganese, nickel and zinc exceeded the PAL in all or nearly all surface and subsurface sediment samples. In the Overshoot Area sediments, the only metal that exceeded the PAL was lead, exceeding in 15 of the 20 sediment samples from this area.

Many metals occur naturally in soils, sediments and groundwater, at varying concentrations that are typically related to the composition of bedrock in the area that is generally the original source material. With the exception of some metals, including lead and arsenic in some areas, the distribution of metals in site media suggests that their presence is largely not site-related. As discussed previously, some elevated concentrations of lead in site media are related to the former site use as a skeet shooting area.

The characteristics of the metals most frequently detected above RSLs and above background concentrations are described below.

Arsenic is a naturally occurring element widely distributed in the earth's crust. In the environment, arsenic is combined with oxygen, chlorine, and sulfur to form inorganic arsenic compounds. Arsenic in animals and plants combines with carbon and hydrogen to form organic arsenic compounds. Inorganic arsenic compounds are mainly used to preserve wood. Organic arsenic compounds are used as pesticides, primarily on cotton plants. Arsenic cannot be destroyed in the environment: it can only change its form. Arsenic in air will settle to the ground or is washed out of the air by rain. Many arsenic compounds can dissolve in water. The toxicity of inorganic arsenic depends on its valence state and also on the physical and chemical properties of the compound in which it occurs.

Arsenic exists in groundwater in two oxidation states; arsenite (As(III)) and arsenate (As(V)). As(III) is the more toxic of the two species and is more mobile. As(V) is the oxidized form and has a greater affinity for adsorption to other solids found in the aquifer, such as soil particles and other metal complexes. Two major factors that affect the form and amount of arsenic present in groundwater are pH and the redox state of the environment. As a general rule, when pH is neutral, the As(V) is negatively charged and will tend to bind to the surface of rock or soil particles that are positively charged, thus removing it from the water. As the pH increases, the arsenic concentrations in groundwater will tend to increase because the additional hydroxide ions present in the water compete with the As(V) for binding sites, thus leaving more As(V) free in the water. The redox state of the environment is also important. Under oxidizing conditions, most of the arsenic remains in the As(V) form where it is more stable and tends to bind to rock and soil

particles. Under reducing conditions, As(III) is the most stable soluble form of inorganic arsenic. Because most of the arsenic will be present as As(III), more arsenic will remain in solution and arsenic will likely be more mobile under reducing conditions. The pH measured in groundwater from eight onsite monitoring wells just prior to sampling varied between 5.42 and 6.55.

Lead is a heavy, bluish-gray metal that is softer than most other metals. Lead occurs naturally in the Earth's crust and small amounts of lead are naturally present in soils and water, however, lead is usually found combined with two or more other elements to form lead compounds. While lead occurs naturally in the environment, most of the high levels found throughout the environment come from human activities including metal production facilities, incinerators that burn refuse and sewage sludge, industrial boilers that burn coal and oil, and vehicles that burn gasoline.

Lead is used in batteries, shot and ammunition, pipes, glass, roofing materials, X-ray shields, and electrical equipment. Because of concerns about health effects, lead is no longer added to gasoline, paint, or ceramic glazes in the U.S. The largest use for lead is in storage batteries in cars and other vehicles. Lead used in ammunition is the largest non-battery end-use, which has remained fairly constant in recent years. However, even the use of lead in bullets and shot as well as in fishing sinkers is being reduced because of its harm to the environment.

Metallic lead is resistant to corrosion (i.e., not easily attacked by air or water). When exposed to air or water, thin films of lead compounds are formed that protect the metal from further attack. Lead is easily molded and shaped and can also be combined with other metals to form alloys.

Lead can enter the environment through releases from the mining of lead and other metals, and from factories that make or use lead, lead alloys, or lead compounds. Lead is released into the air during burning coal, oil, or waste. Before the use of leaded gasoline was banned, most of the lead released into the U.S. environment came from vehicle exhaust. Since EPA banned the use of leaded gasoline for highway transportation in 1996, the amount of lead released into the air has decreased further. Before the 1950s, lead was used in pesticides applied to fruit orchards. Once lead gets into the atmosphere, it may travel long distances if the lead particles are very small. Lead is removed from the air by rain and by particles falling to land or into surface water.

Sources of lead in dust and soil include lead that falls to the ground from the air, and weathering and chipping of lead-based paint from buildings, bridges, and other structures. Disposal of lead-containing products contribute to lead in landfills. Past uses of lead such as its use in gasoline are a major contributor to lead in soil, and higher levels of lead in soil are found near roadways. Most of the lead in

inner city soils comes from old houses with paint containing lead, and from automotive exhaust emitted prior to the ban of leaded gasoline.

Once lead is deposited onto soil, it sticks strongly to soil particles and remains in the upper layer of soil. That is why past uses of lead such as lead in gasoline, house paint, and pesticides are so important in the amount of lead found in soil.

Small amounts of lead may enter rivers, lakes, and streams when soil particles are moved by rainwater. Small amounts of lead from lead pipe or solder may be released into water when the water is acidic or “soft”. Lead may remain stuck to soil particles or sediment in water for many years. Movement of lead from soil particles into groundwater is unlikely unless the rain falling on the soil is acidic or "soft". Movement of lead from soil will also depend on the type of lead compound and on the physical and chemical characteristics of the soil.

Sources of lead in surface water or sediment include deposits of lead-containing dust from the atmosphere, waste water from industries that handle lead (primarily iron and steel industries and lead producers), urban runoff, and mining piles.

Some lead compounds are changed into other forms of lead by sunlight, air, and water. However, elemental lead does not break down in the environment. The levels of lead may build up in plants and animals from areas where air, water, soils or sediments are contaminated with lead. If animals eat contaminated plants or animals, most of the lead that they eat will pass through their bodies.

5.2.6 Propellants

Based on the former site use as a firing range, the MI surface soil samples collected at the site were analyzed for three propellants commonly associated with incomplete combustion of munitions: 2,4-dinitrotoluene; 2,6-dinitrotoluene; and nitroglycerin. Propellants include the explosive material that, when ignited, ejects the projectile from the weapon.

Detected nitroglycerine (NG) concentrations exceeded the associated RSL in all nine surface soil samples from the firing arcs, and exceeded the PAL in six of the nine samples. Trace levels of 2,4-dinitrotoluene were detected in four of the nine samples. Neither the PAL or the RSL were exceeded for this chemical.

NG is a colorless to pale-yellow, viscous, explosive liquid (solid below 56°F, pale yellow crystals). In its pure form, it is a primary contact explosive (physical shock can cause it to explode) and degrades over

time to even more unstable forms. This makes it highly dangerous to transport or use. NG is a high volume chemical, with production exceeding 1 million pounds annually in the U.S. The main use of NG, by tonnage, is in explosives such as dynamite and in propellants, and as such is employed in the construction and demolition industries. Similarly, since the 1880s, it has been used by the military as an active ingredient and a gellatinizer for nitrocellulose, and in some solid propellants. NG is also used medically as a vasodilator to treat heart conditions, such as angina and chronic heart failure.

In the past, the fate and mobility of NG in natural environments has not been well understood. Available data on the fate of NG in soil indicate that it is readily biodegradable in anaerobic or aerobic environments, except in acidic locations. The biotransformation of NG occurs through a series of successive denitration steps. Several bacterial strains are known to be capable of biodegrading NG in soils, river water, and activated sewage sludge by the removal of nitro groups. Complete biodegradation has been observed in mixed bacterial cultures and fungi.

If released on land, NG may readily leach into soil. In aquatic environments, degradation appears to occur primarily through biodegradation and photolysis. If released to the atmosphere, NG will probably be in the form of an aerosol and be subject to gravitational settling and scouring by rain. Based on reported water solubilities and vapor pressures and the calculated Henry's Law constant, the halflife for volatilization from water is approximately 3,000 days, indicating poor physical transport from aqueous systems. NG is relatively soluble in water (1,800 mg/L at 25oC) and therefore adsorption to soil and sediment and bioconcentration in aquatic organisms should not be appreciable.

In hydroponic and soil experiments conducted to assess the feasibility of using grasses in the clean-up of propellant-contaminated soil, NG degradation was nearly 100% in the tested grasses within 52 hours. The degradative activities of plant cells are only approximately ten times less than those reported for bacterial NG degradation.

5.3 LEAD PELLETS

One of the primary data points for the investigation at this site is the presence and abundance of lead pellets in marine sediment, resulting from shotgun use at the firing arcs. Because the site was formerly used as a recreational skeet-shooting range, it was expected that shotgun pellets would be found in the marine sediments at up to 600 ft from the firing arcs. Pellets used prior to the 1980s were almost exclusively comprised of lead shot. A federal program to phase out the use of lead as shot pellets and replace it with steel shot was implemented in the 1980s.

The WAMS concluded that because “the firing line was approximately 25 to 60 yards from the water, the majority of lead shot is presumed to have landed in the water.” Quantities of lead shotgun pellets were subsequently found in the marine sediments, as described in Section 4 of this report. Therefore, it is important to examine the potential fate of these lead pellets that would be expected from years of being submerged and mixing with marine sediments.

Lead pellets persist in marine environments and have been discovered at shipwrecks more than 2,000 years old (Craig, 2001). Lead pellets do not easily undergo dissolution in aquatic systems and, in some cases, can “remain intact for decades to centuries”. The breakdown of lead is influenced by “water chemistry, sediment chemistry, current flow rate, and the grain size of soils and sediments” (Goddard, 2008 and SAAMI, 1996).

Marine sediments tend to be oxygenated up to 4 in or less below the surface. Below that, there is no oxygen and ammonia tends to accumulate. The presence of oxygen creates an oxidizing environment, while the absence of oxygen results in a reducing environment. Under oxidizing conditions, metallic lead reacts with oxygen and hydrogen ions following the equation:

$$Pb(s) + 0.5O_2 + 2H^+ = Pb^{2+} + H_2O$$

Therefore, an oxygenated, acidic environment is conducive to corrosion at the metal surface. In the presence of oxygen and water, lead forms an oxide layer (most likely massicot, PbO). Further corrosion results in the hydroxycarbonate hydrocerussite. Corrosion will continue until hydrocerussite coats the surface. This coating has low solubility and passivates the shot surface, thus, reducing the rate of corrosion by preventing oxygen and hydrogen ions from associating with the surface (Graedel, 1994; Black, 1999; Craig, 2001; Beccaria, 1982).

Under the reducing conditions found in deeper sediments, “sulfur is released by sulfate reducing bacteria” (sulfate is reduced to sulfide). This allows lead to form galena (PbS) on the surface of the shot (Craig, 2001). “Galena is one of the most insoluble minerals of lead” (Davis, 1991). Similar to hydrocerussite, this layer of galena provides a coating of protection which is insoluble and prevents further reaction of the lead shot (Clausen, 2007 and Craig, 2001). This indicates that in an anaerobic environment, little or no corrosion of pellets will occur.

Water acidity and alkalinity levels can also have effects on lead shot in marine environments, although acidity or basicity is not common in ambient seawater. Under acidic waters (pH <4) or waters with a high concentration of dissolved oxygen, lead can be released from the shot, “although annual corrosion rates of lead are generally low” (Jacks, 1994; Jorgensen, 1987; Sheetz, 2004; Michael, 2006). In these cases,

"elemental lead will dissolve, releasing a hydrated cation Pb^{2+}" (ITRC, 2003). A neutral or alkaline environment (pH >11) tends to corrode lead shot, but this process is in most cases very slow. In these cases, "elemental lead will dissolve, theoretically forming the dissolved hydroxide complex $Pb(OH)_3^-$ and ion-pair $Pb(OH)_{2(aqueous)}$. Water and soil with high carbonate alkalinity form the dissolved ion-pair $PbCO_{3(aqueous)}$. The scenario of lead transport as a dissolved hydroxide or carbonate ion occurs most frequently in contaminated calcic soils, carbonate sediments, or aqueous environments characterized by high dissolved carbon dioxide gas concentration" (ITRC, 2003).

When the aqueous environment transitions between acidic/basic conditions or oxidizing/reducing conditions, the chemistry of the outer protective layers changes. The oxidation products of massicot and hydrocerrussite are soluble in acidic environments and will undergo rapid dissolution at a low pH. Hydrocerussite dissolution releases soluble lead which can be "captured by Fe and Mn oxides and carbonates soil fractions" (Sheetz, 2008). Upon exposure to oxygen, lead sulfide (galena) releases aqueous lead into solution. The lead(II) can then form "carbonate precipitates and soluble lead complexes" (Davis, 1991). In addition, sand in a turbulent environment can grind off the crust of the pellet and release lead particles or compounds into the water, especially under acidic conditions (Michael, 2006). Therefore, shifting or highly irregular chemical and physical dynamics could, in theory, cause lead shot to release forms of soluble lead (such as inorganic lead salts) into the environment.

Forms of soluble lead can associate with marine sediments. Lead shot is "expected to remain localized because sparingly soluble mineral precipitates will form or the lead will be adsorbed onto the soil matrix" (Clausen, 2007). "Lead can bind to mineral surfaces…of quartz, humus, iron oxides, aluminum oxides, manganese oxides, and…any mineral with oxygen or sulfur atoms at the surface" (Clausen, 2007). "Sorption is the dominant mechanism influencing the distribution of lead in aquatic ecosystems, with most of the lead entering natural waters forming associations with suspended particulates and, ultimately bottom sediments" (CCREM, 1987).

> "When lead exists in a dissolved state, it can sorb to charged clay particle surfaces. In most natural sedimentary environments, clays carry a net negative surface charge. In a solution having neutral pH, dissolved cations are sorbed preferentially. Therefore, when dissolved lead exists as Pb^{2+} in dilute solution, transport can be attenuated by sorption to clays. These conditions occur in anoxic subsurface environments characterized by neutral to acidic pH, low dissolved solids concentrations, and low carbonate alkalinity. In contrast, when dissolved lead exists preferentially as an uncharged ion pair or negatively charged hydroxyl complex, transport can be enhanced because sorption is negligible (presence of two negatively charged surfaces). These conditions can occur over a range

of redox conditions but require alkaline pH or high total dissolved solids or carbonate alkalinity concentrations" (ITRC, 2003).

In addition, research by James Craig involving the recovery of metal artifacts from shipwrecks has shown that lead shot can "cement together" with interstitial sand to form solid masses (Craig, 2001).

"Sediment-associated lead can be remobilized and released into the water column when pH decreases suddenly or when the ionic composition of the water changes" (Demayo, 1981). "Some of the lead in sediments can be transformed into organoleads" which are sparingly soluble in aqueous environments (MacDonald, 2001). However, these conditions are not likely to occur in an open marine environment.

In summary, the lead pellets present in the aqueous marine environment of MRP Site 1, Carr Point may not degrade for some time if the pH, redox, and relatively stagnant water flow conditions remain constant. This appears to be the case in the "Overshoot Area", which is mostly subtidal, and characterized by depositional sediments. However, the "Target Area", which includes the intertidal portion of the shoreline, particularly the areas of SD01 and SD02, is more oxygenated because it is prone to wave action and continuous disturbance of the sands and gravels present there. Because lead pellets are more dense than similarly sized sand and gravel particles, this wave action will cause pellets in the intertidal area to be moved through erosion processes to the deeper anaerobic sediments, and during that transition, some breakdown of the lead oxides and outer layers of the pellets may occur. Further, some continued transition back and forth between the oxygenated and anaerobic sediments may occur when strong storms and wave action disturb this shoreline. This back-and-forth movement could occur over a period of decades. During this period, some reduction of the lead pellets may occur, providing some low concentrations of lead in fine sediment in this area. However, extreme levels of acidity (pH <4) or basicity (pH >11) should not occur in marine environments, so degradation of the lead shot will be limited.

The presence of lead pellets is not expected to result in surface water contamination at levels that would affect human or ecological receptors. As seen in the most recent sediment data (June 2009 sampling event), analysis of sieved sediment samples indicate total lead in this sieved material at concentrations above the 21 mg/kg lead ecological benchmark (maximum concentration 424 mg/kg). While this is not an extreme condition, it may be indicative of some minor breakdown of the lead from the pellets in the intertidal oxygenated zones. The pellets themselves may pose a different health risk to specific ecological receptors, as described in Section 7 of this report.

6.0 HUMAN HEALTH RISK EVALUATION

This section presents an abbreviated human health risk evaluation using the data collected at the site. In this abbreviated risk evaluation, concentrations of MCs and other contaminants detected in the site samples are compared to human health risk-based criteria. During the initial stages of data evaluation (Section 4), it was noted that some contaminant concentrations did exceed the applicable risk-based criteria, and that these exceedances would merit a complete human health risk assessment, which is beyond the scope of this Site Investigation project. Therefore, this abbreviated risk evaluation has been prepared to briefly present the data and the risk exceedances. The conclusions of this evaluation are used only to determine if the site should be carried forward to the Remedial Investigation phase under CERCLA and the NAVFAC Installation Restoration Program.

6.1 COMPARISON TO HUMAN HEALTH RISK CRITERIA

All detected contaminant concentrations are presented in Tables 4-1 through 4-4 of this report. Tables 6-1 though 6-6 use standard descriptive statistics to summarize the data and also compare statistical values to applicable human health risk-based screening criteria. Exceedances of these criteria are discussed in the media – specific subsections that follow.

6.1.1 Potential Risk from Contaminants in Groundwater

It is noted that EPA does not recognize the “GA” groundwater criteria established by the Rhode Island Department of Environmental Management (RIDEM), because the State does not have an EPA-approved comprehensive state groundwater protection (CSGWP) program. However, the State GA criteria are included for comparison purposes in this report because they are identified in the Work Plan and QAPP that directs this investigation.

Table 6-1 presents statistics and comparison criteria for compounds detected in groundwater, including volatile organic compounds (VOCs), petroleum hydrocarbons, pesticides/polychlorinated biphenyls (PCBs), and metals. Compounds detected in groundwater were screened against EPA Regional Screening Levels (RSLs) for tap water and RIDEM residential (GA) groundwater criteria. EPA RSLs for noncarcinogenic chemicals were divided by 10 to correspond to a hazard index (HI) of 0.1 (actual screening levels are based on an HI of 1), in accordance with EPA Region 1 guidance (USEPA, August 1995).

Five VOCs were detected at concentrations exceeding EPA tap water RSLs: 1,1,2,2-tetrachloroethane, benzene, chloroform, tetrachloroethene, and trichloroethene. Three of these five chemicals, benzene,

tetrachloroethene, and trichloroethene, also exceeded RIDEM residential groundwater criteria (the remaining two, 1,1,2,2-tetrachloroethane and chloroform, do not have RIDEM residential groundwater criteria). The maximum concentration of 1,1,2,2-tetrachloroethane exceeded the EPA RSL by more than two orders of magnitude. The maximum concentrations of benzene and chloroform exceeded the respective EPA RSLs by more than one order of magnitude. The maximum concentration of tetrachloroethene exceeded the EPA RSL by more than four orders of magnitude and exceeded the RIDEM criterion by more than two orders of magnitude. The maximum concentration of trichloroethene exceeded the EPA RSL by more than one order of magnitude and was more than five times the RIDEM criterion.

Arsenic, cobalt, iron, and manganese concentrations exceeded the EPA RSLs in both the total (unfiltered) metals and dissolved (filtered) metals fractions (RIDEM residential groundwater criteria have not been established for these four metals). The maximum concentration of arsenic was 4 ug/L in both total and dissolved metals samples, exceeding the RSL by more than an order of magnitude. The maximum concentrations of both total and dissolved cobalt exceeded the adjusted RSL (based on an HI of 0.1) . The maximum concentrations of both total and dissolved iron exceeded the adjusted RSL. Maximum concentrations of both total and dissolved manganese exceeded the adjusted RSL (Table 6-1).

6.1.2 Potential Risk from Contaminants in Surface Soil

Table 6-2 presents statistics and comparison criteria for compounds detected in surface soil, including VOCs, semivolatile organic compounds (SVOCs), pesticides/PCBs, explosives, and metals. Compounds detected in surface soil were screened against EPA RSLs for residential soil and RIDEM residential soil criteria. EPA RSLs for noncarcinogenic chemicals were divided by 10 to correspond to an HI of 0.1 (actual screening levels are based on an HI of 1, in accordance with EPA Region 1 guidance (USEPA, August 1995).

Several carcinogenic polycyclic aromatic hydrocarbons (cPAHs) exceeded both EPA and RIDEM residential criteria: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. The maximum concentrations of benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene exceeded RSLs and RIDEM screening levels by more than two orders of magnitude. The maximum concentration of benzo(a)pyrene exceeded the RSL by more than three orders of magnitude and exceeded the RIDEM screening criterion by more than two orders of magnitude. The maximum concentration of dibenzo(a,h)anthracene exceeded the RSL by more than three orders of magnitude and exceeded the RIDEM screening level by more than one order of magnitude. The maximum concentrations of benzo(k)fluoranthene and chrysene

were within one order of magnitude of the respective RSLs, and exceeded the RIDEM screening levels by more than one order of magnitude.

The maximum concentrations of benzo(g,h,i)perylene, fluoranthene, phenanthrene, and pyrene exceeded the RIDEM criteria only, with benzo(g,h,i)perylene exceeding by more than one order of magnitude and the other three PAHs exceeding by less than an order of magnitude. The maximum concentration of naphthalene (3700 ug/kg) marginally exceeded the EPA RSL of 3600 ug/kg and did not exceed the RIDEM criterion.

PCB Aroclor-1260 and the pesticide, dieldrin, were the only chemicals from the pesticide/PCB fraction that exceeded soil screening criteria; both chemicals exceeded both the EPA RSLs and the RIDEM criteria. The maximum concentration of Aroclor-1260 exceeded the EPA RSL by more than two orders of magnitude and was 4.5 times the RIDEM criterion. The maximum concentration of dieldrin was within one order of magnitude of both criteria.

The following metals had concentrations that exceeded screening criteria: aluminum, antimony, arsenic, chromium, copper, iron, lead, and manganese. Arsenic, lead, and manganese exceeded both EPA and RIDEM criteria, and the other five exceeded the EPA criteria only (with RIDEM criteria not available for aluminum and iron). The maximum concentrations of aluminum, antimony, copper, and iron would not exceed any screening criteria if the actual criteria values (based on an HI of 1) were used instead of adjusted values (based on an HI of 0.1). The maximum concentrations of arsenic and chromium exceeded the RSLs by more than two orders of magnitude, although, it is noted that the more conservative *hexavalent* chromium RSL was used as the screening criterion for chromium. The maximum concentration of lead was within one order of magnitude of both the RSL and the RIDEM criterion. The average lead concentration was less than the RSL and slightly exceeded the RIDEM criterion.

The comparison of data to risk-based criteria, as discussed above, indicates that there is a potential for risk to human health, under a residential risk scenario, from PAHs and from the propellant, nitroglycerine, found in surface soil in the Camping Area, and from PCBs in surface soil at the gated storage area and adjacent to a storm drain outfall near that gated area. While pesticides are present in soil at low concentrations, this is a common occurrence and does not indicate a significant potential for risk at this point. Future evaluations will consider pesticides, if needed.

PAHs that are bound within clay are likely to be less toxic than the pure liquid forms of the contaminants on which the literature toxicity data is typically based. Clay skeet targets are manufactured from petroleum pitch and dolomitic limestone clay (Remington, 1994). Petroleum pitch is an asphalt

concentrate from crude oil where enough oil has been removed to produce a coal-like solid with a high melting point (Buether and Goldthwait, (undated). The manufacturer uses heat and pressure to fuse the pitch with the clay, and as a result, the PAHs remain adhered to the particles as the clay is broken down over time. As a result, the PAHs are not expected to provide the same exposure potential as would the liquid forms of these chemicals. Toxicity testing on this material conducted for ecological test species has found that PAHs remain tightly bound in the pitch and clay matrix and are unlikely to be readily released to the environment (Baer et.al., 1994). As a result of the PAHs being part of a solid matrix, these PAHs would not readily absorb into body tissues, either through dermal absorption, ingestion, or inhalation, as they would in the case of exposure to the liquid or vapor forms of these chemicals. To compensate for the overestimate of exposure to PAHs in asphaltic matrices, some regulatory organizations (e.g. Massachusetts Department of Environmental Protection) recommends use of chemical-specific relative absorption factors to appropriately adjust the toxicity of PAHs in some media, when calculating risk through ingestion and dermal exposure scenarios (MADEP, 2008). While EPA Region 1 does not yet endorse such an approach, future risk assessments should consider use of such media-specific factors to prevent overestimating risk to human health from actual conditions at the site and site media.

6.1.3 Potential Risk from Contaminants in Subsurface Soil

Table 6-3 presents statistics and comparison criteria for VOCs, SVOCs, pesticides/PCBs, and metals detected in subsurface soil. As for surface soil, compounds in subsurface soil were screened against EPA RSLs for residential soil and RIDEM residential soil criteria. EPA RSLs for noncarcinogenic chemicals were divided by 10 to correspond to an HI of 0.1 (actual screening levels are based on an HI of 1), in accordance with EPA Region 1 guidance (USEPA, August 1995).

Tetrachloroethene was the only VOC detected at a concentration exceeding screening criteria. The maximum concentration of tetrachloroethene (2100 ug/kg) was within one order of magnitude of the EPA RSL (550 ug/kg) and did not exceed the RIDEM residential soil criterion.

Six cPAHs detected in subsurface soil, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, exceeded both EPA and RIDEM screening criteria. The maximum concentrations of benzo(a)anthracene and benzo(b)fluoranthene exceeded the EPA and RIDEM screening levels by more than an order of magnitude. The maximum concentrations of dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene exceeded the EPA RSL by more than one order of magnitude but were within one order of magnitude of the RIDEM screening levels. The maximum concentration of benzo(a)pyrene exceeded the EPA RSL by more than two orders of magnitude and exceeded the RIDEM criterion by more than one order of magnitude. The maximum concentration of benzo(k)fluoranthene was within one order of magnitude of

the EPA RSL and the RIDEM screening level. Benzo(g,h,i)perylene, chrysene, and pyrene exceeded the RIDEM screening levels but were less than the EPA RSLs.

No pesticides/PCBs were detected at concentrations exceeding screening criteria.

Concentrations of arsenic and manganese in subsurface soil exceeded both EPA and RIDEM criteria. Aluminum, chromium, and iron were detected at concentrations exceeding the EPA criteria only (RIDEM criteria are not established for aluminum or iron). The aluminum and iron concentrations would not exceed screening criteria if the actual criteria (based on an HI of 1) were used. Beryllium was detected at a concentration that slightly exceeded the RIDEM criteria. The maximum concentration of arsenic is within two orders of magnitude of the EPA RSL and is within one order of magnitude of the actual RIDEM screening level. The maximum concentration of chromium exceeds the EPA RSL by slightly more than two orders of magnitude but does not exceed the RIDEM criterion.

6.1.4 Potential Risk from Contaminants in Sediment

Sediment data were compared with Project Action Limits established based on various human health criteria. While human exposure to sediment is possible as a result of trespassing, wading, and swimming, exposure is anticipated to be limited due to the presence of the overlying water.

Table 6-4 presents summary statistics for the SVOCs and metals detected in sediment. Chemicals in sediment were screened against criteria based on USEPA RSLs for residential soil and RIDEM residential soil criteria. Soil screening levels were multiplied by a factor of 10 to account for the anticipated reduced exposure to sediment as compared to soil. EPA Screening levels for noncarcinogenic chemicals were divided by 10 to correspond to an HI of 0.1 (actual screening levels are based on an HI of 1) in accordance with USEPA Region 1 guidance (USEPA, August 1995).

Two SVOCs, benzo(a)pyrene and dibenzo(a,h)anthracene, were detected at concentrations that exceeded the adjusted EPA screening criteria but did not exceed the adjusted RIDEM criteria. The maximum concentrations of benzo(a)pyrene and dibenzo(a,h)anthracene in sediment were within one order of magnitude of the screening levels used in this abbreviated risk evaluation.

Concentrations of arsenic, chromium, lead, and manganese exceeded the adjusted EPA screening criteria only. The maximum concentrations of arsenic, manganese, and chromium were within one order of magnitude of the respective EPA RSLs (the RSL for hexavalent chromium was used). The maximum concentration of lead exceeded the EPA RSL, but the average concentration was well below the criterion.

6.2 MIGRATION OF SOIL CONTAMINANTS TO GROUNDWATER (LEACHABILITY)

In order to evaluate the potential for migration of soil contaminants to groundwater, soil data were screened against EPA's "protection of groundwater" RSLs for soil and RIDEM's "leachability criteria" for soil. This comparison is also typically conducted during the initial phase of a baseline human health risk assessment. Additionally, background concentrations for metals in the soil type MmA are presented in table 6-5 (surface) and 6-6 (subsurface), compared to metals concentrations in site soils

6.2.1 Surface Soil Migration to Groundwater

Table 6-5 presents statistics and comparison criteria for the VOCs, SVOCs, pesticides/PCBs, explosives, metals, and petroleum hydrocarbons detected in surface soil.

One VOC, tetrachloroethene, was detected in soil at a concentration that exceeded the EPA screening criterion. However, this VOC was only detected in one of the sixteen samples analyzed for this compound. The detected concentration was well below the associated RIDEM criterion.

Several SVOCs exceeded EPA screening criteria, including: 2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h) anthracene, dibenzofuran, indeno(1,2,3-cd)pyrene, naphthalene n-nitrosodiphenylamine, and phenanthrene. The maximum concentration of 2-methylnapthalene exceeded the EPA RSL by less than one order of magnitude. The maximum concentrations of chrysene, dibenzo(a,h)anthracene, dibenzofuran, and n-nitrosodiphenylamine exceeded the EPA RSL by more than one order of magnitude. Benzo(k)fluoranthene and indeno(1,2,3-cd)pyrene exceeded the EPA RSL by more than two orders of magnitude. While benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and napthalene were several orders of magnitude larger than the EPA RSL.

The maximum concentration of nitroglycerin exceeded the EPA screening value by one order of magnitude. A RIDEM screening value was not available for nitroglycerin.

The following metals had concentrations that exceeded screening criteria: antimony, arsenic, chromium, copper, iron, lead, manganese, mercury, and vanadium. Copper and mercury exceeded EPA screening criteria. Concentrations of arsenic, chromium, iron, lead, manganese, and vanadium exceeded EPA screening criteria and were above background concentrations. Antimony exceeded EPA screening criteria; however, a background concentration was not available. Iron, manganese, and vanadium were within an order of magnitude of the background concentrations. Copper and lead were one order of magnitude greater than the USEPA screening criteria.

Four pesticides, alpha-BHC, dieldrin, gamma-BHC, and heptachlor epoxide, exceeded EPA screening criteria; RIDEM criteria are not established for these compounds. PCB Aroclor-1260 exceeded the EPA criterion by three orders of magnitude and the RIDEM criterion by less than one order of magnitude.

Neither background concentrations nor regulatory screening criteria for surface soil-to-groundwater migration are available to evaluate petroleum hydrocarbons.

6.2.2 Subsurface Soil Migration to Groundwater

Table 6-6 presents statistics and comparison criteria for the VOCs, SVOCs, pesticides/PCBs, metals, and petroleum hydrocarbons detected in subsurface soil. Chemicals in subsurface soil were screened against EPA RSLs for migration to groundwater and RIDEM migration to groundwater criteria.

Several VOCs exceeded the EPA screening criteria, but did not exceed the RIDEM screening criteria, including benzene, bromodichloromethane, chloroform, ethylbenzene, isopropylbenzene, methylene chloride, and vinyl chloride. These VOCs were detected infrequently, in a maximum of 4 out of 38 samples. Tetrachloroethene and trichloroethene exceeded EPA and RIDEM screening criteria, but were detected in only 4 and 3 samples, respectively, out of 38 samples analyzed for VOCs. The maximum concentration of tetrachloroethene was one order of magnitude greater than the RIDEM screening value and trichloroethene was within an order of magnitude of the RIDEM screening value.

The PAH, benzo(a)pyrene, exceeded EPA and RIDEM screening criteria. The maximum concentration of benzo(a)pyrene exceeded the RIDEM screening criterion by more than an order of magnitude, however, benzo(a)pyrene was detected in only 4 of 38 samples. Several PAHs exceeded EPA screening criteria, but did not exceed RIDEM criteria, including benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and naphthalene.

The pesticides alpha-BHC, beta-BHC, delta-BHC, dieldrin, gamma-BHC, and heptachlor epoxide exceeded their respective EPA RSLs, but were detected in only 1 to 3 of 38 samples. PCB Aroclor-1260 exceeded the RSL, and was detected in 5 of 38 samples.

Reported concentrations of six metals in subsurface soil exceeded the EPA soil-to-groundwater screening criteria, including arsenic, chromium, iron, lead, manganese, and nickel. (RIDEM soil-to-groundwater screening values for metals are not established). Arsenic and chromium exceeded by more than four orders of magnitude.

6.3 SUMMARY

Based on the concentrations of contaminants found in site groundwater, soil, and sediment, several compounds pose a potential for human health risk at the site, assuming a residential land use scenario. In surface soil, these compounds include PAHs, propellants, and PCBs. In groundwater at the southern storage area, chlorinated VOCs pose potential risk to human health.

PAHs that are bound within clay are likely to be less toxic than these compounds would be in their liquid state, the physical state on which the literature toxicity data is typically based. Toxicity testing on this material conducted for ecological test species has found that PAHs remain tightly bound in the pitch and clay matrix and are unlikely to be readily released to the environment. As a result of the PAHs being part of a solid matrix, these PAHs would also not readily absorb into body tissues, either through dermal absorption, ingestion, or inhalation, as they would in the case of exposure to the liquid or vapor forms of these chemicals. To compensate for the overestimate of exposure to PAHs in asphaltic matrices, chemical-specific relative absorption factors may be appropriate to adjust the toxicity for PAHs in some media, when calculating risk through ingestion and dermal exposure scenarios. While EPA Region I does not yet endorse such an approach, future risk assessments should consider use of such site – specific conditions to prevent overestimating risk to human health.

While pesticides are present in soil at low concentrations, these compounds are typically widespread in the environment due to their common historical use, and their presence at these levels does not indicate a significant potential for risk.

Metals were detected in surface soil across the site at concentrations exceeding PALs and, to some extent, exceeding background concentrations. Metals are part of the natural mineral content of soils, and these natural conditions may exceed ranges measured in background locations. However, some detected metals or metals concentrations may be related to the former industrial storage use of the southern portions of the property.

Based on these findings, it is recommended that the Site be carried forward to the Remedial Investigation phase under CERCLA and the NAVFAC Installation Restoration Program.

7.0 ECOLOGICAL RISK ASSESSMENT

7.1 INTRODUCTION

The goal of this ecological risk assessment (ERA) is to determine whether adverse ecological impacts are present as a result of exposure to chemicals released to the environment through historical activities at MRP, Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island. This risk assessment contains information that enables risk managers to conclude either that ecological risks at the site are most likely negligible, or that further information is necessary to evaluate potential ecological risks at the site.

This ecological risk assessment was conducted generally following the methodology in the following guidance documents:

- Final Guidelines for Ecological Risk Assessment [United States Environmental Protection Agency (USEPA), 1998].

- Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (USEPA, 1997).

- Navy Policy for Conducting Ecological Risk Assessments [Department of Navy (DON), 1999].

This ERA consists of Steps 1, 2, and 3a of the eight steps in accordance with the above guidance documents. The first two steps are the screening-level ecological risk assessment (SERA), where conservative exposure estimates are compared to screening-level and threshold toxicity values. Step 3a is the first step in the baseline ecological risk assessment (BERA) and consists of refining the conservative assumptions following Steps 1 and 2 to further focus the ERA process on the chemicals of greatest concern at a site. The remaining steps of the ERA process require revision to the Work Plan and Field Sampling Plan prior to initiation, and are not included in this ERA.

7.2 PROBLEM FORMULATION

Problem formulation is the first phase of this risk assessment. It includes general descriptions of Site 1, Carr Point with emphasis on the habitats and ecological receptors present. This phase also involves characterization of site-related chemicals, chemical sources, migration routes, and an evaluation of routes of chemical exposure.

Section 1.3.1 presents a detailed description of the site location, history, and background of the site, and Section 2.2 presents the physical characteristics of the site. Figure 3-1 shows the site layout. The Site is located on approximately 7 acres of land and is bounded on the west by the Narragansett Bay, on the north by picnic grounds, on the east by railroad tracks, and on the south by Gomes Brook.

There are three main portions of the site, the Camping area, to the north is the former location of the firing arcs where the recreational skeet range was based. This area consists primarily of mowed grass. The central portion of the site is occupied by a gated storage area, which is fenced and locked. This area consists of a gravel parking area, concrete, and some mowed grass. Finally, the southern area is currently unused, and is mostly vegetated with locally found invasive and secondary growth species including wild cherry, wild rose, buckthorn, hawthorne and other opportunistic shrubs. The area where this vegetation was removed for the purposes of this Site investigation is anticipated to return to grasses and mature quickly to a shrub as is common in this area. The potential sources of contamination are described in detail in Section 1.3.1 and are not repeated here.

7.2.1 Potential Exposure Pathways

The contaminated media to which ecological receptors may be exposed include surface soil and sediment. The following sections describe these potential exposure pathways in more detail.

7.2.1.1 Surface Soil

Terrestrial ecological receptors such as plants, soil invertebrates, mammals, and birds can be exposed to contaminated surface soil through direct exposure (plants) or direct contact (animals) as they search for food and burrow into the soil. Mammals and birds can also ingest surface soil and food items that have accumulated chemicals. Some terrestrial receptors such as burrowing mammals or deep-rooted trees could be exposed to shallow layers of contaminated subsurface soils.

7.2.1.2 Sediment

Marine ecological receptors, such as fish and benthic invertebrates (including gastropods, bivalves, crustaceans, etc.) can be exposed to sediment contamination through direct contact and incidental sediment ingestion. Mammals and birds may also be exposed to the sediment, although to a lesser degree through direct contact and incidental sediment ingestion, or through the ingestion of food items (i.e., fish) that have accumulated chemicals.

7.2.2 Endpoints

7.2.2.1 Assessment Endpoints

Assessment endpoints are explicit expressions of the environmental value that is to be protected (USEPA, 1997). The selection of these endpoints is based on the habitats present, the migration pathways of probable chemicals, and the routes that chemicals may take to enter receptors. Based on the habitat description at Site 1, Carr Point, the following preliminary assessment endpoints were selected for the ERA.

Soil invertebrates – Soil invertebrates include earthworms, the juvenile stages of many insects, and other small organisms that live in or on the surface soil. These organisms are present in the soil in terrestrial habitats at the site. Soil invertebrates promote plant growth by aiding in the formation of soil and through redistribution and decomposition of organic matter. Soil invertebrates also serve as a food source for many mammals and birds. Chemicals can accumulate from the soil into the tissues of soil invertebrates that are consumed by other organisms.

Terrestrial Vegetation – Terrestrial vegetation at the site consists of herbs (grasses and other non-woody plants), shrubs, and trees. These plants serve as a source of food and shelter for many organisms and help prevent soil erosion and excessive surface runoff. Plants can also accumulate some chemical from the soil that are consumed by other organisms.

Benthic Invertebrates - Benthic invertebrates, including gastropods, bivalves, shellfish, crustaceans, as well as smaller invertebrates (i.e., worms, smaller arthropods, etc.) serve as a food source for higher trophic level organisms (i.e., fish, birds, mammals). They also can accumulate chemicals, which are then transferred to higher trophic level organisms that consume invertebrates. Benthic macroinvertebrates are present in Narragansett Bay adjacent to the site.

Herbivorous Birds and Mammals – Herbivorous birds and mammals forage at the site and in turn serve as a food source for higher trophic level carnivores. Their role in the community is essential because, without them, higher trophic-level animals could not exist. They are exposed to and accumulate chemicals that are present in the plants they consume.

Insectivorous Birds and Mammals - Insectivorous birds and mammals consume soil invertebrates and insects and in turn serve as a food source for higher trophic level carnivores. These birds and mammals are exposed to, and can accumulate, chemicals that are present in the food items they consume.

Piscivorous Birds and Mammals – Piscivorous birds and mammals consume fish and marine invertebrates. They are present along the shoreline at the site and are exposed to, and can accumulate, chemicals that are present in the food items they consume.

USEPA guidance (USEPA, 1997) states that "it is not practical or possible to directly evaluate risks to all of the individual components of the ecosystem at a site. Instead, assessment endpoints focus the risk assessment on particular components of the ecosystem that could be adversely affected by chemicals from the site". Therefore, the ERA focuses on the endpoints tending to yield the highest risks, which should account for endpoints that have lower risks.

For the vertebrate receptors, selection of a particular species is required so that intake through eating and drinking can be estimated. The following surrogate species were used for the food chain modeling, which is discussed in Section 7.4:

- Herbivorous mammal: meadow vole
- Herbivorous bird: bobwhite quail
- Insectivorous mammal: short-tailed shrew
- Insectivorous bird: American robin
- Piscivorous mammal: raccoon
- Piscivorous bird: herring gull

7.2.2.2 Measurement Endpoints

Measurement endpoints are estimates of biological impacts (e.g., mortality, growth, reproduction) that are used to evaluate the assessment endpoints. The following table presents a summary of the assessment endpoints along with the corresponding measurement endpoint.

Assessment Endpoint	Measures of Effect
Adverse effects on the survival, reproduction, and growth of soil invertebrates	• Survival, growth, and reproduction of soil invertebrates were evaluated by comparing the measured concentrations of chemicals in the surface soil to invertebrate soil screening levels.
Adverse effects on the survival, reproduction, and growth of terrestrial vegetation	• Survival, growth, and reproduction of terrestrial plants were evaluated by comparing the measured concentrations of chemicals in the surface soil to soil screening levels (based on plants).
Adverse effects on the survival, reproduction, and growth of benthic invertebrates	• Survival, growth, and reproduction of benthic macroinvertebrates were evaluated by comparing the measured concentrations of chemicals in the sediment to sediment screening values.
Adverse effects on the	• Survival and reproduction of birds and mammals were evaluated by

Assessment Endpoint	Measures of Effect
survival and reproduction of insectivorous birds and mammals	comparing the maximum and average ingested dose from contaminants in the surface soil and invertebrates collected from the soil to No Observed Adverse Effects Levels (NOAELs) and Lowest Observed Adverse Effects Levels (LOAELs).
Adverse effects on the survival and reproduction of herbivorous birds and mammals	• Survival and reproduction of birds and mammals were evaluated by comparing the maximum and average ingested dose from contaminants in the surface soil and plants collected from the soil to NOAELs and LOAELs.
Adverse effects on the survival and reproduction of piscivorous birds and mammals	• Survival and reproduction of birds and mammals were evaluated by comparing the maximum and average ingested dose from contaminants in the sediment and fish to NOAELs and LOAELs.

7.2.3 Conceptual Site Model

A CSM in ERA problem formulation is a written description of predicted relationships between ecological entities and the stressors to which they may be exposed (EPA, 1998). The CSM consists of two primary components, predicted relationships among stressor, exposure, and assessment endpoint response and a diagram that illustrates the relationships (EPA, 1998). Figures 8-1, 8-2a, and 8-2b are pictorial presentations of the general CSM. Because parts of the site consist of vegetated areas, a variety of terrestrial receptors may periodically visit the site, including small mammals and birds. Other terrestrial receptors at the site include terrestrial plants and invertebrates. The terrestrial receptors are exposed to contaminants in the surface soil by direct contact and ingestion of soil and food items that have accumulated the contaminants. Contaminants were deposited to the offshore area through surface water runoff, discharge through stormwater pipes, and direct deposition from firing activities. Benthic invertebrates and fish are exposed to contaminants in sediment by direct contact and/or ingestion of sediment and food items. Benthic invertebrates have a greater potential for exposure because they are in direct contact with the sediment, so they are the primary receptor of concern for this pathway. Although benthic invertebrates are typically only exposed to the contaminants in the biotic zone, which is usually within the top six inched or less of sediment, the deeper sediment at the site (6 to 12 inch interval), could become exposed in the future from storm events or erosion. Therefore, data from both sediment intervals (0 to 6 inches and 6 to 12 inches) were evaluated in this risk assessment. Piscivorous wildlife can be exposed to contaminants in sediment from by consuming aquatic organisms that have accumulated the contaminants and incidental ingestion of sediment. Finally, birds can be exposed to lead from shot pellets by consuming sediment while searching for grit.

7.3 ECOLOGICAL EFFECTS EVALUATION

The preliminary ecological effects assessment is an investigation of the relationship between the exposure to a chemical and the potential for adverse effects resulting from exposure. In this step, screening levels for toxicity of the chemicals to ecological receptors were compiled.

7.3.1 Terrestrial Organisms and Marine Organisms

Potential risks to terrestrial organisms and marine organisms (i.e., benthic invertebrates) resulting from exposure to chemicals were evaluated by comparing chemical concentrations to ecological screening levels. Table 7-1 presents the surface soil screening levels. Columns for the soil screening levels are divided into screening values developed to protect plants, invertebrates, mammals, and birds. Table 7-2 presents the sediment screening levels. Primarily, the marine screening values were used because the surface water surrounding Carr Point is saline. However, freshwater values were used when marine values were not available.

7.3.2 Mammals and Birds

Risk to mammals and birds from exposure to chemicals in surface soil and sediment were determined using food chain models to estimate the Chronic Daily Intake (CDI) which was compared to toxicity reference values (TRVs) representing acceptable daily doses in mg/kg-day. The TRVs were developed from NOAELs and LOAELs obtained from wildlife studies, if available. The majority of the TRVs were obtained from the ORNL Toxicological Benchmarks for Wildlife: 1996 Revision (Sample et al., 1996) and the USEPA Ecological Screening Levels, but were supplemented with other toxicity information when necessary. Appendix F presents the TRVs for the mammals and birds that were used in the ERA and the sources of the TRVs (Appendix F, Tables 1 and 2).

7.4 CHARACTERIZATION OF EXPOSURE

This portion of the ERA includes identification of chemical concentration data used as the exposure point concentrations (EPCs) to represent ecological exposure in various media. Terrestrial plants and invertebrates are exposed to chemicals in the surface soil, and marine receptors are exposed to chemicals in the sediment through ingestion and/or direct contact. Soil sample CRP-SB04-0002 was excluded from the evaluation because it is located under pavement and there is no exposure. Maximum concentrations were used as the EPCs for comparison to the screening values in order to select COPCs. Total exposure of terrestrial wildlife to chemicals in soil and sediment (and associated food items such as

plants and invertebrates were estimated for the surrogate wildlife species listed in Section 7.2.4.3 using the following equation:

$$CDI = \frac{[(Cf * If) + (Cs * Is)] * H}{BW}$$

Where:

CDI	=	Chronic daily intake (mg/kg-day)
Cf	=	Chemical concentration in food – (see discussion below)
Cs	=	Chemical concentration in surface soil or sediment (mg/kg)
If	=	Food ingestion rate (kg/day)
Is	=	Incidental surface soil or sediment ingestion rate (kg/day)
H	=	Portion of food intake from the contaminated area (unitless)
BW	=	Body weight (kg)

The factor "H" is the contaminated area (i.e., site) divided by the home range (HR) of the receptor and represents the percent of time spent in this area and therefore the percent of food that the receptor will obtain from the site. For example, if the site is 1 acre and the home range of the receptor is 10 acres that receptor can be expected to obtain 10 percent of its food from the site. Typically the "H" factor is 1.0 to be conservative, especially at the screening level stage.

Chemical concentrations in food items for insectivorous and herbivorous receptors were calculated using soil-to-invertebrate or soil-to-plant bioaccumulation factors (BAFs) from published sources, or regression equations from the USEPA Ecological Screening Level Guidance Document (USEPA, 2005). The following equation was used to calculate the chemical concentration in plants or invertebrates when BAFs were used:

$$Cf = Cs * BAF$$

Where:

Cf	=	Chemical concentration in food (mg/kg)
Cs	=	Chemical concentration in surface soil (mg/kg)
BAF	=	Soil to biota bioaccumulation factor (unitless)

Concentrations of chemicals in food items of the raccoon and herring gull were estimated using the following equations:

$$C_{f\ (inorganics)} = BSAF \times C_s$$

$$C_{f(organics)} = BSAF(C_s/f_{oc})f_l$$

where:

C_f	=	chemical concentration in food (mg/kg)
C_s	=	chemical concentration in sediment (mg/kg)
BSAF	=	biota-sediment accumulation factor
f_{oc}	=	TOC content of sediment expressed as a decimal fraction
f_l	=	organism lipid content expressed as a decimal fraction

Total organic carbon (TOC) was not analyzed in sediments at the site so a TOC value of 1 percent was used. Thus, the f_{oc} term in the above equation was 0.01. The percent lipid value was assumed to be 14.4% (dry weight) for fish (~3.6 % wet weight).

Table 7-3 summarizes the exposure factors that were used for the food chain model and Appendix F presents the derivation of those parameters (Appendix F Table 3). Receptor profile for the surrogate species are presented in Appendix F. Note that dry-weight food ingestion rates were used in the food chain model. The sources of the BAFs and BSAFs are presented in Appendix F (Appendix F Tables 4-6).

The following input parameters were used in the screening CDI equation for the surrogate species:

- Maximum surface soil, sediment, and tissue concentrations
- Conservative BAFs
- Conservative receptor body weights and ingestion rate

The following input parameters were used for refining the conservative exposure assumptions to re-evaluate risks:

- 95% UCL surface soil and sediment concentrations
- Less conservative BAFs
- Less conservative receptor body weights and ingestion rates

7.5 RISK CHARACTERIZATION

The risk characterization is the final phase of this risk assessment that compares exposure to ecological effects. An ecological effects quotient (EEQ) approach was used to characterize the potential risk to ecological receptors. The EEQs for surface soil receptors were calculated as follows:

$$EEQ = \frac{Css}{SSSL}$$

where:

EEQ	=	Ecological Effects Quotient (unitless)
Css	=	Chemical concentration in surface soil (µg/kg or mg/kg)
SSSL	=	Surface soil screening level (µg/kg or mg/kg)

The EEQs for marine receptors were calculated as follows:

$$EEQ = \frac{Csd}{SdSL}$$

where:

EEQ	=	Ecological Effects Quotient (unitless)
Csd	=	Chemical concentration in sediment (µg/kg or mg/kg)
SdSL	=	Sediment screening level (µg/kg or mg/kg)

The EEQs for terrestrial wildlife were calculated as follows:

$$EEQ = \frac{CDI}{TRV}$$

where:

EEQ	=	Ecological effects quotient (unitless)
CDI	=	Chronic daily intake dose (mg/kg-day)
TRV	=	Toxicity reference value (NOAEL or LOAEL) (mg/kg-day)

7.5.1 Selection of Chemicals of Potential Concern

The first part of the evaluation is selection of chemicals of potential concern (COPCs). Chemicals that are not selected as COPCs are assumed to present negligible risk to ecological receptors and are not considered for further evaluation in step 3A. Chemicals that are initially selected as COPCs are evaluated further in step 3A to determine if they should be retained as COPCs. Ecological COPCs were selected using the following procedures:

- Chemicals with EEQs greater than 1.0 (using screening values and maximum chemical concentrations) were retained as COPCs for further evaluation because they have a potential to cause risk to ecological receptors.

- Chemicals with EEQs greater than 1.0 based on the food chain model using NOAELs and the conservative exposure scenario were retained as COPCs because they have the potential to cause risk to higher trophic level mammals and birds.

- Chemicals without screening values were retained as COPCs but are only evaluated qualitatively.

- Calcium, magnesium, potassium, and sodium were not retained as COPCs because they are essential nutrients that can be tolerated by living systems even at high concentrations. No evidence indicates that these chemicals are related to site operations, and they are not considered hazardous chemicals.

7.5.1.1 COPCs for Terrestrial Invertebrates and Plants

Table 7-4 presents the chemicals that were retained as COPCs in surface soil for potential risks to plants and invertebrates. It also presents the chemicals that were retained for food chain modeling for mammals and birds, but these are discussed in Section 7.5.1.3.

Terrestrial Invertebrates

The following chemicals were selected as COPCs for terrestrial invertebrates because they were detected at concentrations that exceeded screening levels:

- 11 PAHs
- 9 pesticides
- 5 inorganics (plus aluminum because the soil pH was not reported)

The following chemicals were selected as COPCs for terrestrial invertebrates because they did not have screening levels:

- 1 propellant
- 2 VOCs
- 3 SVOCs
- 2 pesticides
- 4 inorganics
- Diesel range organics

Terrestrial Plants

The following chemicals were selected as COPCs for terrestrial plants because they were detected at concentrations that exceeded screening levels:

- 11 PAHs
- 10 pesticides
- 9 inorganics (plus aluminum and iron because the soil pH was not reported)

The following chemicals were selected as COPCs for terrestrial plants because they did not have screening levels:

- 1 propellant
- 2 VOCs
- 19 SVOCs, including 16 PAHs
- 2 pesticides
- Diesel range organics

7.5.1.2 COPCs for Benthic Invertebrates

Table 7-5 presents the chemicals that were selected as COPCs in 0 to 6 inch sediment samples for potential risks to benthic invertebrates. Eleven PAHs [plus high molecular weight (HMW) PAHs, low molecular weight (LMW) PAHs, and total PAHs] and five inorganics were retained as COPCs because they were detected at concentrations that exceeded screening levels. One inorganic was retained as a COPC because no sediment screening level was available.

Table 7-6 presents the chemicals that were selected as COPCs in greater than 6 inch sediment samples for potential risks to benthic invertebrates. Although benthic organisms are most likely exposed to only the top 6 inches of sediment, the subsurface sediment may be exposed through erosion and is therefore considered for risks to invertebrates. Nine PAHs (HMW PAHs, LMW PAHs, and total PAHs) and seven

inorganics were retained as COPCs because they were detected at concentrations that exceeded screening levels. One inorganic was retained as a COPC because no sediment screening level was available.

7.5.1.3 COPCs for Mammals and Birds

Table 7-4 presents the chemicals that were retained for food chain modeling for terrestrial mammals and birds because they were detected at concentrations above screening levels or did not have screening levels for mammals or birds. Because the sediment screening levels are not based on risks to wildlife, all detected chemicals, except the essential nutrients, were retained for food chain modeling.

Tables 7-7, 7-8, 7-9 summarize the results of the conservative inputs food chain modeling for terrestrial and piscivorous receptors (0 to 6 inches and greater than 6 inches), respectively. Appendix F presents the calculation worksheets (Appendix F Tables 7, 8, 10, 12, 14, 16, 17, 19, 21, 22, and 24). Chemicals were selected as COPCs if their EEQs were greater than 1.0 using conservative exposure assumptions (i.e., maximum detected chemical concentrations and conservative exposure parameters) and NOAELs as the TRVs. The following summarizes the results of the food chain modeling using maximum concentrations and conservative input parameters:

- Neither VOC had an EEQ greater than 1.0 for the terrestrial food chain model, but TRVs were not available for birds.

- Nitroglycerin was the only explosive with an EEQ greater than 1.0 in the food chain model. Neither explosive had TRVs for birds.

- Carbazole, dibenzofuran, and most of the PAHs had EEQs greater than 1.0 in the food chain model. No bird and/or mammal TRVs were available for two of the SVOCs.

- Several pesticides and Aroclor-1260 had EEQs greater than 1.0 in the food chain model. Heptachlor epoxide was the only pesticide that did not have a TRV for birds.

- Several inorganics had EEQs greater than 1.0 in the food chain model. Avian TRVs were not available for three inorganics.

7.6 STEP 3A REFINEMENT

Step 3a consists of a refinement of the conservative exposure assumptions/concentrations to evaluate the potential risks to ecological receptors (i.e., plants, invertebrates, and wildlife receptors). The objective of the Step 3a refinement is to better define those chemicals that contribute to potentially unacceptable levels of ecological risk, and to identify and eliminate from further consideration those COPCs that were retained because of the use of very conservative exposure scenarios. The Step 3a evaluation is designed to eliminate chemicals from further evaluation for certain groups of receptors. For example, a chemical may be eliminated as a COPC in soil based on risks to soil invertebrates and plants but may be retained for evaluating risks to wildlife.

Although a formal soil background comparison was not conducted, if the maximum concentrations of the inorganic chemicals in the site samples were less than the maximum concentrations in the background samples (MmSS soil type) from the Basewide Background Study (Tetra Tech 2008), then the inorganic chemical was eliminated from further evaluation in this risk assessment. This occurred for the following chemicals: aluminum and beryllium.

7.6.1 Terrestrial Plants and Invertebrates

Acetone in the surface soil samples was selected as a COPC because a screening level was not available. VOCs are not typically very toxic to plants or invertebrates via direct contact as indicated by the relatively high screening levels for the other VOCs (see Table 7-1). The maximum concentration of acetone was well below the available VOC screening levels. Acetone is a common laboratory contaminant and is not a chemical of ecological concern that warrants further evaluation at this site.

One explosive (nitroglycerin) in the surface soil samples was selected as a COPC because screening levels were not available for plants or invertebrates. Because toxicity data are not available, risks to plants and invertebrates cannot be determined. However, because nitroglycerin was detected in all nine surface soil samples (with a maximum detected concentration of 16 mg/kg) and because it is related to site activities, nitroglycerin is retained as a COPC.

Many SVOCs, including PAHs were selected as COPCs because they were detected at concentrations that exceeded screening levels or did not have screening levels. Several PAHs were detected at concentrations that exceeded invertebrate screening levels, while plant screening levels were not available for most PAHs. Because of the very high concentrations of the PAHs and their high detection frequency, PAHs are retained as COPCs.

The non-PAH SVOCs that were selected as COPCs include: 1,1-biphenyl, carbazole, dibenzofuran, and n-nitrosodiphenylamine. 1,1-Biphenyl did not have an invertebrate screening level but was only detected in 1 of 23 samples. Therefore, it is not likely to be a significant risk driver at the site and is eliminated from further evaluation. Carbazole and dibenzofuran did not have plant or invertebrate screening levels and n-nitrosodiphenylamine did not have a plant screening level. These chemicals were detected in approximately one third of the samples, but because of the lack of toxicity data, these chemicals cannot be evaluated further. Based on the much greater concentrations of the PAHs at the site, and the availability of toxicity data for PAHs, it is likely that risks from these three SVOCs should be accounted for by evaluating risks to PAHs. Therefore, carbazole, dibenzofuran, and n-nitrosodiphenylamine are eliminated as COPCs for these receptors.

Several pesticides selected as COPCs for plants and invertebrates because they were detected at concentrations that exceeded screening levels or did not have screening levels. Although no plant studies that were eligible to derive an Eco-SSL according to the Eco-SSL guidance (EPA, 2007), the NOECs and maximum acceptable toxicant concentrations for the studies that met the study acceptance criteria ranged from 7,100 µg/kg to 50,000 µg/kg. Based on these data, it is not likely that the low concentration of dieldrin at the site (190 µg/kg) will impact plants. The source of the screening levels for the other pesticides is the Dutch Target Values (MHSPE, 2006). The toxicological basis of the Target Values is not known. However, based on the plant and invertebrate screening level for 4,4'-DDT (12,000 µg/kg) and the concentrations presented above for dieldrin, it is not likely that the concentrations of the other pesticides at the site (most detections were less than 100 µg/kg while the maximum concentration was 480 µg/kg). Therefore, pesticides are eliminated as COPCs for these receptors.

Several inorganics were selected as COPCs because they were detected at concentrations that exceeded screening levels or they did not have screening levels. Some of these metals are unlikely to cause risks to plants or invertebrates because their concentrations may only slightly exceed screening levels, concentrations only exceed the screening levels in a few samples, or they may not be bioavailable. However, because this a risk assessment to determine whether the site need to proceed to an RI, metals are retained as COPCs.

7.6.2 Benthic Invertebrates

The following section presents the evaluation of risks to sediment invertebrates from chemicals detected in the sediment samples collected from 0 to 6 inches and from greater than 6 inches.

Sediment samples collected from 0 to 6 inches

Maximum concentrations of arsenic, copper, lead, manganese, and nickel exceeded sediment screening levels, which is why they were selected as COPCs. Beryllium was retained as a COPC because no sediment screening level was available. However, the maximum detected concentration (0.28 mg/kg) was lower than the maximum concentration in background samples collected for the McAllister Point Landfill 2008 sampling event (0.29 mg/kg) (ECOR, 2009). Therefore, beryllium is not likely related to site activities.

The maximum concentrations of arsenic (8.9 mg/kg), copper (207 mg/kg), and nickel (23.6 mg/kg) are lower than their Effects Range-Median (ER-M) values (70 mg/kg, 270 mg/kg, and 51.6 mg/kg for arsenic, copper, and nickel) from Long et al., (1995), which are higher effects levels (concentrations above which impacts are probably). In addition, the concentrations of arsenic and nickel just slightly exceed their screening levels. Manganese does not have a higher-effects level, and lead exceeded its ER-M in one sample. The samples with the greatest metals concentrations and the only ones that exceeded screening levels (except for lead) were collected at locations CRP-SD01 and CRP-SD02. Lead concentrations were greater than its screening level at most locations, but only exceeded its ER-M at CRP-SD02. CRP-SD01 and CRP-SD02 are the only two sediment samples located along the shoreline. Therefore, potential risks to sediment invertebrates from metals, except lead, are confined to this area. Potential risks to sediment invertebrates from lead may extend further from the shoreline based on its exceedences of the screening level, however, exceedences of the screening level do not necessarily indicate that impacts will occur, just that they are possible.

PAHs were evaluated as HMW PAHs, LMW PAHs, and total PAHs because the toxicity of PAHs to sediment invertebrates has been reported to be additive and several studies have reported toxicity data for total PAHs (Di Toro, et al., 2000). Maximum concentrations of HMW PAHs (8,430 µg/kg), LMW PAHs (1,101µg/kg), and total PAHs (9,531 µg/kg) were less than their respective ER-M values (9,600 ug/kg, 3,160 µg/kg, and 44,792 µg/kg). Similar to metals, the samples with the greatest PAH concentrations and the only ones that exceeded screening levels were collected at locations CRP-SD01 and CRP-SD02. The concentrations of all three PAH groups exceeded the screening level at CRP-SD01 but only the concentration of HMW PAHs exceeded the screening level at CRP-SD02. In fact, PAHs were not detected in most of the sediment samples. Therefore, potential risks to sediment invertebrates from PAHs are confined to the area along the shoreline.

Sediment samples collected from greater than 6 inches

Maximum concentrations of antimony, arsenic, cobalt, copper, lead, manganese, and nickel exceeded sediment screening levels, which is why they were selected as COPCs. Beryllium was retained as a COPC because no sediment screening level was available. However, the maximum detected concentration (0.33 mg/kg) was just slightly greater than the maximum concentration in background samples collected for the McAllister Point Landfill 2008 sampling event (0.29 mg/kg) (ECOR, 2009). Therefore, beryllium is not likely related to site activities.

The maximum concentrations of antimony (3.3 mg/kg), arsenic (19.4 mg/kg), copper (47.9 mg/kg), and nickel (47.4 mg/kg) are lower than their ER-M values (listed above for arsenic, copper, and nickel) from Long et al., (1995) and ER-M from Long and Morgan (1991) for antimony (25 mg/kg). Similar to sediment in the 0 to 6 inch interval, the samples with the greatest metals concentrations and the only ones that exceeded screening levels (except for lead) were collected at locations CRP-SD01 and CRP-SD02. Lead concentrations were greater than its screening level at most locations, but only exceeded its ERM at CRP-SD02. CRP-SD01 and CRP-SD02 are the only two sediments samples located along the shoreline. Therefore, potential risks to sediment invertebrates from lead my extend further from the shoreline based on its exceedences of the screening level, however, exceedences of the screening level do not necessarily indicate that impacts will occur, just that they are possible.

Cobalt and manganese do not have higher-effects levels, and lead exceeded its ER-M in one sample. The samples with the greatest metals concentrations and the only ones that exceeded screening levels (except for lead) were collected at locations CRP-SD01 and CRP-SD02. Lead concentrations were greater than its screening level at most locations, but only exceeded its ER-M at CRP-SD02. CRP-SD01 and CRP-SD02 are the only two sediment samples located along the shoreline. Therefore, potential risks to sediment invertebrates from metals, except lead, are confined to this area. Potential risks to sediment invertebrates from lead may extend further from the shoreline based on its exceedences of the screening level, however, exceedences of the screening level do not necessarily indicate that impacts will occur, just that they are possible.

PAHs were evaluated as HMW PAHs, LMW PAHs, and total PAHs as discussed above. Maximum concentrations of HMW PAHs (5,380 µg/kg), LMW PAHs (629 µg/kg), and total PAHs (6,009 µg/kg) were less than their respective ER-M values (9,600 ug/kg, 3,160 µg/kg, and 44,792 µg/kg). Similar to metals, the samples with the greatest PAH concentrations and the only ones that exceeded screening levels were collected at locations CRP-SD01 and CRP-SD02. The concentrations of all three PAH groups exceeded the screening level at both locations. In fact, PAHs were not detected or were detected at very low

concentrations in the remaining samples. Therefore, potential risks to sediment invertebrates from PAHs are confined to this area.

7.6.3 Mammals and Birds

This section presents the results of the refined food chain model as well an evaluation of the lead shot data in the sediment with regards to its potential risks to birds.

7.6.3.1 Food Chain Risks

The EEQs from the terrestrial food chain modeling were greater than 1.0 for several chemicals using maximum chemical concentrations and conservative exposure assumptions (see Section 7.5.1.3). Therefore, as part of the Step 3a refinement, risks for this pathway were recalculated using average chemical concentrations in surface soil, sediment, and tissue samples and less conservative exposure assumptions (i.e., average ingestion rates, average body weights) (see Table 7-3).

Tables 7-10, 7-11, 7-12 summarize the results of the less conservative inputs food chain modeling for terrestrial and piscivorous receptors (0 to 6 inches and greater than 6 inches), respectively. Appendix F presents the calculation worksheets (Appendix F Tables 7, 9, 11, 13, 15, 16, 18, 20, 21, 23, and 25). A discussion of the risks to mammal and birds are presented below.

As presented above, aluminum and beryllium were determined to be detected at concentrations less then background so they were not included in the refined food chain model for piscivorous wildlife.

Also, aluminum and vanadium concentrations in the sediment samples at the site were less that than the maximum concentration in background samples collected for the McAllister Point Landfill 2008 sampling event (10,500 mg/kg and 22.7 mg/kg for aluminum and vanadium, respectively) (ECOR, 2009). Beryllium was also detected at concentrations less than or just slightly greater than background concentrations as discussed in Section 7.6.2. Therefore, these metals are not related to site activities and were not included in the refined food chain model for piscivorous wildlife.

Terrestrial Receptors

- Nitroglycerin was the only explosive with an EEQ greater than 1.0 in the food chain model. It had an EEQ of 3.0 for the shrew using the NOAEL as the TRV; the EEQ was less than 1.0 using the LOAEL as the TRV. Because explosives are site-related, they are not eliminated as COPCs for terrestrial receptors.

- Neither VOC had an EEQ greater than 1.0, however, EEQs could not be calculated for birds because TRVs were not available. Based on the extremely low EEQs for mammals, and because VOCs do not bioaccumulate in tissue, VOCs are not a concern for wildlife and are eliminated as COPCs for these receptors.

- With the exception of an EEQ of 2.6 for carbazole based on risks to the shrew, none of the non-PAH SVOCs had EEQs greater than 1.0. Similar to the discussion for plants and invertebrates, based on the much greater concentrations of the PAHs at the site and the greater EEQs, it is likely that risks from carbazole should be accounted for by evaluating risks to PAHs. Therefore, carbazole (and the other non-PAH SVOCs) are eliminated as COPCs for wildlife.

- Several of the PAHs have EEQs greater than 1.0 using the NOAEL as the TRV, and three have EEQs greater than 1.0 using the LOAEL as the TRV. Even though it is not likely that the PAHs will be bioavailable because they are bound up the skeet, they are retained as COPCs to be conservative.

- Aroclor-1260 had EEQs greater than 1.0 in the food chain model using the NOAEL and LOAEL as the TRV. Therefore, Aroclor-1260 is retained as a COPC.

- Several pesticides have EEQs greater than 1.0 using the NOAEL as the TRV; dieldrin was the only one to have an EEQ greater than 1.0 using the LOAEL as the TRV. With the exception of dieldrin, the EEQs for the other pesticides were low (less than 3.5) so risks from these pesticides are not likely. Because they are not related to site activities, they are eliminated as COPCs for wildlife. The EEQs for dieldrin are so high because of the extremely low and conservative TRV values. The maximum detected dieldrin concentration was 0.19 mg/kg, and dieldrin was only detected in 8 of 14 samples. Five of the detections were less than 0.01 mg/kg, while the other two were 0.032 mg/.kg and 0.04 mg/kg. Therefore, these concentrations are representative of historical use and not disposal activities. For that reason, dieldrin is also eliminated as a COPC for wildlife.

- Several of the inorganics had EEQs greater than 1.0 using the NOAEL as the TRV, and four have EEQs greater than 1.0 using the LOAEL as the TRV. One of those four is iron, which is not likely to be bioavailable or even site related. The other three are copper, mercury, and zinc. The maximum concentration of mercury is relatively low (0.17 mg/kg), and most of the detections are less than or just slightly greater than the maximum background concentration (0.056 mg/kg). Therefore, there is uncertainty in whether it is site-related. However, because several metals do

have HQs greater than 1.0, and because some of the metals are related to site activities, metals are retained as COPCs.

- No TRVs are available for DRO so it could not be evaluated in the food chain model. However, because the samples were analyzed for VOCs and SVOCs, the main constituents in DRO would be accounted for in those results. For that reason, DRO is eliminated as a COPC for wildlife.

Piscivorous Receptors (0 to 6 inch and greater than 6 inch samples)

- None of the PAHs have EEQs greater than 1.0 using the NOAEL as the TRV. Therefore, PAHs in sediment are eliminated as COPCs for these receptors.

- Iron was the only inorganic with an EEQ greater than 1.0 using the NOAEL as the TRV; it also had an EEQ greater than 1.0 using the LOAEL as the TRV. Iron is not typically considered bioavailable and it is not likely that piscivorous wildlife is being impacted by iron. Also, although it was detected at concentrations that exceeded background concentrations, iron is not expected to be related to site activities. Therefore, iron eliminated as a COPC for these receptors.

7.6.3.2 Risks from Ingestion of Lead Shot

In addition to the risks to birds from ingesting sediment and fish containing metals and PAHs, birds can also be harmed by ingesting lead shot pellets from the sediment. Although the acceptable number of lead shot can be developed using site-specific data, for this initial assessment, a number of 10 shot pellets per square foot was used to determine whether the area needs additional evaluation. The number is based on two studies. In an ecological risk assessment for the Prime Hook National Wildlife Refuge (USFWS, 2000), based on a model it was determined that a dove has a 10 percent probability of ingesting shot at levels of approximately 9 shot pellets/ft^2. Also, in an ecological risk assessment for the Nahant Marsh (USFWS, 1998), a value of 10 shot pellets/ft^2 was used to screen for waterfowl. This value was based on previous work conducted by Irwin and Karstad (1972).

Table 4-5 lists the number of shot pellets per square foot. Most of the sediment samples had greater than 10 shot pellets/ft^2. In fact, most of those samples had greater than 100 shot pellets/ft^2 and several of those samples had greater than 1,000 shot pellets/ft^2. Therefore, birds are at potential risk from the ingestion of shot pellets in the sediment adjacent to the site.

7.7 SUMMARY/CONCLUSIONS

This section presents a summary of the conclusions of the ecological risk assessment that was conducted for the site.

7.7.1 Risks to Terrestrial Plants and Invertebrates

Nitroglycerin was not eliminated as a COPC for risks to plants and invertebrates because although toxicity data are not available, it was detected in all nine surface soil samples and it is related to site activities.

Several PAHs were detected at concentrations that exceeded invertebrate screening levels (plant screening levels were not available for most PAHs). Because of the very high concentrations of the PAHs and their high detection frequency, PAHs are retained as COPCs.

Several inorganics were detected at concentrations that exceeded screening levels or they did not have screening levels. Therefore, metals were retained as COPCs.

7.7.2 Benthic Invertebrates

Several inorganics were detected at concentrations that exceeded their screening levels in both the 0 to 6 inch and greater than 6 inch sediment sample data sets. Lead was the only inorganic that exceeded its higher effect level, although higher effects values were not available for cobalt and manganese. The samples with the greatest metals concentrations and the only ones that exceeded screening levels (except for lead) were collected at locations CRP-SD01 and CRP-SD02. Lead concentrations were greater than its screening level at most locations, but only exceeded its ER-M at CRP-SD02. CRP-SD01 and CRP-SD02 are the only two sediment samples located along the shoreline. Therefore, potential risks to sediment invertebrates from metals, except lead, are confined to this area. Potential risks to sediment invertebrates from lead may extend further from the shoreline based on its exceedences of the screening level, however, exceedences of the screening level do not necessarily indicate that impacts will occur, just that they are possible.

Maximum concentrations of HMW PAHs, LMW PAHs, and total PAHs were less than their respective ER-M values in all sediment samples. Similar to metals, the samples with the greatest PAH concentrations and the only ones that exceeded screening levels were collected at locations CRP-SD01 and CRP-SD02. In fact, PAHs were not detected in most of the sediment samples. Therefore, potential risks to sediment invertebrates from PAHs are confined to the area along the shoreline.

7.7.3 Mammals and Birds

This section presents the results of the refined food chain model as well an evaluation of the lead shot data in the sediment with regards to its potential risks to birds.

The following chemicals were retained as COPCs for terrestrial wildlife because they had EEQs greater than 1.0 in the food chain model and are related to site activities:

- Nitroglycerin
- PAHs
- Aroclor-1260
- Inorganics

No chemicals were retained as COPCs for piscivorous wildlife.

Because of the high number of lead shot pellets per square foot, birds are at potential risk from the ingestion of shot pellets in the sediment adjacent to the site.

8.0 SUMMARY AND CONCLUSIONS

This section has been prepared to present a summary of the information collected during the Site Investigation at the MRP Site 1 (Carr Point). This section also presents the conclusions of the SI.

The Site Investigation was conducted to determine if MC and/or other contaminants are present at the Site, and if the concentrations at which they are present could indicate a potential for risk to human health or the environment.

8.1 PHYSICAL PROPERTIES OF THE SITE

MRP Site 1, Carr Point is located in the "Melville South" portion of Portsmouth, RI, approximately four miles north of the main portion of the installation (Figure 1-1). The site is mostly level with topography ranging from 0 to 12 ft above mean sea level (MSL).

There are three main portions of the site, the camping area, located to the north, is the former location of the firing arcs where the recreational skeet range was based, and is currently used as a seasonal RV camping area between Memorial Day and October 30. The central portion of the site is occupied by a gated storage area. The NAVSTA Newport MWR operates this storage area for Navy personnel to store vehicles, recreational vehicles, and boats during off-season and other periods. The gated storage area is fenced and locked. The southern area is currently unused, and is mostly vegetated except where this vegetation was removed for the purposes of this Site investigation. The southern area was previously used as a bulk materials storage area, as noted in the work plan and QAPP for the site investigation. Site topography is generally flat with a mean elevation of approximately 25 ft above sea level. The former Carr Point Shooting Range is mostly level, and a small vegetated bluff is present on the west side of the site sloping steeply to a stony beach.

Surface waters in the areas upgradient of the site (land occupied mostly by Tank Farms 3 and 4) drain primarily to Lawton Brook and Normans Brook, respectively. Since the former Carr Point Shooting Range is located in between these areas, it is reasonable to conclude that surface water drains from the site to Lawton Brook and Normans Brook. These two streams discharge directly into Narragansett Bay.

According to the United States Department of Agriculture Soil Survey of Rhode Island, two soil map units occur on the site: beaches (Ba) and Merrimac sandy loam (MmA). Beach soils are mapped on the northwestern half of the site, along the shoreline. Merrimac sandy loam is mapped on the southeastern half of the site. Merrimac sandy loam is characterized as a nearly level, somewhat excessively drained soil on outwash plains and terraces.

The overburden at the site generally consisted of silt, sand, and gravel in various proportions, with occasional minor amounts of clay. With increasing depth, the soil generally became more compacted and the color changed from brown and dark brown to dark gray. There were no distinct compositional units that could be correlated among the boring locations.

The depth to bedrock ranged from 17 ft at the southern most boring SB07 to 39 ft in the northern most boring. The bedrock encountered consisted of dark gray phyllite, which is common in outcrops on the shoreline and in upland areas in the vicinity.

The depth to groundwater at the site ranged from 4.41 ft below the top of the PVC riser (bpvc) and at the rail spur to 11.94 ft bpvc in the camping area. The relative elevation of each monitoring well was determined by a State of Rhode Island registered land surveyor. As expected from the local topographic gradient, groundwater appears to flow to the northwest towards Narragansett Bay.

An intertidal gravel and sand beach extends the length of the western extend of the site. Sub-tidal sand (depositional) is found offshore in this same area. Three macroalgal beds on sand substrate are located offshore in Normans Brook to the southeast of the site, and Lawton Brook to the northeast of the site. A fringe gravel terrace and fringing sand flat are located adjacent to the discharge area of Normans Brook. The shoreline associated with Carr Point, extending north to Melville-North, is mapped as an inter-tidal sand beach with limited area of back beach. The shoreline north of Lawton Brook is mapped as an inter-tidal gravel beach.

Water currents appeared to be tidally and wind – driven. NOAA documents an ebb tide current of 0.6 knots to the south west and a flood tide of 0.8 knots to the NE. Sediments included silts and sands up to 12 in below the sediment/water interface, underlain by a dense sand/gravel mix that is presumed to be a compacted material similar to a glacial till. Closer to the shoreline and within the intertidal areas, the sands were dominated by stones and cobbles, consistent with the shingle beaches that are naturally present on the west shoreline of Aquidneck Island.

8.2 CONTAMINANTS FOUND

Elevated concentrations of PAHs and propellants were found in the surface soil at the former firing areas (Camping Area). This finding is supported by the historic use of this area. Research indicates that clay targets were historically manufactured with petroleum pitch, which is blended with the clay. The fragments of clay target found in surface soil at SB-09, located at the Northern extreme of the ARC1 indicates that the PAHs in this area are likely a result of those targets. Broken targets could have been compiled in this area during the use of the site as a firing range. The concentrations of PAHs decreases from north to

south in the area of the former firing arcs. Decreasing concentrations of propellants detected in surface soil from north to south also supports this possibility.

Presence of PCBs (Aroclor 1260) was limited to the surface soil at the gated storage area and at the outfall downgradient of this area. This indicates a possible historic release that was probably localized and is not indicative of the site as a whole.

Analytical data from subsurface soil investigations show that the elevated concentrations of PAHs found on the surface soils, particularly in the Camping Area at the north end of the site do not extend into the subsurface soil. Traces of chlorinated solvents were noted in the area of the former oil water separator, and metals are present throughout the site. PCBs were not detected exceeding criteria at depth at SB02 and SB10 where elevated detections were found in the surface soil.

No significant elevated concentrations of metals were noted in surface and subsurface soil, with the exception of arsenic. Arsenic was reported above the RIDEM criteria of 7.0, however, this is a common occurrence on Aquidneck Island.

Analysis of groundwater samples indicated elevated concentrations of VOCs, particularly trichoroethene, tetracholoroethene and benzene. These elevated concentrations were localized, and found in samples from wells in the southern storage area (MW-08) and downgradient of the drum storage area (MW-04).

In sediment samples collected, elevated concentrations of metals were noted in the skeet target area at locations SD01 and SD02. These two locations are closest to the shore, and are accessible during low tide. Lead appears to be present above PALs at nearly all sampling locations. PAHs were not particularly elevated in sediment samples collected.

Although not always found at both sample intervals, lead pellets were found at every sediment sample location. Three samples did not contain any lead pellets, and an additional three samples contained lead pellets at concentrations below the site action level of 10 pellets/ft^2. Areas with the highest lead pellet concentrations occur in the middle of the sampling area (distant portions of the target area and closer portions of the overshoot area), with the highest pellet concentrations for surface and subsurface sediments existing at SD11, of 6,128 pellets/ft^2 and 3,281 pellets/ft^2, respectively.

8.3 POSSIBILITY OF RISK FROM CONTAMINANTS

Comparison of soil data collected to human health screening criteria indicates that there is a potential for risk to human health under a residential land use scenario from PAHs and the propellant nitroglycerine

found in surface soil in the Camping Area, and from PCBs in surface soil at the gated storage area and adjacent to a storm drain outfall near that gated area. In addition, there could be a potential for risk to human health from metals present in surface and subsurface soils throughout the site, although some of these metals may be a result of natural (background) conditions.

Actual risks to persons using the sites will be tempered by the presence of the maintained grass ground cover, and limitations of the use of the site as a camping area. Potential for risk assumes use of a property under a residential scenario, and the use as a campground will not include the same exposures. In addition, the bioavailablity of the PAHs as part of clay targets has been documented by previous studies, and this limited bioavailability is likely to reduce the actual risks to any persons interacting with this clay material that has become mixed with the soil.

Comparison of groundwater data to screening criteria shows that there is a potential for risk to human health from VOCs in groundwater in the southern storage area. This potential risk is due to the presence of benzene, tetrachloroethene, and trichloroethene in groundwater near and downgradient of the former drum storage area and the former oil water separator.

Concentrations of contaminants present in the marine sediments adjacent to the site do not appear to pose a potential for risk to human health.

Concentrations of contaminants found in the site surface soil and sediment may pose a potential for risk to terrestrial plants, benthic invertebrates, mammals, and birds. There is a potential risk to ecological receptors from nitroglycerine, PAHs, metals, and Aroclor-1260 in surface soil and from metals in sediment. In addition, the presence of lead shot in the sediment of the former target area and the former overshoot area, located west of the firing arcs, pose a potential risk to birds from the ingestion of the shot pellets.

8.4 CONCEPTUAL SITE MODEL

The conceptual site model established for the Work Plan and QAPP has been updated using the information collected as a part of this Site Investigation. The Revised Conceptual Site model is provided as Figures 8-1 through 8-4.

Figure 8-1 presents the First tier conceptual site model, showing the historic conditions. This figure provides a visual depiction of the contaminant sources based on historic site use: These include propellants and lead shot from firing sporting guns from the site, clay targets used at the site, and various materials and chemical storage at the site.

Figure 8-2a and 8-2b presents the second tier conceptual site model, showing the current conditions. Two figures are presented because two areas could be defined by prior use and by contaminants found. Figure 8-2a presents the current conditions at the campground area, which include the presence of propellants confirmed in the surface soil, and presence of PAHs present likely as a result of extensive use of clay targets which are known to be formulated with petroleum pitch and clay. Offshore of this area, is intertidal and depositional marine sediment containing significant quantities of lead shot.

Figure 8-2b presents the current conditions at the storage areas. This area is used less frequently, and has been found to contain PCBs and PAHs in surface soil, as well as VOCs in groundwater. These contaminants are likely to have been provided to these media from storage of chemicals and other equipment, including transformers from other portions of NAVSTA. In addition, the presence of the oil water separator indicates that contaminants may have been discharged with water from this structure at some time in the past.

Figure 8-3 is an initial sketch of the third tier of the conceptual site model. This figure presents a summary of the exposure pathways and potential for risks. Because the potential for risk is suspected, a remedial investigation should be conducted to quantify these risks. Once a quantified risk assessment is conducted, the confirmed exposure pathways will be defined, and the risk to the receptors identified can be included in this third tier of the model. After this information is included, those media and the contaminants that pose unacceptable risk can be identified for evaluation of cleanup alternatives in a feasibility study.

8.5 CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the Site Investigation report, there are contaminants found at MRP Site 1 Carr Point that may pose a potential for risk to human health and the environment. Two distinct sets of contaminants are found in two distinct areas of the site, and are likely to be present as a result of two different activities:

- PAHs, and propellants in soil at the camping area, and lead shot in sediment offshore of the camping area appear to be present as a result of former sport skeet shooting at this location.

- Lead, PAHs and other metals are present along the shoreline, metals possibly as a combined result of background minerals present in soil, lead possibly as a result of shot present in the active intertidal zone, and PAHs possibly present as skeet fragments that have been reduced to small particles in the sand/gravel in the active intertidal zone.

- VOCs are present in groundwater, and PCBs are present in soil at the storage area, and are likely to be present as a result of spills or leaks during the use of this area for drum and transformer storage.

Due to these distinct differences in the areas of the site, it is recommended that the site be split into two portions – one being the former shooting range, and the other being the former storage areas. Further investigations should be conducted at both under appropriate environmental cleanup programs.

TABLES

TABLE 2-1
WATER LEVEL SUMMARY
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, PORTSMOUTH RI

WELL ID	ELEVATION (top of PVC)	WATER LEVEL 6/16/09 (2-3hrs after low tide)		WATER LEVEL 6/16/09 (2-3hrs after high tide)	
		ft below TOR	Elevation	ft below TOR	Elevation
MW01	16.71	11.96	4.75	11.94	4.77
MW02	15.22	11.21	4.01	11.11	4.11
MW03	20.98	9.96	11.02	9.94	11.04
MW04	17.16	10.69	6.47	10.70	6.46
MW05	19.51	6.41	13.10	4.41	15.10
MW06	19.12	9.12	10.00	9.13	9.99
MW07	19.14	8.42	10.72	8.42	10.72
MW08	19.27	11.58	7.69	11.56	7.71

TABLE 3-1
TEST PIT SAMPLE SUMMARY
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, PORTSMOUTH, RI

LOCATION	SAMPLE ID	DATE SAMPLED	SAMPLE TIME	SAMPLE DEPTH (ft)	DESCRIPTION
TP01A	CRP-TP01A-0506	5/11/2009	1040	5-6	Excavated to expose the pipe leading into the OWS to determine if there is any visual evidence of contamination, and collect a soil sample at that spot
TP01B	CRP-TP01B-0506	5/11/2009	1020	5-6	Excavated to expose the pipe leading into the manhole located north of the OWS to determine if there is any visual evidence of contamination
	CRP-TP01B-0708	5/11/2009	1250	7-8	Excavated to expose the pipe leading into the manhole located north of the OWS to determine if there is any visual evidence of contamination
TP01C	No Sample				Excavated to expose the side wall of the OWS to determine if there was any visual evidence of contamination
TP02	No Sample				Excavated in an attempt to locate the drain pit located in the southern storage area
TP03	No Sample				Excavated in an attempt to locate the drain pit located in the southern storage area
TP04	CRP-TP04-0506	5/12/2009	1230	5-6	Excavated in an attempt to locate the drain pit located in the southern storage area
TP05	CRP-TP05-0102	5/13/2009	0745	1-2	Excavated in an attempt to locate the drain pit located in the camper storage area located downgradient of building 212
TP06	CRP-TP06-0405	5/13/2009	0820	4-5	Excavated to locate the pipe leading from the former drum storage area to the OWS and determine if there was any visual evidence of contamination
TP07	No Sample				Excavated to determine if there was any visual evidence of contamination on the northern portion of the former drum storage area

TABLE 3-2
SOIL BORING SAMPLE FREQUENCY AND DEPTH
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, PORTSMOUTH, RI

BORING NO	DEPTH INTERVAL (FT)	PID READING (ppmv)	COMMENTS	SAMPLE ID	SAMPLE DATE	SAMPLE TIME
SB01	0-1	0	Sample collected at surface	CRP-SB01-0001	5/12/2009	1055
	2-4	0				
	4-6	0				
	6-8	0	Sample collected at GW table	CRP-SB01-0608	5/19/2009	0850
	8-10	0				
	10-12	0				
	12-14	0				
	14-16	0				
	16-18	0				
	18-20	0				
	20-22	0	Sample collected between GW table and bedrock	CRP-SB01-2022	5/19/2009	1140
	22-24	0				
	24-26	0				
	26-28	0	Sample collected above bedrock	CRP-SB01-2628	5/19/2009	1331
SB02	0-1	0	Sample collected at surface	CRP-SB02-0001	5/12/2009	0815
	2-4	0				
	4-6	0				
	6-8	0				
	8-10	0	Sample collected at GW table, DUP03	CRP-SB02-0810	5/20/2009	0947
	10-12	0				
	12-14	0				
	14-16	0				
	16-18	0	Sample collected between GW table and bedrock	CRP-SB02-1618	5/20/2009	1057
	18-20	0				
	20-22	0				
	22-24	0				
	24-26	0	Sample collected above bedrock	CRP-SB02-2426	5/20/2009	1158
SB03	0-1	0	Sample collected at surface	CRP-SB03-0001	5/12/2009	0945
	2-4	0				
	4-6	0				
	6-8	0				
	8-10	0	Sample collected at GW table	CRP-SB03-0810	5/21/2009	1214
	10-12	0				
	12-14	0				
	14-16	0				
	16-18	0	Sample collected between GW table and bedrock	CRP-SB03-1618	5/21/2009	1320
	18-20	0				
	20-22	0				
	22-24	0				
	24-26	0				
	26-28	0				
	28-30	0	Sample collected above bedrock, DUP04	CRP-SB03-2830	5/21/2009	1538
SB04	0-2	0.8	Sample collected at surface	CRP-SB04-0002	5/28/2009	1134
	2-4	5.3				
	4-6	15.2	Sample collected at elevated PID reading	CRP-SB04-0406	5/28/2009	1150
	6-8	0.9				
	8-10	0	Sample collected at GW table	CRP-SB04-0810	5/28/2009	1208
	10-12	0				
	12-14	0				
	14-16	0				
	16-18	5.1				
	18-20	0				
	20-22	0				
	22-24	0				
	24-26	0				
	26-28	0				
	28-30	0				
	30-32	0				
	32-34	0	Sample collected above bedrock	CRP-SB04-3234	5/28/2009	1407
	34-36	0				

TABLE 3-2
SOIL BORING SAMPLE FREQUENCY AND DEPTH
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, PORTSMOUTH, RI

BORING NO	DEPTH INTERVAL (FT)	PID READING (ppmv)	COMMENTS	SAMPLE ID	SAMPLE DATE	SAMPLE TIME
SB05	0-1	0	Sample collected at surface	CRP-SB05-0001	5/12/2009	1255
	2-4	4.3	Sample collected at elevated PID reading	CRP-SB05-0204	5/27/2009	0813
	4-6	0				
	6-8	0				
	8-10	0	Sample collected at GW table	CRP-SB05-0810	5/27/2009	0924
	10-12	0				
	12-14	0				
	14-16	0				
	16-18	0				
	18-20	0				
	20-22	0				
	22-24	0				
	24-26	0				
	26-28	0				
	28-30	0				
	30-32	0	Sample collected above bedrock	CRP-SB05-3032	5/27/2009	1143
SB06	0-1	0	Sample collected at surface	CRP-SB06-0001	5/13/2009	1355
	2-4	0				
	4-6	0				
	6-8	0				
	8-10	0	Sample collected at GW table	CRP-SB06-0810	5/27/2009	1513
	10-12	0				
	12-14	0	Sample collected between GW table and bedrock	CRP-SB06-1214	5/27/2009	1535
	14-16	0.5				
	16-18	4.1				
	18-20	0.7				
	20-22	4.2				
	22-24	13.8	Sample collected above bedrock, DUP06	CRP-SB06-2224	5/28/2009	0823
	24-26	4.6				
SB07	0-1	0	Sample collected at surface, DUP01	CRP-SB07-0001	5/13/2009	0815
	2-4	0				
	4-6	0	Sample collected between surface and GW table	CRP-SB07-0406	5/26/2009	1324
	6-8	0				
	8-10	0	Sample collected at GW table	CRP-SB07-0810	5/26/2009	1342
	10-12	0				
	12-14	0				
	14-16	0	Sample collected above bedrock	CRP-SB07-1416	5/26/2009	1429
	16-17	0				
SB08	0-1	0	Sample collected at surface	CRP-SB08-0001	5/13/2009	1030
	2-4	0				
	4-6	0				
	6-8	0.5				
	8-10	0	Sample collected at GW table, DUP05	CRP-SB08-0810	5/26/2009	1006
	10-12	0				
	12-14	24	Sample collected at elevated PID reading	CRP-SB08-1214	5/26/2009	1019
	14-16	0.7	Sample collected above bedrock	CRP-SB08-1416	5/26/2009	1101
	16-18	0				
SB09	0-1	0	Sample collected at surface	CRP-SB09-0001	5/12/2009	1405
	2-4	0				
	4-6	0				
	6-8	0	Sample collected at GW table	CRP-SB09-0608	5/18/2009	1004
	8-10	0				
	10-12	0.6				
	12-14	0.5	Sample collected at elevated PID reading	CRP-SB09-1214	5/18/2009	1033
	14-16	0				
	16-18	0.5				
	18-20	0				
	20-22	0.1				
	22-24	0				
	24-26	0				
	26-28	0				
	28-30	0				
	30-32	0				
	32-34	0				
	34-36	0				
	36-38	0.6				
	38-40	0	Sample collected above bedrock, DUP02	CRP-SB09-3840	5/18/2009	1415

TABLE 3-2
SOIL BORING SAMPLE FREQUENCY AND DEPTH
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, PORTSMOUTH, RI

BORING NO	DEPTH INTERVAL (FT)	PID READING (ppmv)	COMMENTS	SAMPLE ID	SAMPLE DATE	SAMPLE TIME
SB10	0-1	0	Sample collected at surface	CRP-SB10-0001	5/13/2009	1430
	2-4	0				
	4-6	0				
	6-8	0				
	8-10	0	Sample collected at GW table	CRP-SB10-0810	5/21/2009	0749
	10-12	0	Sample collected between GW table and bedrock	CRP-SB10-1214	5/21/2009	0801
	12-14	0				
	14-16	0				
	16-18	0	Sample collected above bedrock	CRP-SB10-1618	5/21/2009	0843
SB11	0-1	0	Sample collected at surface	CRP-SB11-0001	5/13/2009	1255
	2-4	0				
	4-6	0				
	6-8	0.1				
	8-10	0	Sample collected at GW table	CRP-SB11-0810	5/22/2009	0850
	10-12	0				
	12-14	0	Sample collected between GW table and bedrock	CRP-SB11-1214	5/22/2009	0901
	14-16	0				
	16-18	0	Sample collected above bedrock	CRP-SB11-1618	5/22/2009	0937
	18-20	0				
	20-21.5	0				

TABLE 3-3
SB/MW SUMMARY
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, PORTSMOUTH, RI

BORING/WELL NUMBER OR TESTPIT	LOCATION	WELL SCREEN INTERVAL	JUSTIFICATION
SB01/MW01	Fill Area Within Target Area	Well screened 5-15 ft in overburden across the water table	Determine geologic conditions in fill area (confirm presence of fill, determine depth of fill, depth to bedrock, presence of confining layers, etc). Determine presence of contaminants in fill. Determine presence of contaminants in groundwater within fill.
SB02/MW02	Fill Area Within Storage Area	Well screened 8-18 ft in overburden across the water table	Determine geologic conditions in fill area (confirm presence of fill, determine depth of fill, depth to bedrock, presence of confining layers, etc). Determine presence of contaminants in fill. Determine presence of contaminants in groundwater within fill.
SB03/MW03	Downgradient of Building 212	Well screened 10-20 ft in overburden across the water table	Determine geologic conditions in active and building area (determine presence of fill, depth to bedrock, presence of confining layers, etc). Determine presence of contaminants in soil. Determine presence of contaminants in groundwaterupgradient of storage area.
SB04/MW04	Downgradient of Former Drum Storage Area	Well screened 8-18 ft in overburden across the water table	Determine geologic conditions (presence of fill, presence of bedrock, presence of confining layers, etc). Determine presence of contaminants in soil and groundwater downgradient of storage area.
SB05/MW05	Upgradient of Former Drum Storage Area	Well screened 21-31 ft above bedrock	Determine geologic conditions and contaminant presence near rail spur (determine presence of fill, depth to bedrock, presence of confining layers, etc). Determine presence of contaminants in soil. Deterimne presence of contaminants in groundwater upgradient of storage area.
SB06/MW06	South Western Portion of Former Drum Storage Area	Well screened 8-18 ft in overburden across the water table	Determine geologic conditions in storage area (presence of fill, presence of bedrock, presence of confining layers, etc). Determine presence of contaminants in soil and groundwater in former drum storage area.
SB07/MW07	North Portion of South Storage Area, location of former drain pit	Well screened 5-15 ft in overburden across the water table	Determine geologic conditions in storage area (presence of fill, presence of bedrock, presence of confining layers, etc). Determine presence of contaminants in soil and groundwater in south storage area and at location of former drain pit.
SB08/MW08	South Portion of South Storage Area, location of former oil/water separator	Well screened 7-17 ft in overburden across the water table	Determine geologic conditions in storage area (presence of fill, presence of bedrock, presence of confining layers, etc). Determine presence of contaminants in soil and groundwater in south storage area and at locations of former oil/water separator.
SB09	Within Former Firing Area		Determine geologic conditions in skeet firing area (presence of fill, presence of bedrock, presence of confining layers, etc). Determine presence of contaminants resulting from dropped spent casings.
SB10	Central Portion of North Storage, location of former drain pit		Determine geologic conditions in storage area (presence of fill, presence of bedrock, presence of confining layers, etc). Determine presence of contaminants at location of former drain pit.
SB11	Northeast portion of former Drum Storage Area		Determine geologic conditions in storage area (presence of fill, presence of bedrock, presence of confining layers, etc). Determine presence of contaminants in soil in former drum storage area.

TABLE 3-4
MW CONSTRUCTION DETAILS SUMMARY
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, PORTSMOUTH RI

WELL	WELL TYPE	DIAMETER (inches)	SCREENED INTERVAL (feet bgs)	REFERENCE ELEVATIONS			COORDINATES	
				GROUND	OUTER CASING	INNER PVC	NORTHING	EASTING
MW01	OVERBURDEN	2	5-15	16.9	16.91	16.71	176628.4	384003.9
MW02	OVERBURDEN	2	8-18	15.4	15.43	15.22	176547.5	383930.8
MW03	OVERBURDEN	2	10-20	21.2	21.24	20.98	176372.8	384002.9
MW04	OVERBURDEN	2	8-18	17.5	17.51	17.16	176227.5	383676.4
MW05	OVERBURDEN	2	21-31	19.9	19.96	19.51	175977.7	383784.8
MW06	OVERBURDEN	2	8-18	16.6	19.46	19.12	176092.6	383648.6
MW07	OVERBURDEN	2	5-15	15.7	19.32	19.14	175960.2	383584.3
MW08	OVERBURDEN	2	7-17	15.8	19.53	19.27	176003.5	383519.9

TABLE 3-5
WELL DEVELOPMENT STABILIZATION CRITERIA
MRP SITE 01, CARR POINT
NAVSTA NEWPORT, PORTSMOUTH, RI

WELL ID	DEVELOPMENT DATE	SCREENED INTERVAL (bgs)	PUMP TYPE	INITIAL CLOCK TIME	FINAL CLOCK TIME	WATER DEPTH BELOW MP	CUM. VOLUME PURGED (gal)	TEMP (C°)	SPEC COND (µS/cm)	PH	TURBIDITY (NTU)	COMMENTS
MW01	5/29/2009	5-15	waterra	1120	1330	12.05	5	11.01	460	6.50	off scale	pumped dry and allowed recharge
MW02	5/28/09 & 5/29/09	8-18	waterra	1552	0825	14.64	30	11.63	270	6.30	off scale	turbidity did reach low at 39.5
MW03	5/29/2009	10-20	waterra	0845	1045	19.40	40	11.31	232	6.28	42.3	
MW04	6/2/2009	8-18	waterra	0813	1015	13.73	7.5	12.59	311	6.34	off scale	pumped dry and allowed recharge
MW05	6/1/2009	21-31	waterra	1520	1720	17.30	20	12.31	187	6.24	296	pumped dry and allowed recharge
MW06	6/1/2009	8-18	waterra	1745	1945	15.27	12	11.16	202	6.13	off scale	pumped dry and allowed recharge
MW07	6/1/2009	5-15	waterra	1143	1401	15.31	60	15.03	68	5.71	119	
MW08	6/1/2009	7-17	waterra	0939	1410	17.80	12	11.58	144	5.80	off scale	pumped dry and allowed recharge

TABLE 3-6
MW SAMPLING STABILIZATION CRITERIA
MRP SITE 01, CARR POINT
NAVSTA NEWPORT, PORTSMOUTH, RI

WELL ID	DATE	START TIME	END TIME	WATER DEPTH	PURGE RATE (ml/min)	CUM. VOLUME PURGED (gal)	TEMP (C°)	SPECIFIC COND. (µS/cm)	DO (mg/L)	PH	ORP (mV)	SALINITY (ppth)	TURBIDITY (NTU)	COMMENTS
MW01	6/1/2009	1340	1455	12.87	100	2.5	12.03	235	6.18	6.33	26.0	0.11	5.67	
MW02	6/2/2009	1229	1344	11.55	90	3	12.00	279	1.01	6.24	-58.3	0.13	39.2	
MW03	6/2/2009	1200	1400	10.44	100	4	12.34	236	0.43	6.37	-160.8	0.11	20.0	
MW04	6/4/2009	0800	1000	11.18	75	3	12.56	267	0.77	6.55	-49.7	0.13	69.4	
MW05	6/3/2009	1259	1457	8.65	210	5	12.53	166	0.82	6.23	23.4	0.08	148	turbidity did reach 20.7
MW06	6/3/2009	1300	1400	10.43	75	1	14.83	222	5.75	6.13	-5.7	0.11	44.0	
MW07	6/3/2009	0845	0930	8.85	190	2	11.83	127	5.56	5.42	251.5	0.06	4.19	
MW08	6/3/2009	0830	0945	12.45	75	2	12.93	135	4.40	5.91	54.7	0.06	25.5	

TABLE 3-7
SEDIMENT COLLECTION SUMMARY
MRP SITE 01, CARR POINT
NAVSTA NEWPORT, PORTSMOUTH, RI

LOCATION	EASTING*	NORTHING*	WATER DEPTH** (ft below surface)	PENETRATION	DESCRIPTION OF SEDIMENT
SD01	384032	176965	0.2	0-8"	**0-6"** - silty sand (f-m), some gravel and shell fragments up to 1" **6-8"** - silty sand (f-m), few gravel (fine to coarse, up to 1.25")
SD02	383990	176855	1.02	0-9"	**0-6"** - silty sand (f-c grained), some fine gravel, few coarse gravel **6-9"** - silty sand (f-c grained), some fine gravel
SD03	383940	176991	3.4	0-6"	**0-6"** - fine to medium grained sand with some rounded rocks and shell fragments up to 1.5"
SD04	383907	176873	3.9	0-6"	**0-6"** - silty sand, fine to medium grained sand with some rounded rocks and shell fragments up to 1.5"
SD05	383874	176756	2.8	0-6"	**0-6"** - fine to coarse grained sand with some rounded stones and shell fragments up to 0.5"
SD06	383847	177018	6.4	0-8"	**0-6"** - fine to coarse sand with rocks and shells up to 0.5" **6-8"** - silty sand, wet, black/grey
SD07	383816	176895	6.5	0-8"	**0-6"** - fine to coarse grained sand with some subangular rocks and shell fragments up to 0.5" **6-8"** - fine to coarse grained sand with shell fragments and gravel up to 0.5"
SD08	383788	176773	4.9	0-8"	**0-6"** - silty sand (f-m), few gravel and shell fragments up to 1" **6-8" -** silty sand (f-m grained), few gravel and shell fragments up to 1"
SD09	383771	176646	3.1	0-9"	**0-6"** - silty sand (f), little fine gravel and shell fragments **6-9" -** silty sand (f-m), little fine gravel and shell fragments
SD10	383743	177030	7.6	0-8"	**0-6"** - silty sand, fine to medium grained sand with some rounded stones and shell fragmrnts up to 0.5" **6-8"** - fine to medium grained sand with little silt and few rounded rocks and shell fragments up to 0.5"
SD11	383711	176907	7.4	0-8"	**0-6"** - fine to coarse grained sand with some rounded gravel and shell fragments up to 1.5" **6-8** - fine to coarse grained sand with rounded stones and shell fragments up to 1"
SD12	383685	176786	6.5	0-5"	**0-5"** - silty sand, fine to coarse grained sand with rounded rocks and shell fragments up to 1.5"
SD13	383656	177152	7.9	0-8"	**0-6"** - fine to medium grained sand with little silt, few rounded stones and shell fragments up to 1" **6-8"** - fine to medium grained sand with few rounded rocks and shell fragments up to 0.5"
SD14	383620	177054	8.1	0-8"	**0-6"** - fine to medium grained sand with few round stones and shell fragments up to 0.5" **6-8" -** fine grained sand with little medium grained sand and few round stones and shell fragments up to 0.5"

TABLE 3-7
SEDIMENT COLLECTION SUMMARY
MRP SITE 01, CARR POINT
NAVSTA NEWPORT, PORTSMOUTH, RI

LOCATION	EASTING*	NORTHING*	WATER DEPTH** (ft below surface)	PENETRATION	DESCRIPTION OF SEDIMENT
SD15	383584	176934	8.7	0-12"	**0-6"** - fine to medium grained sand with some rounded rocks and shell fragments up to 1" **6-12"** - fine to medium grained sand, same as 0-6" bottom 1" brown organic fibery material
SD16	383561	176827	8.3	0-9"	**0-6"** - silty sand - fine to medium grained sand with few rounded stones and shell fragments up to 1" **6-9"** - fine to medium grained sand with few rounded rocks and shell fragments up to 0.5"
SD17	383536	176703	6.6	0-6"	**0-6"** - fine to coarse grained sand with some stones and shell fragments up to 2"
SD18	383491	177072	8.4	0-8"	**0-6"** - fine to medium grained sand with few rounded rocks and shell fragments up to 0.5" **6-8"** - fine to medium grained sand with few rounded gravel and shell fragments up to 0.5"
SD19	383465	176963	8.6	0-8"	**0-6" -** fine to medium grained sand with few rocks and shell fragments up to 0.5" **6-8"** - fine to medium grained sand with very few rounded rocks and shell fragments up to 0.5"
SD20	383434	176837	9.2	0-8"	**0-6"** - fine to medium grained sand with few rounded rocks and shell fragments up to 0.5" **6-8"** - fine to medium grained sand with few rounded rocks and shell fragments up to 0.5"

*RI State Plane NAD 1983, measurement is an average calculated from the actual locations of the 8 cores collected from each location
**Water depth was recorded at time of collection; this depth will change with the tides

TABLE 4-1
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SURFACE SOIL
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID	PAL	RES RSL	CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001	CRP-SB04-0002	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001	CRP-SB07-0001-AVG	CRP-SB07-0001-D	CRP-SB08-0001	CRP-SB09-0001	CRP-SB10-0001
LOCATION ID			CRP-SB01	CRP-SB02	CRP-SB03	CRP-SB04	CRP-SB05	CRP-SB06	CRP-SB07			CRP-SB08	CRP-SB09	CRP-SB10
SAMPLE DATE			05/12/09	05/12/09	05/12/09	05/28/09	05/12/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09	05/12/09	05/13/09
TOP DEPTH			0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT
QC			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVGERAGE OF DUPLICATES	DUPLICATE OF CRP-SB07-0001	NORMAL	NORMAL	NORMAL
VOLATILES (UG/KG)														
2-BUTANONE	10000000	2800000	72 UJ	53 UJ	56 UJ	39 U	94 UJ	52 UJ	60 UJ	59.5 UJ	59 UJ	56 UJ	80 UJ	45 UJ
ACETONE	7800000	6100000	72 UJ	53 UJ	56 UJ	39 U	9.6 J	52 UJ	76 J	59 J	42 J	12 J	80 UJ	45 UJ
BENZENE	2500	1100	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U	4.5 U
BROMODICHLOROMETHANE	10000	280	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U	4.5 U
CARBON DISULFIDE		67000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U	4.5 U
CHLOROFORM	1200	300	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U	4.5 U
CIS-1,2-DICHLOROETHENE	630000	78000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U	4.5 U
ETHYLBENZENE	71000	5700	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U	4.5 U
ISOPROPYLBENZENE	27000	220000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U	4.5 U
METHYL CYCLOHEXANE			7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U	4.5 U
METHYLENE CHLORIDE	45000	11000	14 U	11 U	0.74 J	7.8 U	19 U	10 U	12 U	12 U	12 U	11 U	16 U	8.9 U
TETRACHLOROETHENE	12000	570	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U	4.5 U
TOLUENE	190000	500000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U	4.5 U
TOTAL 1,2-DICHLOROETHENE		70000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	6 U	5.9 U	5.6 U	8 U	4.5 U
TOTAL XYLENES	110000	60000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U	4.5 U
TRICHLOROETHENE	13000	2800	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U	4.5 U
VINYL CHLORIDE	20	60	14 U	11 U	11 U	7.8 U	19 U	10 U	12 U	12 U	12 U	11 U	16 U	8.9 U
SEMIVOLATILES (UG/KG)														
1,1-BIPHENYL	800	390000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	300 J	370 U
2-METHYLNAPHTHALENE	29000	31000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	1400 J	370 U
ACENAPHTHENE	29000	340000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	15000	370 U
ACENAPHTHYLENE	23000	340000	2000 U	2000 U	1800 U	1800 U	1200 J	1800 U	400 U	1200 U	2000 U	380 U	2000 U	370 U
ANTHRACENE	29000	1700000	2000 U	2000 U	1800 U	200 J	2800 J	1800 U	400 U	1200 U	2000 U	380 U	16000 J	370 U
BENZO(A)ANTHRACENE	900	150	1100 J	2000 U	1800 U	960 J	22000 J	240 J	400 U	1200 U	2000 U	380 U	91000 J	70 J
BENZO(A)PYRENE	400	15	1700	390 U	360 U	1000	13000 J	360 U	81 U	245.5 U	410 U	76 U	120000	74 J
BENZO(B)FLUORANTHENE	900	150	1200 J	2000 U	1800 U	950 J	30000 J	1800 U	400 U	1200 U	2000 U	49 J	130000	120 J
BENZO(G,H,I)PERYLENE	800	170000	1300 J	2000 U	1800 U	870 J	7900 J	1800 U	400 U	1200 U	2000 U	380 U	78000	370 U
BENZO(K)FLUORANTHENE	900	1500	280 J	2000 U	1800 U	1800 U	13000 J	1800 U	400 U	1200 U	2000 U	380 U	47000	46 J
CARBAZOLE			4000 U	3900 U	3600 U	3700 U	4700 U	3600 U	810 U	2455 U	4100 U	760 U	11000	740 U
CHRYSENE	400	15000	1600 J	390 U	360 U	980	22000 J	220 J	81 U	245.5 U	410 U	76 U	100000 J	80 J
DIBENZO(A,H)ANTHRACENE	400	15	400 U	390 U	360 U	370 U	3400 J	360 U	81 U	245.5 U	410 U	76 U	22000 J	74 U
DIBENZOFURAN			2000 U	2000 U	1800 U	1800 U	180 J	1800 U	400 U	1200 U	2000 U	380 U	3500	370 U
FLUORANTHENE	20000	230000	870 J	2000 U	1800 U	2000	39000 J	430 J	400 U	1200 U	2000 U	380 U	110000 J	140 J
FLUORENE	28000	230000	2000 U	2000 U	1800 U	1800 U	230 J	1800 U	400 U	1200 U	2000 U	380 U	6100	370 U
INDENO(1,2,3-CD)PYRENE	900	150	1400 J	2000 U	1800 U	1200 J	11000 J	1800 U	400 U	1200 U	2000 U	380 U	81000	370 U
NAPHTHALENE	29000	3900	2000 U	2000 U	1800 U	1800 U	350 J	1800 U	400 U	1200 U	2000 U	380 U	3700	370 U
N-NITROSODIPHENYLAMINE		99000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U	370 U
PHENANTHRENE	29000	170000	620 J	230 J	1800 U	2100	2900	220 J	31 J	31 J	2000 U	380 U	63000	59 J
PYRENE	1100	170000	1500 J	260 J	1800 U	2500	38000	520 J	72 J	72 J	2000 U	66 J	120000	160 J

PAL=PROJECT ACTION LIMIT-SEE TEXT; RES RSL=RESIDENTIAL REGIONAL SCREENING LEVEL (USEPA)
BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION;GRAY SHADING-DETECTED;U-NOT DETECTED;J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-1
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SURFACE SOIL
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001	CRP-SB04-0002	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001	CRP-SB07-0001-AVG	CRP-SB07-0001-D	CRP-SB08-0001	CRP-SB09-0001	CRP-SB10-0001
LOCATION ID			CRP-SB01	CRP-SB02	CRP-SB03	CRP-SB04	CRP-SB05	CRP-SB06	CRP-SB07			CRP-SB08	CRP-SB09	CRP-SB10
SAMPLE DATE			05/12/09	05/12/09	05/12/09	05/28/09	05/12/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09	05/12/09	05/13/09
TOP DEPTH	PAL	RES RSL	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT
QC			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVGERAGE OF DUPLICATES	DUPLICATE OF CRP-SB07-0001	NORMAL	NORMAL	NORMAL
PESTICIDES/PCBS (UG/KG)														
4,4'-DDD		2000	1.2 J	0.78 UJ	5.7 UJ	0.74 U	8.1 UJ	3.8 UJ	0.81 U	0.81 U	0.81 U	0.76 U	3.6 J	0.74 U
4,4'-DDE		1400	1.2	0.78 UJ	5.6	0.74 U	0.93 U	2.5	1.3	1.35	1.4	0.76 U	30	9.7 UJ
4,4'-DDT	21	1700	3.4 J	3700 UJ	24	14 UJ	5.4 J	5.2 J	1.5 J	1.155 J	0.81 J	0.7 UJ	62	130 UJ
ALPHA-BHC		77	0.4 U	0.39 UJ	0.36 U	0.37 U	0.47 U	0.93	0.93 UJ	0.67 UJ	0.41 U	0.38 U	0.41 U	0.37 U
ALPHA-CHLORDANE	500	1600	0.4 U	0.39 UJ	0.36 U	0.37 U	0.47 U	2.3	0.4 U	0.405 U	0.41 U	0.38 U	0.41 U	0.37 U
AROCLOR-1260	371	220	19	45000 J	74	18 U	14 J	46	11 J	10.35 J	9.7 J	7.2 J	20 U	1700
DIELDRIN	4.9	30	3 UJ	1100 UJ	0.97	0.74 U	0.93 U	1.1	0.81 U	0.81 U	0.81 U	0.76 U	7 UJ	32 J
ENDOSULFAN I		37000	0.4 U	0.39 UJ	0.36 U	0.37 U	0.47 U	1.2	0.4 U	0.405 U	0.41 U	0.38 U	0.41 U	0.37 U
ENDOSULFAN II		37000	0.8 U	480 J	1 UJ	5	0.93 U	0.73 U	0.81 U	0.81 U	0.81 U	0.76 U	0.81 U	15 J
ENDOSULFAN SULFATE		37000	0.8 U	1200 UJ	0.72 U	0.74 U	5.9	0.73 U	2.6	2.65	2.7	0.76 U	0.81 U	39 UJ
ENDRIN		1800	0.8 U	150 J	0.33 J	4.2 UJ	0.93 U	0.73 UJ	0.81 UJ	0.81 UJ	0.81 UJ	0.76 UJ	0.81 U	20 J
ENDRIN ALDEHYDE		1800	0.8 U	0.78 UJ	0.72 U	1.7 J	0.93 U	0.73 U	0.63 J	0.63 J	0.81 U	0.76 U	0.81 U	15 UJ
ENDRIN KETONE		1800	0.8 U	0.78 UJ	0.72 U	0.74 U	0.93 U	0.73 U	0.81 U	0.81 U	0.81 U	0.87 J	0.81 U	0.74 U
GAMMA-BHC (LINDANE)		520	0.79	0.39 UJ	0.36 U	12	0.47 U	0.36 U	0.9 UJ	0.975 J	1.5	0.38 U	5.3	0.37 U
GAMMA-CHLORDANE	500	1600	0.4 U	0.39 UJ	0.36 U	40 UJ	0.47 U	1.4	0.4 U	0.405 U	0.41 U	0.38 U	0.41 U	7.8
HEPTACHLOR EPOXIDE		53	0.4 U	0.39 UJ	1.2 UJ	0.37 U	0.47 U	5 UJ	2.5 UJ	1.455 UJ	0.41 U	0.38 U	0.41 U	0.37 U
PROPELLANTS (MG/KG)														
2,4-DINITROTOLUENE	0.9	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROGLYCERIN	6.1	0.61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)														
ALUMINUM		7700	13400 J	11500 J	9650 J	7520 J	8910 J	5160 J	11300 J	12100 J	12900 J	14600 J	11100 J	10200 J
ANTIMONY	0.27	3.1	1.8 UJ	2 J	0.86 J	0.83 U	0.64 J	0.43 J	0.92 UJ	1.36 UJ	1.8 UJ	1.7 UJ	2.2 J	8.5 J
ARSENIC	7	0.39	13.6 J	85.5 J	9 J	8.1	8 J	4.6 J	14.8 J	16.2 J	17.6 J	18.8 J	15.1 J	24 J
BARIUM	330	1500	25.9 J	51.9 J	23.2 J	24.5 J	34.2 J	27.9 J	18.8 J	18.95 J	19.1 J	12.6 J	37 J	24.4 J
BERYLLIUM	0.4	16	0.33 J	0.38 J	0.28 J	0.3	0.3 J	0.22 J	0.33 J	0.35 J	0.37 J	0.3 J	0.36 J	0.39 J
CADMIUM	0.36	7	0.45	0.9	1.3	0.104 J	0.34 J	0.31	0.22 J	0.26 J	0.3 J	0.19 J	0.5	1.4
CALCIUM			2310 J	1550 J	558 J	756 J	667 J	1560 J	829 J	900.5 J	972 J	1280 J	14200 J	413 J
CHROMIUM	26	280	19.4 J	17.8 J	45.9 J	10.8 J	13.4 J	18.6 J	14.1 J	15.2 J	16.3 J	19.7 J	13.4 J	15.5 J
COBALT	13	2.3	15.3	18.5	10.4	9.4	7.4	4.4	12.1	11.35	10.6	21.8	8.5	17.1
COPPER	28	310	25.2	301	36.8	25.1	34.7	55.3	23.2	24.95	26.7	27.1	22.5	579
IRON		5500	31200	28200	23900	18900	30600	17600	27400	26950 J	26500 J	33800 J	20100	26100 J
LEAD	11	400	438 J	999 J	174 J	40.4 J	56.6 J	40.7 J	24 J	24.9 J	25.8 J	13.3 J	572 J	97.3 J
MAGNESIUM			3810 J	3330 J	2760 J	2000 J	2630 J	1530 J	3200 J	3595 J	3990 J	4290 J	4590 J	2480 J
MANGANESE	220	180	543	465	508	294	357	187	407	409	411	660	311	493
MERCURY	0.1	0.43	0.03 J	0.058	0.019 J	0.035 U	0.04 J	0.02 J	0.017 J	0.017 J	0.041 U	0.04 U	0.067	0.17
NICKEL	38	150	31.3	29.4	23.6	21.3	15.3	15.7	24.1	24.2	24.3	33.2	16.5	35.7
POTASSIUM			338 J	422 J	375 J	311 J	471 J	475 J	361 J	373.5 J	386 J	298 J	497 J	416 J
SELENIUM	0.52	39	0.44	0.54	0.35 U	0.27 UJ	0.57	0.23 J	0.4 U	0.38 J	0.38 J	0.43	0.63	0.36 U
SILVER	4.2	39	0.18 U	0.17 U	0.21	0.17 UJ	0.21 U	0.16 U	0.18 U	0.18 U	0.18 U	0.17 U	0.1 J	0.17 U
SODIUM			292 U	291 U	269 U	278 U	347 U	262 U	306 U	305.5 U	305 U	277 U	301 U	277 U
VANADIUM	7.8	39	18.8	16.6	19.1	12.6	15.4	11.3	14.5	15.7	16.9	18.2	19.2	33
ZINC	46	2300	124	197	69.2	57.5 J	198	69.7	58.6	62.35	66.1	75	217	185
PETROLEUM HYDROCARBONS (MG/KG)														
DIESEL RANGE ORGANICS	500		200	99	150	170	1500	130	65	68	71	68	5600	47
GASOLINE RANGE ORGANICS	500		3.2 U	3.4 U	2.7 U	2.3 U	6.6 U	3.3 U	3.8 U	3.6 U	3.4 U	2.8 U	3.5 U	2.3 U

PAL=PROJECT ACTION LIMIT-SEE TEXT; RES RSL=RESIDENTIAL REGIONAL SCREENING LEVEL (USEPA)
BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION;GRAY SHADING-DETECTED;U-NOT DETECTED;J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-1
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SURFACE SOIL
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID			CRP-SB11-0001	CRP-SO-ARC1A	CRP-SO-ARC1B	CRP-SO-ARC1C	CRP-SO-ARC2A	CRP-SO-ARC2B	CRP-SO-ARC2C	CRP-SO-ARC3A	CRP-SO-ARC3B	CRP-SO-ARC3C	CRP-SS01-0006	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612
LOCATION ID			CRP-SB11	CRP-SO-ARC1			CRP-SO-ARC2			CRP-SO-ARC3			CRP-SS01		CRP-SS02	
SAMPLE DATE			05/13/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/13/09	05/13/09	05/13/09	05/13/09
TOP DEPTH	PAL	RES RSL	0 FT	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 FT	0.5 FT	0 FT	0.5 FT
BOTTOM DEPTH			1 FT	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	0.5 FT	1 FT	0.5 FT	1 FT
QC			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VOLATILES (UG/KG)																
2-BUTANONE	10000000	2800000	56 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	45 UJ	51 UJ	56 UJ	53 UJ
ACETONE	7800000	6100000	56 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.2 J	51 UJ	56 UJ	53 UJ
BENZENE	2500	1100	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U
BROMODICHLOROMETHANE	10000	280	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U
CARBON DISULFIDE		67000	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U
CHLOROFORM	1200	300	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U
CIS-1,2-DICHLOROETHENE	630000	78000	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U
ETHYLBENZENE	71000	5700	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U
ISOPROPYLBENZENE	27000	220000	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U
METHYL CYCLOHEXANE			5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U
METHYLENE CHLORIDE	45000	11000	11 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.9 U	10 U	11 U	11 U
TETRACHLOROETHENE	12000	570	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	1.1 J
TOLUENE	190000	500000	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U
TOTAL 1,2-DICHLOROETHENE		70000	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U
TOTAL XYLENES	110000	60000	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U
TRICHLOROETHENE	13000	2800	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U
VINYL CHLORIDE	20	60	11 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.9 U	10 U	11 U	11 U
SEMIVOLATILES (UG/KG)																
1,1-BIPHENYL	800	390000	1800 U	200 U	250 U	200 U	210 U	180 U	200 U	180 U	210 U	180 U	1900 U	1800 U	420 U	2000 U
2-METHYLNAPHTHALENE	29000	31000	1800 U	230 U	300 U	230 U	250 U	220 U	240 U	220 U	250 U	220 U	580 J	1800 U	420 U	2000 U
ACENAPHTHENE	29000	340000	1800 U	2100 J	630 J	820 J	460 J	260 J	290 J	260 J	190 U	160 U	1900 U	1800 U	420 U	2000 U
ACENAPHTHYLENE	23000	340000	1800 U	130 U	170 U	130 U	140 U	120 U	130 U	120 U	140 U	120 U	1900 U	1800 U	420 U	2000 U
ANTHRACENE	29000	1700000	150 J	3400 J	1000 J	1300 J	810 J	380 J	500 J	400 J	200 U	170 U	1900 U	1800 U	420 U	2000 U
BENZO(A)ANTHRACENE	900	150	640 J	19000 J	5800 J	7400 J	4400 J	2300 J	2900 J	2300 J	1300 J	660 J	1900 U	1800 U	420 U	2000 U
BENZO(A)PYRENE	400	15	940	25000 J	8100 J	10000 J	6100	3400	4300	3600 J	2100 J	1300 J	380 U	370 U	83 U	400 U
BENZO(B)FLUORANTHENE	900	150	970 J	25000 J	9200 J	11000 J	6300	3700	4900	4100 J	2200 J	190 UJ	1900 U	1800 U	420 U	2000 U
BENZO(G,H,I)PERYLENE	800	170000	850 J	19000 J	4800 J	7100 J	4700	2600	2500	2500 J	1500 J	1000 J	1900 U	1800 U	420 U	2000 U
BENZO(K)FLUORANTHENE	900	1500	1800 U	10000 J	3300 J	4000 J	2200 J	1300 J	1600 J	1500 J	500 J	240 UJ	1900 U	1800 U	420 U	2000 U
CARBAZOLE			3700 U	2300 J	630 J	830 J	260 U	280 J	310 J	280 J	260 U	220 U	3800 U	3700 U	830 U	4000 U
CHRYSENE	400	15000	660 J	22000 J	7200 J	9300 J	5800 J	2800 J	3700 J	3000 J	1700 J	910 J	380 U	370 U	83 U	400 U
DIBENZO(A,H)ANTHRACENE	400	15	370 U	5000	2300	2500 J	2100 J	370 UJ	410 UJ	370 UJ	430 UJ	370 UJ	380 U	370 U	83 U	400 U
DIBENZOFURAN			1800 U	750 J	210 J	300 J	180 J	150 U	170 U	150 U	180 U	150 U	180 J	1800 U	420 U	2000 U
FLUORANTHENE	20000	230000	1400 J	24000 J	8400 J	9500 J	6300 J	3600 J	4200 J	3400 J	1800 J	910 J	1900 U	1800 U	420 U	2000 U
FLUORENE	28000	230000	1800 U	1200 J	350 J	460 J	180 U	160 U	180 U	160 U	190 U	160 U	1900 U	1800 U	420 U	2000 U
INDENO(1,2,3-CD)PYRENE	900	150	1800 U	19000 J	5300 J	7100 J	5000	2900	3000	2900 J	330 UJ	280 UJ	1900 U	1800 U	420 U	2000 U
NAPHTHALENE	29000	3900	1800 U	520 J	280 U	240 J	230 U	200 U	220 U	200 U	230 U	200 U	250 J	1800 U	420 U	2000 U
N-NITROSODIPHENYLAMINE		99000	1800 U	920 J	450 J	560 J	420 J	200 U	500 J	200 U	230 U	200 U	1900 U	1800 U	420 U	2000 U
PHENANTHRENE	29000	170000	940 J	14000 J	4600 J	5600 J	3600	1900 J	2400	1900 J	920 J	450 J	530 J	1800 U	420 U	2000 U
PYRENE	1100	170000	1400 J	28000 J	8100 J	12000 J	6100	3500	4300	4200	2300 J	1300 J	280 J	1800 U	420 U	2000 U

PAL=PROJECT ACTION LIMIT-SEE TEXT; RES RSL=RESIDENTIAL REGIONAL SCREENING LEVEL (USEPA)
BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION;GRAY SHADING-DETECTED;U-NOT DETECTED;J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-1
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SURFACE SOIL
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID			CRP-SB11-0001	CRP-SO-ARC1A	CRP-SO-ARC1B	CRP-SO-ARC1C	CRP-SO-ARC2A	CRP-SO-ARC2B	CRP-SO-ARC2C	CRP-SO-ARC3A	CRP-SO-ARC3B	CRP-SO-ARC3C	CRP-SS01-0006	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612
LOCATION ID			CRP-SB11	CRP-SO-ARC1			CRP-SO-ARC2			CRP-SO-ARC3			CRP-SS01		CRP-SS02	
SAMPLE DATE			05/13/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/13/09	05/13/09	05/13/09	05/13/09
TOP DEPTH	PAL	RES RSL	0 FT	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 FT	0.5 FT	0 FT	0.5 FT
BOTTOM DEPTH			1 FT	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	0.5 FT	1 FT	0.5 FT	1 FT
QC			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
PESTICIDES/PCBS (UG/KG)																
4,4'-DDD		2000	1.8 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	1700 UJ	520 UJ	0.83 U	0.79 U
4,4'-DDE		1400	4.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	38 J	38 J	0.83 U	0.6 J
4,4'-DDT	21	1700	8.6 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.75 UJ	760 UJ	2.8 UJ	16 UJ
ALPHA-BHC		77	0.37 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.38 U	0.37 U	0.32 J	0.4 U
ALPHA-CHLORDANE	500	1600	3.8 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.38 U	0.37 U	0.42 U	0.4 U
AROCLOR-1260	371	220	58	NA	NA	NA	NA	NA	NA	NA	NA	NA	25000	7000	29	160
DIELDRIN	4.9	30	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	190 J	40 J	0.5 J	0.83 J
ENDOSULFAN I		37000	0.37 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.38 U	0.37 U	0.42 U	0.4 U
ENDOSULFAN II		37000	0.31 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	170	44 J	0.83 U	1.1
ENDOSULFAN SULFATE		37000	0.74 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	480 UJ	170 UJ	0.83 U	0.6 J
ENDRIN		1800	0.72 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	200 J	54 J	0.83 UJ	0.79 UJ
ENDRIN ALDEHYDE		1800	0.74 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.75 U	0.74 U	0.83 U	0.79 U
ENDRIN KETONE		1800	0.74 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.75 U	0.74 U	3.2 UJ	20 UJ
GAMMA-BHC (LINDANE)		520	0.37 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.38 U	0.37 U	1.6	0.92
GAMMA-CHLORDANE	500	1600	2.6 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	13	0.37 U	0.42 U	0.4 U
HEPTACHLOR EPOXIDE		53	1.4 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.38 U	0.37 U	0.42 U	1.1 J
PROPELLANTS (MG/KG)																
2,4-DINITROTOLUENE	0.9	1.6	NA	0.16 J	0.13 J	0.13 J	0.098 J	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA	NA	NA	NA
NITROGLYCERIN	6.1	0.61	NA	16 J	12	11	7.5	7.6	7	1.8 J	1.4 J	1.2 J	NA	NA	NA	NA
METALS (MG/KG)																
ALUMINUM		7700	8120	NA	NA	NA	NA	NA	NA	NA	NA	NA	11200 J	9440 J	12700 J	14900 J
ANTIMONY	0.27	3.1	0.81 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.66 J	1.6 UJ	1.9 UJ	1.8 UJ
ARSENIC	7	0.39	10.3 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	12 J	11.2 J	17.6 J	18.7 J
BARIUM	330	1500	23.5 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	20.8 J	22.1 J	21 J	14.6 J
BERYLLIUM	0.4	16	0.31	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 J	0.36 J	0.36 J	0.28 J
CADMIUM	0.36	7	0.25 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.96	0.54	0.33	0.3
CALCIUM			1950 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	1110 J	507 J	2000 J	1160 J
CHROMIUM	26	280	14.3 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.7 J	20.1 J	17.1 J	20.3 J
COBALT	13	2.3	8.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.2	14.2	21.3	15.8
COPPER	28	310	33.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	35.7	36.1	24.5	20.1
IRON		5500	19800	NA	NA	NA	NA	NA	NA	NA	NA	NA	29700 J	29500 J	28600 J	32000 J
LEAD	11	400	41.7 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	149 J	160 J	13.8 J	15 J
MAGNESIUM			2330 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	3410 J	3090 J	3640 J	4590 J
MANGANESE	220	180	267	NA	NA	NA	NA	NA	NA	NA	NA	NA	494	446	570	443
MERCURY	0.1	0.43	0.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.14	0.036 U	0.018 J	0.041 U
NICKEL	38	150	21.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	31.2	28.3	30.5	32.5
POTASSIUM			436 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	280 J	367 J	422 J	215 J
SELENIUM	0.52	39	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.42	0.35 U	0.34 J	0.27 J
SILVER	4.2	39	0.16 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.17 U	0.16 U	0.19 U	0.18 U
SODIUM			270 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	281 U	270 U	67.5 J	297 U
VANADIUM	7.8	39	14.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	18.8	15.7	16.5	17
ZINC	46	2300	87.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	156	106	78.3	74.1
PETROLEUM HYDROCARBONS (MG/KG)																
DIESEL RANGE ORGANICS	500		72	NA	NA	NA	NA	NA	NA	NA	NA	NA	170	51	77	50
GASOLINE RANGE ORGANICS	500		2.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.7 U	2.7 U	3 U	2.6 U

PAL=PROJECT ACTION LIMIT-SEE TEXT; RES RSL=RESIDENTIAL REGIONAL SCREENING LEVEL (USEPA)
BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION;GRAY SHADING-DETECTED;U-NOT DETECTED;J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-2
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SUBSURFACE SOIL
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628	CRP-SB02-0810	CRP-SB02-0810-AVG	CRP-SB02-0810-D	CRP-SB02-1618	CRP-SB02-2426	CRP-SB03-0810	CRP-SB03-1618	CRP-SB03-2830	CRP-SB03-2830-AVG	CRP-SB03-2830-D
LOCATION ID			CRP-SB01			CRP-SB02					CRP-SB03				
SAMPLE DATE			05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/20/09	05/20/09	05/20/09	05/21/09	05/21/09	05/21/09	05/21/09	05/21/09
TOP DEPTH	PAL	RES RSL	6 FT	20 FT	26 FT	8 FT	8 FT	8 FT	16 FT	24 FT	8 FT	16 FT	28 FT	28 FT	28 FT
BOTTOM DEPTH			8 FT	22 FT	28 FT	10 FT	10 FT	10 FT	18 FT	26 FT	10 FT	18 FT	30 FT	30 FT	30 FT
QC			NORMAL	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-SB02-0810	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-SB03-2830
VOLATILES (UG/KG)															
2-BUTANONE	10000000	2800000	73 UJ	42 U	41 U	44 U	44.5 U	45 U	37 UJ	40 U	48 U	37 U	40 U	42.5 U	45 U
ACETONE	7800000	6100000	73 UJ	42 U	5.4 J	44 U	44.5 U	45 U	37 UJ	5.3 J	48 U	37 U	40 U	42.5 U	45 U
BENZENE	2500	1100	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U	4.25 U	4.5 U
BROMODICHLOROMETHANE	10000	280	7.3 UJ	4.2 U	4.1 U	0.39 J	0.39 J	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U	4.25 U	4.5 U
CARBON DISULFIDE		67000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U	4.25 U	4.5 U
CHLOROFORM	1200	300	7.3 UJ	4.2 U	4.1 U	1 J	1 J	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U	4.25 U	4.5 U
CIS-1,2-DICHLOROETHENE	630000	78000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U	4.25 U	4.5 U
ETHYLBENZENE	71000	5700	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U	4.25 U	4.5 U
ISOPROPYLBENZENE	27000	220000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U	4.25 U	4.5 U
METHYL CYCLOHEXANE			7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U	4.25 U	4.5 U
METHYLENE CHLORIDE	45000	11000	15 UJ	8.4 U	8.2 U	8.8 U	8.9 U	9 U	7.4 UJ	8 U	9.6 U	7.4 U	8 U	8.5 U	9 U
TETRACHLOROETHENE	12000	570	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U	4.25 U	4.5 U
TOLUENE	190000	500000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U	4.25 U	4.5 U
TOTAL 1,2-DICHLOROETHENE		70000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.4 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U	4.2 U	4.5 U
TOTAL XYLENES	110000	60000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U	4.25 U	4.5 U
TRICHLOROETHENE	13000	2800	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U	4.25 U	4.5 U
VINYL CHLORIDE	20	60	15 UJ	8.4 U	8.2 U	8.8 U	8.9 U	9 U	7.4 UJ	8 U	9.6 UJ	7.4 U	8 U	8.5 U	9 U
SEMIVOLATILES (UG/KG)															
ACENAPHTHYLENE	23000	340000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
ANTHRACENE	29000	1700000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
BENZO(A)ANTHRACENE	900	150	56 J	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
BENZO(A)PYRENE	400	15	82 U	68 U	72 U	72 U	73 U	74 U	73 U	74 U	70 U	67 U	73 U	73 U	73 U
BENZO(B)FLUORANTHENE	900	150	53 J	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
BENZO(G,H,I)PERYLENE	800	170000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
BENZO(K)FLUORANTHENE	900	1500	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	44 J	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
BUTYL BENZYL PHTHALATE		26000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
CAPROLACTAM		3100000	410 U	340 U	360 U	360 U	200 J	200 J	360 U	160 J	120 J	330 U	370 U	365 U	360 U
CHRYSENE	400	15000	54 J	68 U	72 U	72 U	73 U	74 U	73 U	74 U	70 U	67 U	73 U	73 U	73 U
DIBENZO(A,H)ANTHRACENE	400	15	82 U	68 U	72 U	72 U	73 U	74 U	73 U	74 U	70 U	67 U	73 U	73 U	73 U
FLUORANTHENE	20000	230000	110 J	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
FLUORENE	28000	230000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
INDENO(1,2,3-CD)PYRENE	900	150	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
NAPHTHALENE	29000	3900	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
PHENANTHRENE	29000	170000	72 J	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U
PYRENE	1100	170000	93 J	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U	365 U	360 U

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BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION;GRAY SHADING-DETECTED;U-NOT DETECTED;J-QUANTITATION APPROXIMATE;R-REJECTED; NA-NOT ANALYZED

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MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628	CRP-SB02-0810	CRP-SB02-0810-AVG	CRP-SB02-0810-D	CRP-SB02-1618	CRP-SB02-2426	CRP-SB03-0810	CRP-SB03-1618	CRP-SB03-2830	CRP-SB03-2830-AVG	CRP-SB03-2830-D
LOCATION ID			CRP-SB01			CRP-SB02					CRP-SB03				
SAMPLE DATE			05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/20/09	05/20/09	05/20/09	05/21/09	05/21/09	05/21/09	05/21/09	05/21/09
TOP DEPTH	PAL	RES RSL	6 FT	20 FT	26 FT	8 FT	8 FT	8 FT	16 FT	24 FT	8 FT	16 FT	28 FT	28 FT	28 FT
BOTTOM DEPTH			8 FT	22 FT	28 FT	10 FT	10 FT	10 FT	18 FT	26 FT	10 FT	18 FT	30 FT	30 FT	30 FT
QC			NORMAL	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-SB02-0810	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-SB03-2830
PESTICIDES/PCBS (UG/KG)															
4,4'-DDE		1400	0.82 U	0.68 U	0.72 U	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 U	0.67 U	0.73 U	0.73 U	0.73 U
4,4'-DDT	21	1700	0.74 J	0.68 U	0.48 J	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 U	0.67 U	0.73 U	0.73 U	0.73 U
ALDRIN		29	0.41 U	0.34 U	0.36 U	0.36 U	0.365 U	0.37 U	0.36 U	0.37 U	0.35 U	0.33 U	0.37 U	0.365 U	0.36 U
ALPHA-BHC		77	0.41 U	0.51 UJ	0.36 U	0.36 U	0.365 U	0.37 U	2.6 UJ	0.37 U	0.35 U	0.33 U	0.37 U	0.365 U	0.36 U
AROCLOR-1260	371	220	9.8 J	17 U	18 U	18 UJ	18 UJ	18 U	18 U	18 U	18 U	17 U	18 U	18 U	18 U
BETA-BHC		270	0.41 U	0.16 J	0.36 U	0.28 J	0.28 J	0.83 UJ	0.36 U	0.34 J	0.35 U	0.33 U	0.37 U	0.365 U	0.36 U
DELTA-BHC		77	0.41 U	0.34 U	0.36 U	0.36 U	0.365 U	0.37 U	0.36 U	0.37 U	0.35 U	0.33 U	0.37 U	0.365 U	0.36 U
DIELDRIN	4.9	30	0.82 U	0.68 U	0.72 U	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 U	0.67 U	0.73 U	0.73 U	0.73 U
ENDOSULFAN II		37000	0.8 J	0.4 J	1.8	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.33 J	0.67 U	0.36 J	0.32 J	0.28 J
ENDOSULFAN SULFATE		37000	2.5 UJ	0.68 U	0.72 U	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 UJ	0.67 U	0.73 U	0.73 U	0.73 U
ENDRIN		1800	0.82 U	0.68 U	0.72 U	0.72 U	0.73 UJ	0.74 UJ	0.73 UJ	0.74 UJ	0.7 U	0.67 U	0.73 U	0.73 U	0.73 U
ENDRIN ALDEHYDE		1800	0.82 U	0.68 U	0.72 U	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 U	0.67 U	0.73 U	0.73 U	0.73 U
GAMMA-BHC (LINDANE)		520	0.41 U	0.34 U	0.36 U	0.36 U	0.365 U	0.37 U	0.36 U	0.37 U	0.35 U	0.33 U	0.19 J	0.2 J	0.21 J
GAMMA-CHLORDANE	500	1600	0.24 J	0.34 U	0.26 J	0.36 U	0.365 U	0.37 U	0.36 U	0.37 U	0.35 U	0.33 U	0.19 J	0.19 J	0.36 U
HEPTACHLOR		110	0.41 U	0.34 U	0.36 U	0.36 U	0.365 U	0.37 U	0.36 U	0.37 U	0.35 U	0.33 U	0.37 U	0.365 U	0.36 U
HEPTACHLOR EPOXIDE		53	0.41 U	0.34 U	0.36 U	0.15 J	0.15 J	0.37 U	0.36 U	0.58 UJ	0.35 U	0.33 U	0.37 U	0.365 U	0.36 U
TOTAL DDD/DDE/DDT			0.74 J	0.68 U	0.48 J	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 U	0.67 U	0.73 U	0.73 U	0.73 U
PROPELLANTS (MG/KG)															
2,4-DINITROTOLUENE	0.9	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROGLYCERIN	6.1	0.61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)															
ALUMINUM		7700	9610	6040	4300	7800	8490	9180	4380	3510	6880	5290	2740	2670	2600
ANTIMONY	0.27	3.1	0.92 UJ	0.77 UJ	1.8 UJ	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.5 U	0.75 U	1.7 U	1.65 U	1.6 U
ARSENIC	7	0.39	8.7	6.7	18.7	10.2	11.85	13.5	7.3	15.3	9.3	13.8	28.8	24.4	20
BARIUM	330	1500	26 J	25 J	35 J	20.3 J	19.95 J	19.6 J	24.6 J	18.8 J	28 J	22.9 J	17.3 J	17.2 J	17.1 J
BERYLLIUM	0.4	16	0.39	0.24 J	0.28	0.284	0.298	0.312	0.382	0.239 J	0.321	0.299	0.261 J	0.265 J	0.269 J
CADMIUM	0.36	7	0.19 J	0.1 J	0.28	0.27 U	0.073 J	0.073 J	0.27 U	0.155 J	0.075 J	0.067 J	0.28 U	0.275 U	0.27 U
CALCIUM			418 J	860 J	931 J	397 J	1023.5 J	1650 J	891 J	1450 J	380 J	781 J	1070 J	1145 J	1220 J
CHROMIUM	26	280	12 J	12.6 J	13.3 J	12.2 J	13.55 J	14.9 J	9.7 J	7.7 J	9.9 J	11 J	10.1 J	10.85 J	11.6 J
COBALT	13	2.3	10	11.1	24.4	17.9	18	18.1	13.9	15.3	14.3	14.6	21.9	19.5	17.1
COPPER	28	310	20.4 J	17 J	15 J	24.6 J	24.3 J	24 J	24 J	25.9 J	20.4 J	18.5 J	45.2 J	27.15 J	9.1 J
IRON		5500	26800	18600	43300 J	35300 J	34350 J	33400 J	38300 J	34200 J	31000 J	25000	40700 J	44100 J	47500 J
LEAD	11	400	18.3 J	8.4 J	6.5 J	8.1 J	13.3 J	18.5 J	7.5 J	14.6 J	8.9 J	8.3 J	10 J	9.8 J	9.6 J
MAGNESIUM			2180	2910	3290	2530 J	2875 J	3220 J	2400 J	3500 J	2000 J	1970 J	4000 J	4640 J	5280 J
MANGANESE	220	180	442 J	215 J	728 J	802	723	644	346	543	1440	350	469	501	533
MERCURY	0.1	0.43	0.028 J	0.034 U	0.032 U	0.037 U	0.037 U	0.037 U	0.038 U	0.036 U	0.035 U	0.035 U	0.034 U	0.033 U	0.032 U
NICKEL	38	150	21.2	20.7	39.1	30.9 J	31.05 J	31.2 J	25.4 J	32.6 J	26.6 J	24 J	65.5 J	50.05 J	34.6 J
POTASSIUM			266 J	865 J	777 J	285	322	359	665	515	435	547	461	427	393
SELENIUM	0.52	39	0.43	0.35	0.32 J	0.16 UJ	0.24 UJ	0.32 UJ	0.23 UJ	0.4 UJ	0.33 U	0.19 UJ	0.85 UJ	0.695 UJ	0.54 UJ
SILVER	4.2	39	0.18 U	0.15 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.15 U	0.15 U	0.17 U	0.17 U	0.17 U
SODIUM			308 U	257 U	263 U	270 U	270 U	270 U	268 U	273 U	254 U	251 U	275 U	274.5 U	274 U
VANADIUM	7.8	39	15.9	15.6	19	15	15.35	15.7	16.2	11.2	15	15.7	12.7	13.45	14.2
ZINC	46	2300	66.8	40.9	112	50.7	55.7	60.7	52.7	62.8	59.9	52.2	57.2	60.1	63
PETROLEUM HYDROCARBONS (MG/KG)															
DIESEL RANGE ORGANICS	500		17 J	13	7.7	5.6	7.4	9.2	7.1	6.8	20	16	15	13.5	12
GASOLINE RANGE ORGANICS	500		3.2 U	3.8	11	2.4 U	2.7 U	3 U	2.2 U	2.4 U	2.4 U	2.3 U	2.2 U	2.25 U	2.3 U

PAL=PROJECT ACTION LIMIT-SEE TEXT; RES RSL=RESIDENTIAL REGIONAL SCREENING LEVLES (USEPA)
BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION;GRAY SHADING-DETECTED;U-NOT DETECTED;J-QUANTITATION APPROXIMATE;R-REJECTED; NA-NOT ANALYZED

TABLE 4-2
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SUBSURFACE SOIL
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID			CRP-SB04-0406	CRP-SB04-0810	CRP-SB04-3234	CRP-SB05-0204	CRP-SB05-0810	CRP-SB05-3032	CRP-SB06-0810	CRP-SB06-1214	CRP-SB06-2224	CRP-SB06-2224-AVG	CRP-SB06-2224-D
LOCATION ID			CRP-SB04			CRP-SB05			CRP-SB06				
SAMPLE DATE			05/28/09	05/28/09	05/28/09	05/27/09	05/27/09	05/27/09	05/27/09	05/27/09	05/28/09	05/28/09	05/28/09
TOP DEPTH	PAL	RES RSL	4 FT	8 FT	32 FT	2 FT	8 FT	30 FT	8 FT	12 FT	22 FT	22 FT	22 FT
BOTTOM DEPTH			6 FT	10 FT	34 FT	4 FT	10 FT	32 FT	10 FT	14 FT	24 FT	24 FT	24 FT
QC			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF SRP-SB06-2224
VOLATILES (UG/KG)													
2-BUTANONE	10000000	2800000	34 J	50 U	44 UJ	20 J	48 U	46 U	43 U	51 UJ	2400 UJ	1223 UJ	46 UJ
ACETONE	7800000	6100000	140	36 J	44 UJ	110	7.4 J	46 U	43 U	51 UJ	2400 UJ	1223 UJ	46 UJ
BENZENE	2500	1100	1.2 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U	5.1 U	240 U	122.3 U	4.6 U
BROMODICHLOROMETHANE	10000	280	5.3 U	5 U	4.4 U	4.6 U	0.43 J	4.6 U	4.3 U	5.1 U	240 U	122.3 U	4.6 U
CARBON DISULFIDE		67000	1.4 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U	5.1 U	240 U	122.3 U	4.6 U
CHLOROFORM	1200	300	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	0.63 J	4.3 U	5.1 U	240 U	122.3 U	4.6 U
CIS-1,2-DICHLOROETHENE	630000	78000	7.3	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U	5.1 U	240 U	122.3 U	4.6 U
ETHYLBENZENE	71000	5700	1.9 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U	5.1 U	240 U	122.3 U	4.6 U
ISOPROPYLBENZENE	27000	220000	1.5 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U	5.1 U	240 U	122.3 U	4.6 U
METHYL CYCLOHEXANE			0.44 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U	5.1 U	240 U	122.3 U	4.6 U
METHYLENE CHLORIDE	45000	11000	10 U	10 U	8.8 U	3.7 J	6.8 J	8.1 J	6 J	10 U	480 U	244.6 U	9.2 U
TETRACHLOROETHENE	12000	570	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U	5.1 U	240 U	122.3 U	4.6 U
TOLUENE	190000	500000	1.5 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U	5.1 U	240 U	122.3 U	4.6 U
TOTAL 1,2-DICHLOROETHENE		70000	7.3	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U	5.1 U	240 U	120 U	4.6 U
TOTAL XYLENES	110000	60000	11	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U	5.1 U	240 U	122.3 U	4.6 U
TRICHLOROETHENE	13000	2800	5.3 U	5 U	4.4 U	4.6 U	4.8 U	4.6 U	1.6 J	1.4 J	990 J	560 J	130 J
VINYL CHLORIDE	20	60	2.2 J	10 U	8.8 U	9.2 U	9.6 U	9.3 U	8.6 U	10 U	480 U	244.6 U	9.2 U
SEMIVOLATILES (UG/KG)													
ACENAPHTHYLENE	23000	340000	400 U	380 U	400 U	380 U	400 U	380 U	380 U	380 U	380 U	385 U	390 U
ANTHRACENE	29000	1700000	400 U	380 U	400 U	380 U	400 U	380 U	79 J	380 U	380 U	385 U	390 U
BENZO(A)ANTHRACENE	900	150	400 U	380 U	400 U	380 U	400 U	380 U	300 J	380 U	380 U	385 U	390 U
BENZO(A)PYRENE	400	15	79 U	75 U	80 U	75 U	80 U	77 U	260	75 U	75 U	76.5 U	78 U
BENZO(B)FLUORANTHENE	900	150	400 U	380 U	400 U	380 U	400 U	380 U	240 J	380 U	380 U	385 U	390 U
BENZO(G,H,I)PERYLENE	800	170000	400 U	380 U	400 U	380 U	400 U	380 U	210 J	380 U	380 U	385 U	390 U
BENZO(K)FLUORANTHENE	900	1500	400 U	380 U	400 U	380 U	400 U	380 U	380 U	380 U	380 U	385 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	400 U	380 U	400 U	380 U	150 J	380 U	380 U	380 U	380 U	385 U	390 U
BUTYL BENZYL PHTHALATE		26000	400 U	380 U	400 U	380 U	400 U	380 U	380 U	380 U	380 U	385 U	390 U
CAPROLACTAM		3100000	400 U	78 J	400 U	380 U	400 U	120 J	380 U	110 J	94 J	94 J	390 U
CHRYSENE	400	15000	79 U	75 U	80 U	75 U	80 U	77 U	300	75 U	75 U	76.5 U	78 U
DIBENZO(A,H)ANTHRACENE	400	15	79 U	75 U	80 U	75 U	80 U	77 U	76 U	75 U	75 U	76.5 U	78 U
FLUORANTHENE	20000	230000	400 U	380 U	400 U	380 U	400 U	380 U	560	380 U	380 U	385 U	390 U
FLUORENE	28000	230000	400 U	380 U	400 U	380 U	400 U	380 U	380 U	380 U	380 U	385 U	390 U
INDENO(1,2,3-CD)PYRENE	900	150	400 U	380 U	400 U	380 U	400 U	380 U	380 U	380 U	380 U	385 U	390 U
NAPHTHALENE	29000	3900	400 U	380 U	400 U	380 U	400 U	380 U	380 U	380 U	380 U	385 U	390 U
PHENANTHRENE	29000	170000	48 J	380 U	400 U	380 U	400 U	380 U	560	380 U	380 U	385 U	390 U
PYRENE	1100	170000	66 J	380 U	400 U	380 U	400 U	380 U	820	380 U	380 U	385 U	390 U

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BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION;GRAY SHADING-DETECTED;U-NOT DETECTED;J-QUANTITATION APPROXIMATE;R-REJECTED; NA-NOT ANALYZED

TABLE 4-2
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SUBSURFACE SOIL
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID			CRP-SB04-0406	CRP-SB04-0810	CRP-SB04-3234	CRP-SB05-0204	CRP-SB05-0810	CRP-SB05-3032	CRP-SB06-0810	CRP-SB06-1214	CRP-SB06-2224	CRP-SB06-2224-AVG	CRP-SB06-2224-D
LOCATION ID			CRP-SB04			CRP-SB05			CRP-SB06				
SAMPLE DATE			05/28/09	05/28/09	05/28/09	05/27/09	05/27/09	05/27/09	05/27/09	05/27/09	05/28/09	05/28/09	05/28/09
TOP DEPTH	PAL	RES RSL	4 FT	8 FT	32 FT	2 FT	8 FT	30 FT	8 FT	12 FT	22 FT	22 FT	22 FT
BOTTOM DEPTH			6 FT	10 FT	34 FT	4 FT	10 FT	32 FT	10 FT	14 FT	24 FT	24 FT	24 FT
QC			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF SRP-SB06-2224
PESTICIDES/PCBS (UG/KG)													
4,4'-DDE		1400	0.79 U	0.3 J	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U	0.75 U	0.75 U	0.765 U	0.78 U
4,4'-DDT	21	1700	0.79 U	0.55 J	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U	0.75 U	0.32 J	0.32 J	0.78 U
ALDRIN		29	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.38 U	0.38 U	0.385 U	0.39 U
ALPHA-BHC		77	0.4 U	1.3	1.8 UJ	0.38 U	0.4 U	0.38 U	0.38 U	0.38 U	0.46 J	0.33 J	0.2 J
AROCLOR-1260	371	220	20 U	19 U	20 U	6.8 J	20 U	19 U	19 U	19 U	19 U	19 U	19 U
BETA-BHC		270	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.38 U	0.38 U	0.385 U	0.39 U
DELTA-BHC		77	0.4 U	0.57 J	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.38 U	0.38 U	0.385 U	0.39 U
DIELDRIN	4.9	30	0.79 U	0.75 U	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U	0.75 U	0.75 U	0.765 U	0.78 U
ENDOSULFAN II		37000	0.79 U	0.75 U	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U	0.75 U	0.75 U	0.765 U	0.78 U
ENDOSULFAN SULFATE		37000	0.79 U	0.75 U	0.8 U	0.61 J	0.8 U	0.77 U	0.76 U	0.75 U	0.75 U	0.765 U	0.78 U
ENDRIN		1800	0.79 U	0.75 U	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U	0.75 U	0.75 U	0.765 U	0.78 U
ENDRIN ALDEHYDE		1800	0.79 U	0.75 U	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U	0.75 U	0.75 U	0.765 U	0.78 U
GAMMA-BHC (LINDANE)		520	0.4 U	0.65	0.4 U	0.38 U	0.4 U	0.38 U	0.54	0.38 U	0.38 U	0.385 U	0.39 U
GAMMA-CHLORDANE	500	1600	0.48 U	0.68 UJ	0.77 UJ	0.39 U	1.3 U	0.85 U	1.8	0.49 UJ	0.56 U	0.635 U	0.71 U
HEPTACHLOR		110	0.4 U	0.44	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.38 U	0.38 U	0.385 U	0.39 U
HEPTACHLOR EPOXIDE		53	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	3 J	0.38 U	0.38 U	0.385 U	0.39 U
TOTAL DDD/DDE/DDT			0.79 U	0.85 J	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U	0.75 U	0.32 J	0.32 J	0.78 U
PROPELLANTS (MG/KG)													
2,4-DINITROTOLUENE	0.9	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROGLYCERIN	6.1	0.61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)													
ALUMINUM		7700	9540 J	5540 J	3380 J	7950 J	12900 J	14800 J	4680 J	4370 J	4040 J	4435 J	4830
ANTIMONY	0.27	3.1	0.88 U	0.83 U	0.88 U	0.83 U	1.8 U	1.7 U	1.7 U	0.83 U	1.7 U	1.7 U	1.7 U
ARSENIC	7	0.39	16	7.8	10.4	8.6	14.7	10.6	8.6	6.4	10	9.8	9.6
BARIUM	330	1500	40.1 J	16.9 J	15.3 J	20.8 J	10.1 J	5.9 J	26.1 J	18 J	17.9 J	17.9 J	17.9 J
BERYLLIUM	0.4	16	0.42	0.27 J	0.27 J	0.31	0.24 J	0.19 J	0.28 J	0.26 J	0.28 J	0.305 J	0.33
CADMIUM	0.36	7	0.115 J	0.067 J	0.15 J	0.28 U	0.3 U	0.29 U	0.28 U	0.28 U	0.084 J	0.122 J	0.16 J
CALCIUM			672 J	292 J	1560 J	246 J	838 J	1850 J	506 J	389 J	1190 J	1240 J	1290 J
CHROMIUM	26	280	12 J	8.8 J	13 J	13.1 J	24.6 J	24 J	9.9 J	9.7 J	14.9 J	15.6 J	16.3 J
COBALT	13	2.3	11	8.6	22.5	16	21	15.5	14.5	11.1	24	22.85	21.7
COPPER	28	310	21.6	19.3	20.2	20	28.2	32.7	21.9	12.5	22.1	21.75	21.4
IRON		5500	23300	23100	26700	27400	50100	50500	37200	23900	34500	31450	28400
LEAD	11	400	25.1 J	7.2 J	10.2 J	8.8 J	18.7 J	13.8 J	6.7 J	5.3 J	9.6 J	9.7 J	9.8 J
MAGNESIUM			1880 J	1520 J	1530 J	1840 J	4720 J	5790 J	1210 J	1590 J	1760 J	1835 J	1910 J
MANGANESE	220	180	389	232	723	439	481	193	539	377	747	708	669
MERCURY	0.1	0.43	0.021 J	0.035 U	0.036 U	0.035 U	0.04 U	0.034 U	0.033 U	0.034 U	0.038 U	0.0385 U	0.039 U
NICKEL	38	150	24	20.9	41.1	26.9	49	51.7	28.3	20.1	43	41.05	39.1
POTASSIUM			302 J	307 J	321 J	326 J	209 J	141 J	377 J	377 J	413 J	448 J	483 J
SELENIUM	0.52	39	0.78 UJ	0.36 U	0.25 UJ	0.65 UJ	0.47 UJ	0.97 UJ	0.37 U	0.36 U	0.24 UJ	0.305 UJ	0.37 U
SILVER	4.2	39	0.18 UJ	0.17 UJ	0.18 UJ	0.17 UJ	0.18 UJ	0.17 UJ	0.17 UJ	0.17 UJ	0.17 UJ	0.17 UJ	0.17 U
SODIUM			294 U	277 U	60.7 J	276 U	302 U	289 U	283 U	277 U	56.4 J	64.4 J	72.4 J
VANADIUM	7.8	39	15.7	12.6	12	15.9	19.4	19.9	16.4	12	15.5	14.7	13.9
ZINC	46	2300	66.1 J	45.3 J	140 J	80.5 J	90.8 J	146 J	56.5 J	68.8 J	159 J	152 J	145 J
PETROLEUM HYDROCARBONS (MG/KG)													
DIESEL RANGE ORGANICS	500		110	14	13	49	10	8.7	18	8	9.6	9.5	9.4
GASOLINE RANGE ORGANICS	500		3 U	2.3 U	2.5 U	2.6 U	2.8 U	2.4 U	2.5 U	2.4 U	2.6 U	2.5 U	2.4 U

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BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION;GRAY SHADING-DETECTED;U-NOT DETECTED;J-QUANTITATION APPROXIMATE;R-REJECTED; NA-NOT ANALYZED

TABLE 4-2
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SUBSURFACE SOIL
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID			CRP-SB07-0406	CRP-SB07-0810	CRP-SB07-1416	CRP-SB08-0810	CRP-SB08-0810-AVG	CRP-SB08-0810-D	CRP-SB08-1214	CRP-SB08-1416	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840	CRP-SB09-3840-AVG	CRP-SB09-3840-D
LOCATION ID			CRP-SB07			CRP-SB08					CRP-SB09				
SAMPLE DATE			05/26/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09	05/18/09	05/18/09	05/18/09	05/18/09	05/18/09
TOP DEPTH	PAL	RES RSL	4 FT	8 FT	14 FT	8 FT	8 FT	8 FT	12 FT	14 FT	6 FT	12 FT	38 FT	38 FT	38 FT
BOTTOM DEPTH			6 FT	10 FT	16 FT	10 FT	10 FT	10 FT	14 FT	16 FT	8 FT	14 FT	40 FT	40 FT	40 FT
QC			NORMAL	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-SB08-0810	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-SB09-3840
VOLATILES (UG/KG)															
2-BUTANONE	10000000	2800000	40 U	47 UJ	2200 UJ	44 UJ	972 UJ	1900 UJ	2400 UJ	2200 UJ	45 U	44 U	50 U	48 UJ	46 UJ
ACETONE	7800000	6100000	40 U	47 UJ	2200 U	44 UJ	972 UJ	1900 UJ	2400 U	2200 U	1.8 UJ	1.8 UJ	2 UJ	1.9 UJ	1.8 UJ
BENZENE	2500	1100	4 U	4.7 U	220 U	4.4 U	97.2 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
BROMODICHLOROMETHANE	10000	280	4 U	4.7 U	220 U	4.4 U	97.2 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
CARBON DISULFIDE		67000	4 U	4.7 U	220 U	4.4 U	97.2 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
CHLOROFORM	1200	300	4 U	4.7 U	220 U	4.4 U	97.2 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
CIS-1,2-DICHLOROETHENE	630000	78000	4 U	4.7 U	220 U	4.4 U	97.2 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
ETHYLBENZENE	71000	5700	4 U	4.7 U	220 U	4.4 U	97.2 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
ISOPROPYLBENZENE	27000	220000	4 U	4.7 U	220 U	4.4 U	97.2 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
METHYL CYCLOHEXANE			4 U	4.7 U	220 U	4.4 U	97.2 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
METHYLENE CHLORIDE	45000	11000	8.1 U	9.5 U	440 U	8.8 U	194.4 UJ	380 UJ	480 U	440 U	9 U	8.8 U	10 U	9.6 UJ	9.2 UJ
TETRACHLOROETHENE	12000	570	4 U	4.7 U	220 U	19 J	169.5 J	320 J	2100	890	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
TOLUENE	190000	500000	4 U	4.7 U	220 U	4.4 U	97.2 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
TOTAL 1,2-DICHLOROETHENE		70000	4 U	4.7 U	220 U	4.4 U	97 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
TOTAL XYLENES	110000	60000	4 U	4.7 U	220 U	4.4 U	97.2 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
TRICHLOROETHENE	13000	2800	4 U	4.7 U	220 U	4.4 U	97.2 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ
VINYL CHLORIDE	20	60	8.1 U	9.5 U	440 U	8.8 U	194.4 UJ	380 UJ	480 U	440 U	9 U	8.8 U	10 U	9.6 UJ	9.2 UJ
SEMIVOLATILES (UG/KG)															
ACENAPHTHYLENE	23000	340000	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U
ANTHRACENE	29000	1700000	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U
BENZO(A)ANTHRACENE	900	150	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U
BENZO(A)PYRENE	400	15	70 U	73 U	73 U	74 U	73.5 U	73 U	69 U	76 U	27 J	73 U	77 U	77.5 U	78 U
BENZO(B)FLUORANTHENE	900	150	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U
BENZO(G,H,I)PERYLENE	800	170000	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U
BENZO(K)FLUORANTHENE	900	1500	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	350 U	370 U	360 U	370 U	370 U	370 U	350 U	150 J	48 J	60 J	62 J	63.5 J	65 J
BUTYL BENZYL PHTHALATE		26000	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	51 J	49 J	47 J
CAPROLACTAM		3100000	350 U	130 J	78 J	370 U	370 U	370 U	350 U	100 J	390 U	79 J	390 U	390 U	390 U
CHRYSENE	400	15000	70 U	73 U	73 U	74 U	73.5 U	73 U	69 U	76 U	78 U	73 U	77 U	77.5 U	78 U
DIBENZO(A,H)ANTHRACENE	400	15	70 U	73 U	73 U	74 U	73.5 U	73 U	69 U	76 U	78 U	73 U	77 U	77.5 U	78 U
FLUORANTHENE	20000	230000	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U
FLUORENE	28000	230000	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U
INDENO(1,2,3-CD)PYRENE	900	150	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U
NAPHTHALENE	29000	3900	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U
PHENANTHRENE	29000	170000	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U
PYRENE	1100	170000	350 U	370 U	360 U	370 U	370 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U

PAL=PROJECT ACTION LIMIT-SEE TEXT; RES RSL=RESIDENTIAL REGIONAL SCREENING LEVLES (USEPA)
BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION;GRAY SHADING-DETECTED;U-NOT DETECTED;J-QUANTITATION APPROXIMATE;R-REJECTED; NA-NOT ANALYZED

TABLE 4-2
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SUBSURFACE SOIL
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID			CRP-SB07-0406	CRP-SB07-0810	CRP-SB07-1416	CRP-SB08-0810	CRP-SB08-0810-AVG	CRP-SB08-0810-D	CRP-SB08-1214	CRP-SB08-1416	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840	CRP-SB09-3840-AVG	CRP-SB09-3840-D
LOCATION ID			CRP-SB07			CRP-SB08					CRP-SB09				
SAMPLE DATE			05/26/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09	05/18/09	05/18/09	05/18/09	05/18/09	05/18/09
TOP DEPTH	PAL	RES RSL	4 FT	8 FT	14 FT	8 FT	8 FT	8 FT	12 FT	14 FT	6 FT	12 FT	38 FT	38 FT	38 FT
BOTTOM DEPTH			6 FT	10 FT	16 FT	10 FT	10 FT	10 FT	14 FT	16 FT	8 FT	14 FT	40 FT	40 FT	40 FT
QC			NORMAL	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-SB08-0810	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-SB09-3840
PESTICIDES/PCBS (UG/KG)															
4,4'-DDE		1400	0.31 J	0.73 U	0.73 U	0.29 J	0.29 J	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U
4,4'-DDT	21	1700	0.99	0.73 U	0.73 U	0.54 J	0.54 J	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U
ALDRIN		29	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U
ALPHA-BHC		77	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U
AROCLOR-1260	371	220	18 U	18 U	18 U	18 U	18 U	18 U	17 U	19 U	19 U	18 U	19 U	19.5 U	20 U
BETA-BHC		270	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U
DELTA-BHC		77	0.35 U	0.37 U	0.23 J	0.37 U	0.28 J	0.28 J	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U
DIELDRIN	4.9	30	0.7 U	0.73 U	0.73 U	0.74 U	0.735 U	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U
ENDOSULFAN II		37000	0.7 U	0.73 U	0.73 U	0.74 U	0.735 U	0.73 U	0.69 U	0.76 U	1.3	1.7	2.8	2.9	3
ENDOSULFAN SULFATE		37000	0.78 J	0.73 U	0.73 U	0.74 U	0.735 U	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U
ENDRIN		1800	0.7 U	0.73 U	0.73 U	0.74 U	0.735 U	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U
ENDRIN ALDEHYDE		1800	0.7 U	0.73 U	0.73 U	0.74 U	0.735 U	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U
GAMMA-BHC (LINDANE)		520	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U
GAMMA-CHLORDANE	500	1600	0.35 U	0.74 U	1.4 U	0.76 UJ	0.555 UJ	0.35 UJ	0.35 U	0.76 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U
HEPTACHLOR		110	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U
HEPTACHLOR EPOXIDE		53	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U
TOTAL DDD/DDE/DDT			1.3 J	0.73 U	0.73 U	0.83 J	0.83 J	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.78 U	0.78 U
PROPELLANTS (MG/KG)															
2,4-DINITROTOLUENE	0.9	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROGLYCERIN	6.1	0.61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)															
ALUMINUM		7700	7170 J	3870 J	4020 J	4840 J	4435 J	4030 J	4700 J	3790 J	7370	5390	4810	4165	3520
ANTIMONY	0.27	3.1	1.6 U	0.82 U	1.6 U	0.83 U	0.825 U	0.82 U	1.6 U	0.84 U	0.85 UJ	1.6 UJ	1.8 UJ	1.8 UJ	1.8 UJ
ARSENIC	7	0.39	9.7	8.7	6	6.1	6.65	7.2	6.3	4	7.5	7.3	22.3	24.55	26.8
BARIUM	330	1500	28.1 J	16.3 J	21.2 J	17.9 J	20.7 J	23.5 J	21.3 J	14.3 J	25.9 J	25.8 J	24.5 J	20.55 J	16.6 J
BERYLLIUM	0.4	16	0.3	0.24 J	0.26 J	0.26 J	0.26 J	0.26 J	0.28	0.27 J	0.36	0.29	0.32	0.325	0.33
CADMIUM	0.36	7	0.095 J	0.27 U	0.27 U	0.088 J	0.088 J	0.27 U	0.26 U	0.28 U	0.13 J	0.11 J	0.18 J	0.18 J	0.18 J
CALCIUM			491 J	636 J	1590 J	279 J	278 J	277 J	275 J	386 J	382 J	553 J	1300 J	1345 J	1390 J
CHROMIUM	26	280	11.8 J	11 J	15.2 J	10.5 J	10.25 J	10 J	9.8 J	7.5 J	10.7 J	11.6 J	18.3 J	19.15 J	20 J
COBALT	13	2.3	18.4	18.3	13.4	14.2	15.05	15.9	12.8	3.4	11.2	17	29.2	31.3	33.4
COPPER	28	310	28.2	23.4	23.8	19.4	19.85	20.3	19.1	30.1	15 J	24.2 J	19.3 J	15.45 J	11.6 J
IRON		5500	37000	26600	33600	27200	26900	26600	31000	16700	22800	41700 J	47600 J	50750 J	53900 J
LEAD	11	400	10.7 J	8 J	8 J	6.2 J	6.65 J	7.1 J	7 J	7.1 J	9.1 J	6.5 J	5.7 J	5.6 J	5.5 J
MAGNESIUM			2440 J	1280 J	3130 J	1700 J	1425 J	1150 J	1360 J	940 J	1850	2540	2520	2125	1730
MANGANESE	220	180	920	524	513	430	480	530	341	73.7	394 J	966 J	1160 J	1340 J	1520 J
MERCURY	0.1	0.43	0.034 U	0.032 U	0.035 U	0.038 U	0.0355 U	0.033 U	0.035 U	0.038 U	0.035 U	0.033 U	0.037 U	0.036 U	0.035 U
NICKEL	38	150	37.2	37.3	31.7	23.8	24.8	25.8	24.2	10.1	18.7	34.1	44.5	47.75	51
POTASSIUM			544 J	460 J	440 J	320 J	325 J	330 J	488 J	344 J	541 J	464 J	1350 J	886.5 J	423 J
SELENIUM	0.52	39	0.35 UJ	0.27 UJ	0.18 UJ	0.36 U	0.305 UJ	0.25 UJ	0.25 UJ	0.25 UJ	0.37 U	0.28 J	0.22 J	0.2 J	0.18 J
SILVER	4.2	39	0.16 UJ	0.16 UJ	0.16 UJ	0.17 UJ	0.165 UJ	0.16 UJ	0.16 UJ	0.17 UJ	0.17 U	0.16 U	0.18 U	0.18 U	0.18 U
SODIUM			260 U	274 U	268 U	276 U	274.5 U	273 U	259 U	279 U	285 U	274 U	83.9 J	91.6 J	99.3 J
VANADIUM	7.8	39	15.8	13.7	15.5	14.3	13.75	13.2	14.6	11.3	13.8	15.6	18.4	17.3	16.2
ZINC	46	2300	79.3 J	77.1 J	71 J	73.8 J	78.95 J	84.1 J	73.9 J	31.7 J	51	71.5	222	252	282
PETROLEUM HYDROCARBONS (MG/KG)															
DIESEL RANGE ORGANICS	500		19	9	11	14	14	14	13	9.5	9	8.9	9.3	8.45 J	7.6 J
GASOLINE RANGE ORGANICS	500		2.2 U	2.4 U	2.4 U	2.8 U	2.45 U	2.1 U	2.6 U	2.4 U	51	4.3	4.4	5.6	6.8

PAL=PROJECT ACTION LIMIT-SEE TEXT; RES RSL=RESIDENTIAL REGIONAL SCREENING LEVLES (USEPA)
BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION;GRAY SHADING-DETECTED;U-NOT DETECTED;J-QUANTITATION APPROXIMATE;R-REJECTED; NA-NOT ANALYZED

TABLE 4-2
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SUBSURFACE SOIL
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID			CRP-SB10-0810	CRP-SB10-1214	CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214	CRP-SB11-1618	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708	CRP-TP04-0506	CRP-TP05-0102	CRP-TP06-0405
LOCATION ID			CRP-SB10			CRP-SB11			CRP-TP01A	CRP-TP01B		CRP-TP04	CRP-TP05	CRP-TP06
SAMPLE DATE			05/21/09	05/21/09	05/21/09	05/22/09	05/22/09	05/22/09	05/11/09	05/11/09	05/11/09	05/12/09	05/13/09	05/13/09
TOP DEPTH	PAL	RES RSL	8 FT	12 FT	16 FT	8 FT	12 FT	16 FT	5 FT	5 FT	7 FT	5 FT	1 FT	4 FT
BOTTOM DEPTH			10 FT	14 FT	18 FT	10 FT	14 FT	18 FT	6 FT	6 FT	8 FT	6 FT	2 FT	5 FT
QC			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VOLATILES (UG/KG)														
2-BUTANONE	10000000	2800000	51 U	57 U	46 U	49 U	42 U	41 U	49 UJ	52 UJ	40 UJ	47 UJ	49 UJ	52 UJ
ACETONE	7800000	6100000	51 U	57 U	46 U	49 U	42 U	41 U	49 UJ	52 UJ	40 UJ	47 UJ	49 UJ	52 UJ
BENZENE	2500	1100	5.1 U	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U	4.9 U	5.2 U
BROMODICHLOROMETHANE	10000	280	5.1 U	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U	4.9 U	5.2 U
CARBON DISULFIDE		67000	5.1 U	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U	4.9 U	5.2 U
CHLOROFORM	1200	300	5.1 U	5.7 U	4.6 U	0.91 J	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U	4.9 U	5.2 U
CIS-1,2-DICHLOROETHENE	630000	78000	5.1 U	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U	4.9 U	5.2 U
ETHYLBENZENE	71000	5700	5.1 U	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U	4.9 U	5.2 U
ISOPROPYLBENZENE	27000	220000	5.1 U	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U	4.9 U	5.2 U
METHYL CYCLOHEXANE			5.1 U	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U	4.9 U	5.2 U
METHYLENE CHLORIDE	45000	11000	10 U	11 U	9.2 U	9.7 U	8.4 U	8.2 U	9.8 U	10 U	8 U	9.3 U	9.8 U	10 U
TETRACHLOROETHENE	12000	570	5.1 U	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	2.5 J	5.2 U	4 U	4.7 U	4.9 U	5.2 U
TOLUENE	190000	500000	5.1 U	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U	4.9 U	5.2 U
TOTAL 1,2-DICHLOROETHENE		70000	5.1 U	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U	4.9 U	5.2 U
TOTAL XYLENES	110000	60000	5.1 U	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U	4.9 U	5.2 U
TRICHLOROETHENE	13000	2800	5.1 U	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U	4.9 U	5.2 U
VINYL CHLORIDE	20	60	10 U	11 U	9.2 U	9.7 U	8.4 U	8.2 U	9.8 U	10 U	8 U	9.3 U	9.8 U	10 U
SEMIVOLATILES (UG/KG)														
ACENAPHTHYLENE	23000	340000	370 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U	390 U	1200 J
ANTHRACENE	29000	1700000	370 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U	390 U	930 J
BENZO(A)ANTHRACENE	900	150	370 U	370 U	370 U	370 U	390 U	370 U	86 J	380 U	380 U	360 U	390 U	10000 J
BENZO(A)PYRENE	400	15	74 U	74 U	75 U	74 U	77 U	74 U	90 J	77 U	75 U	72 U	78 U	9400
BENZO(B)FLUORANTHENE	900	150	370 U	370 U	370 U	370 U	390 U	370 U	100 J	380 U	380 U	360 U	44 J	10000
BENZO(G,H,I)PERYLENE	800	170000	370 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U	390 U	5200
BENZO(K)FLUORANTHENE	900	1500	370 U	370 U	370 U	370 U	390 U	370 U	47 J	380 U	380 U	360 U	390 U	4300
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	500	370 U	480	370 U	390 U	370 U	380 UJ	380 U	380 UJ	360 UJ	390 UJ	2000 U
BUTYL BENZYL PHTHALATE		26000	370 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U	390 U	2000 U
CAPROLACTAM		3100000	370 U	370 U	86 J	370 U	390 U	370 U	380 U	380 U	380 U	360 U	390 U	2000 U
CHRYSENE	400	15000	74 U	74 U	75 U	74 U	77 U	74 U	62 J	77 U	75 U	72 U	78 U	11000 J
DIBENZO(A,H)ANTHRACENE	400	15	74 U	74 U	75 U	74 U	77 U	74 U	77 U	77 U	75 U	72 U	78 U	1900
FLUORANTHENE	20000	230000	370 U	370 U	370 U	370 U	390 U	370 U	80 J	380 U	380 U	360 U	390 U	15000 J
FLUORENE	28000	230000	370 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U	390 U	290 J
INDENO(1,2,3-CD)PYRENE	900	150	370 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U	390 U	5400
NAPHTHALENE	29000	3900	370 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U	390 U	250 J
PHENANTHRENE	29000	170000	370 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U	390 U	3800
PYRENE	1100	170000	370 U	370 U	370 U	370 U	390 U	370 U	110 J	380 U	380 U	360 U	73 J	23000

PAL=PROJECT ACTION LIMIT-SEE TEXT; RES RSL=RESIDENTIAL REGIONAL SCREENING LEVLES (USEPA)
BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION;GRAY SHADING-DETECTED;U-NOT DETECTED;J-QUANTITATION APPROXIMATE;R-REJECTED; NA-NOT ANALYZED

TABLE 4-2
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SUBSURFACE SOIL
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID			CRP-SB10-0810	CRP-SB10-1214	CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214	CRP-SB11-1618	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708	CRP-TP04-0506	CRP-TP05-0102	CRP-TP06-0405
LOCATION ID			CRP-SB10			CRP-SB11			CRP-TP01A	CRP-TP01B		CRP-TP04	CRP-TP05	CRP-TP06
SAMPLE DATE			05/21/09	05/21/09	05/21/09	05/22/09	05/22/09	05/22/09	05/11/09	05/11/09	05/11/09	05/12/09	05/13/09	05/13/09
TOP DEPTH	PAL	RES RSL	8 FT	12 FT	16 FT	8 FT	12 FT	16 FT	5 FT	5 FT	7 FT	5 FT	1 FT	4 FT
BOTTOM DEPTH			10 FT	14 FT	18 FT	10 FT	14 FT	18 FT	6 FT	6 FT	8 FT	6 FT	2 FT	5 FT
QC			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
PESTICIDES/PCBS (UG/KG)														
4,4'-DDE		1400	0.74 U	0.74 U	0.75 U	0.74 U	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.33 J	3.8 UJ	0.8 U
4,4'-DDT	21	1700	0.74 U	0.24 J	0.75 U	0.74 U	0.77 U	0.74 U	1 UJ	0.77 U	0.33 J	0.57 J	13 UJ	0.8 UJ
ALDRIN		29	0.37 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U	0.39	0.4 U
ALPHA-BHC		77	0.37 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U	0.39 U	0.4 U
AROCLOR-1260	371	220	18 U	19 U	19 U	49	19 U	18 U	11 J	19 U	19 U	18 U	83	47
BETA-BHC		270	0.37 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.57 UJ	0.39 U	0.4 U
DELTA-BHC		77	0.37 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U	0.39 U	0.4 U
DIELDRIN	4.9	30	0.74 U	0.74 U	0.75 U	0.35 J	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.72 U	4.8 J	0.8 U
ENDOSULFAN II		37000	0.93	1.2	4.1	0.49 J	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.72 U	3.7 UJ	5.6 J
ENDOSULFAN SULFATE		37000	0.74 U	0.74 U	0.75 U	0.74 U	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.72 U	0.78 U	0.8 U
ENDRIN		1800	0.74 U	0.74 U	0.75 U	0.51 J	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.72 U	5.7 J	5.3 J
ENDRIN ALDEHYDE		1800	0.74 U	0.74 U	0.75 U	2.8 UJ	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.72 U	4.4 UJ	6.4
GAMMA-BHC (LINDANE)		520	0.37 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U	0.39 U	0.4 U
GAMMA-CHLORDANE	500	1600	0.29 J	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U	2.8 J	0.4 U
HEPTACHLOR		110	0.37 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U	0.39 UJ	0.4 UJ
HEPTACHLOR EPOXIDE		53	0.37 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U	3.1 UJ	0.4 U
TOTAL DDD/DDE/DDT			0.74 U	0.24 J	0.75 U	0.74 U	0.77 U	0.74 U	0.85 UJ	0.77 U	0.33 J	0.9 J	5.9 UJ	8.5 UJ
PROPELLANTS (MG/KG)														
2,4-DINITROTOLUENE	0.9	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROGLYCERIN	6.1	0.61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)														
ALUMINUM		7700	9150	7640	2900	9580 J	4860 J	1860 J	7740 J	7670 J	5010 J	10400 J	11900 J	11400 J
ANTIMONY	0.27	3.1	1.6 U	0.82 U	0.83 U	1.6 U	0.86 U	1.6 U	0.87 UJ	1.7 UJ	1.6 UJ	1.6 UJ	1.7 UJ	0.9 UJ
ARSENIC	7	0.39	11.7	4.7	7.8	11.3	6.4	13.9	6.1 J	7.6 J	6.8 J	12.4 J	27.5 J	10.4 J
BARIUM	330	1500	15.4 J	26.4 J	14.6 J	19.1 J	18.2 J	17.4 J	23.2 J	28 J	20 J	19.1 J	19 J	20.1 J
BERYLLIUM	0.4	16	0.317	0.288	0.189 J	0.334	0.3	0.2 J	0.36 J	0.43 J	0.36 J	0.39 J	0.37 J	0.4 J
CADMIUM	0.36	7	0.27 U	0.27 U	0.088 J	0.27 U	0.29 U	0.069 J	0.16 J	0.16 J	0.17 J	0.17 J	0.35	0.23 J
CALCIUM			619 J	1250 J	1090 J	360 J	797 J	1650 J	515 J	311 J	237 J	241 J	531 J	592 J
CHROMIUM	26	280	15.2 J	9.4 J	6.4 J	16.4 J	8.3 J	13.8 J	11.9 J	12 J	10.9 J	14.4 J	15.6 J	14.3 J
COBALT	13	2.3	16.1	12.1	11.4	15.2	10.3	24.5	14.6	14.5	15.7	17.6	14.5	9.3
COPPER	28	310	30.5 J	13.9 J	10.3 J	23.7 J	26.5 J	18.3 J	21.7	20.2	17.4	31.2	49.1	22.7
IRON		5500	40300	20500	18100	37900	22500	47400	27000	27100	26300	33200	29300 J	28100
LEAD	11	400	17.9 J	7.2 J	5.2 J	9.4 J	6.5 J	9.7 J	12.3 J	8.8 J	6.3 J	11.7 J	30.2 J	26 J
MAGNESIUM			3470 J	3830 J	2580 J	3430 J	1640 J	5440 J	1870 J	1520 J	1200 J	3130 J	3150 J	2500 J
MANGANESE	220	180	464	392	239	522	502	629	460	550	664	813	502	293
MERCURY	0.1	0.43	0.038 U	0.033 U	0.037 U	0.036 U	0.04 U	0.033 U	0.041 U	0.037 U	0.036 U	0.039 U	0.04 U	0.02 J
NICKEL	38	150	30.9 J	23.5 J	21.8 J	31.4 J	23.2 J	53.1 J	22.3	24.6	26	33	32.6	18.2
POTASSIUM			377	1300	407	360	380	265 J	383 J	398 J	414 J	257 J	362 J	386 J
SELENIUM	0.52	39	0.36 U	0.23 UJ	0.2 UJ	0.25 UJ	0.21 UJ	0.28 UJ	0.3 J	0.29 J	0.35 U	0.34 U	0.37 U	0.45
SILVER	4.2	39	0.16 U	0.16 U	0.17 U	0.16 UJ	0.17 UJ	0.16 UJ	0.17 U	0.17 U	0.16 U	0.16 U	0.17 U	0.18 U
SODIUM			274 U	273 U	276 U	273 U	288 U	57.4 J	289 U	290 U	272 U	262 U	286 U	299 U
VANADIUM	7.8	39	14.2	17.2	9.6	19.8	10.9	19.6	16	16.6	13.4	14.8	24.3	18.6
ZINC	46	2300	64.7	55.6	41.6	77.3	61	85.5	75.8	86.1	97.4	74	88.6	48
PETROLEUM HYDROCARBONS (MG/KG)														
DIESEL RANGE ORGANICS	500		170	12	18	15	11	12	28	11	5.5	8	32	430
GASOLINE RANGE ORGANICS	500		2.7 U	2.3 U	2.3 U	3.1 U	2.5 U	2.6 U	2.8 U	2.8 U	2.1 U	2.9 U	2.5 U	2.7 U

PAL=PROJECT ACTION LIMIT-SEE TEXT; RES RSL=RESIDENTIAL REGIONAL SCREENING LEVLES (USEPA)
BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION;GRAY SHADING-DETECTED;U-NOT DETECTED;J-QUANTITATION APPROXIMATE;R-REJECTED; NA-NOT ANALYZED

TABLE 4-3
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN GROUNDWATER
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID	PAL	FED MCL	ORNL*	RIDEM	CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609
LOCATION ID					CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06
SAMPLE DATE					06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09
QC					NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
VOLATILES (UG/L)										
1,1,2,2-TETRACHLOROETHANE			0.067		1 U	1 U	1 U	1 U	1 U	0.27 J
ACETONE			22000		10 UJ	1.3 J	2.3 J	5.6 J	2.2 J	10 U
BENZENE	5	5	0.41	5	1 U	1 U	1 U	1 U	0.11 J	1 U
BTEX					0.37 J	1 U	1 U	0.17 J	0.11 J	1 U
CHLORODIBROMOMETHANE	80	80			1 U	1 U	1 U	1 U	1 U	0.12 J
CHLOROFORM	80	80	0.19		1 U	1 U	1 U	3.3	1.5	2.4
CIS-1,2-DICHLOROETHENE	70	70	370	70	1 U	1 U	1 U	0.62 J	1 U	0.32 J
ISOPROPYLBENZENE					1 U	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	5	5	0.11	5	1 U	1 U	1 U	74	1 U	0.21 J
TOLUENE	1000	1000	2300	1000	1 U	1 U	1 U	0.17 J	1 U	1 U
TOTAL 1,2-DICHLOROETHENE			330		1 U	1 U	1 U	0.62 J	1 U	0.32 J
TOTAL XYLENES	10000		200	10000	0.37 J	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	5	5	2	5	1 U	1 U	1 U	14	1 U	28
PESTICIDES/PCBS (UG/L)										
4,4'-DDE			0.2		0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.018 U
4,4'-DDT			0.2		0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.018 U
ENDOSULFAN II			220		0.019 U	0.019 U	0.02 U	0.019 U	0.0089 J	0.018 U
GAMMA-CHLORDANE	2	2		2	0.0038 J	0.0096 U	0.0098 U	0.0096 U	0.0093 U	0.0092 U

PAL=PROJECT ACTION LIMIT; FED MCL=FEDERAL MAX. CONTAMINANT LEVEL; RIDEM =RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT CRITERIA FOR GA AQUIFERS
SHADING: BLACK-EXCEEDS LOWEST CRITERIA;GRAY-DETECTED;U-UNDETECTED;J-APPROX.

TABLE 4-3
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN GROUNDWATER
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID	PAL	FED MCL	ORNL*	RIDEM	CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609
LOCATION ID					CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06
SAMPLE DATE					06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09
QC					NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
METALS (UG/L)										
ALUMINUM			37000		116 J	169 J	77.2 J	186 J	202 J	208 J
ARSENIC	10	10	0.045		1.2 U	1.2 U	4	1.2 U	1.2 U	1.2 U
BARIUM	2000	2000		2000	29	29.7	32.2	16.3	30.2	38.9
CALCIUM					11800	16800	12100	10500	8750	18600
COBALT			11		4.7	8.2	16.1	5.1	18.6	9.7
IRON			26000		625 J	942 J	12800 J	509 J	9650 J	1140 J
LEAD	15	15		15	0.75 U	0.75 U	0.75 U	0.75 U	0.48 J	0.38 J
MAGNESIUM					5420 J	7580 J	5780 J	2820 J	4790 J	3720 J
MANGANESE			88		1040	2480	2990	565	1410	3370
NICKEL	100		1800	100	8.1	16.4	18	7.5	66.6	21.3
POTASSIUM					1980	2590	1750	2160	1010 J	2920
SODIUM					23100	19000	10700	25000	10400	17700
ZINC			11000		3.1 J	3.8 J	21.9	2.7 J	67.3	10.1
DISSOLVED METALS (UG/L)										
ALUMINUM			37000		21.4 J	22.7 J	21.3 J	34.5 J	28.1 J	27.9 J
ARSENIC	10	10	0.045		1.2 U	1.2 U	4	1.2 U	1.2 U	1.2 U
BARIUM	2000	2000		2000	27.2	28.6	31.4	15.6	24.7	36.9
CALCIUM					11700	16900	12000	10700	7690	19100
COBALT			11		4.1	8.1	15.9	5.2	15.8	9.8
IRON			26000		287	482	12200	86.2	8080	123
LEAD	15	15		15	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
MAGNESIUM					5270 J	7450 J	5680 J	2810 J	4200 J	3880 J
MANGANESE			88		932	2710	2930	606	1220	3350
NICKEL	100		1800	100	7	15.4	17.4	7	56.3	21.1
POTASSIUM					1760	2540	1710	2220	860 J	2850
SODIUM					21900	19000	10700	26200	9090	18200
ZINC			11000		2.5 J	3.3 J	21.5	2.3 J	57.3	6.3
PETROLEUM HYDROCARBONS (MG/L)										
GASOLINE RANGE ORGANICS					0.055 U	0.055 U	0.055 U	0.061	0.055 U	0.055 U

*ORNL - Oak Ridge National Laboratory Tap Water RSLs December 2009.
These were not identified as Project Action Limits, but are provided for
illustrative purposes. The lowest of the cancer/noncancer values are cited

PAL=PROJECT ACTION LIMIT; FED MCL=FEDERAL MAX. CONTAMINANT LEVEL; RIDEM =RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT CRITERIA FOR GA AQUIFERS
SHADING: BLACK-EXCEEDS LOWEST CRITERIA;GRAY-DETECTED;U-UNDETECTED;J-APPROX.

TABLE 4-3
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN GROUNDWATER
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID	PAL	FED MCL	ORNL*	RIDEM	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID					CRP-MW07	CRP-MW08		
SAMPLE DATE					06/03/09	06/03/09	06/03/09	06/03/09
QC					NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-MW08-0609
VOLATILES (UG/L)								
1,1,2,2-TETRACHLOROETHANE			0.067		1 U	21	15.5	20 U
ACETONE			22000		1.1 J	200 U	200 U	200 U
BENZENE	5	5	0.41	5	1 U	22	16	20 U
BTEX					1 U	54 J	38.15 J	2.3 J
CHLORODIBROMOMETHANE	80	80			1 U	20 U	20 U	20 U
CHLOROFORM	80	80	0.19		1 U	20 U	20 U	20 U
CIS-1,2-DICHLOROETHENE	70	70	370	70	1 U	20 U	20 U	20 U
ISOPROPYLBENZENE					1.2	24	17	20 U
TETRACHLOROETHENE	5	5	0.11	5	1 U	2700	2700	2700
TOLUENE	1000	1000	2300	1000	1 U	22	12.15 J	2.3 J
TOTAL 1,2-DICHLOROETHENE			330		1 U	20 U	20 U	20 U
TOTAL XYLENES	10000		200	10000	1 U	10 J	10 J	20 U
TRICHLOROETHENE	5	5	2	5	1 U	5.9 J	5.05 J	4.2 J
PESTICIDES/PCBS (UG/L)								
4,4'-DDE			0.2		0.01 J	0.018 U	0.0185 U	0.019 U
4,4'-DDT			0.2		0.01 J	0.018 U	0.0185 U	0.019 U
ENDOSULFAN II			220		0.019 U	0.018 U	0.0185 U	0.019 U
GAMMA-CHLORDANE	2	2		2	0.0094 U	0.0092 U	0.00925 U	0.0093 U

PAL=PROJECT ACTION LIMIT; FED MCL=FEDERAL MAX. CONTAMINANT LEVEL; RIDEM =RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT CRITERIA FOR GA AQUIFERS
SHADING: BLACK-EXCEEDS LOWEST CRITERIA;GRAY-DETECTED;U-UNDETECTED;J-APPROX.

TABLE 4-3
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN GROUNDWATER
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID	PAL	FED MCL	ORNL*	RIDEM	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID					CRP-MW07	CRP-MW08		
SAMPLE DATE					06/03/09	06/03/09	06/03/09	06/03/09
QC					NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-MW08-0609
METALS (UG/L)								
ALUMINUM			37000		23.4 J	99.7 J	148.35 J	197 J
ARSENIC	10	10	0.045		1.2 U	1.2 U	1.2 U	1.2 U
BARIUM	2000	2000		2000	51.2	23.8	23.35	22.9
CALCIUM					9500	9950	9650	9350
COBALT			11		1.4 J	8.3	8.3	8.3
IRON			26000		14.1 J	539 J	747.5 J	956 J
LEAD	15	15		15	0.75 U	0.75 U	0.75 U	0.75 U
MAGNESIUM					2410 J	3910 J	3800 J	3690 J
MANGANESE			88		278	787	781	775
NICKEL	100		1800	100	5.8	8.6	8.65	8.7
POTASSIUM					2040	2030	1970	1910
SODIUM					9100	8190	7935	7680
ZINC			11000		1.6 J	3.5 J	3.5 J	3.5 J
DISSOLVED METALS (UG/L)								
ALUMINUM			37000		19 J	20.9 J	21.5 J	22.1 J
ARSENIC	10	10	0.045		1.2 U	1.2 U	1.2 U	1.2 U
BARIUM	2000	2000		2000	50.2	19.9	19.15	18.4
CALCIUM					9610	10100	9700	9300
COBALT			11		1.3 J	5.6	5.4	5.2
IRON			26000		25 U	191	200	209
LEAD	15	15		15	0.75 U	0.44 J	0.44 J	0.75 U
MAGNESIUM					2450 J	4040 J	3915 J	3790 J
MANGANESE			88		276	551	521.5	492
NICKEL	100		1800	100	5.7	6.9	6.6	6.3
POTASSIUM					2030	1900	1805	1710
SODIUM					9210	8240	7980	7720
ZINC			11000		1.5 J	2 J	2.05 J	2.1 J
PETROLEUM HYDROCARBONS (MG/L)								
GASOLINE RANGE ORGANICS					0.055 U	0.42	0.41	0.4

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SHADING: BLACK-EXCEEDS LOWEST CRITERIA;GRAY-DETECTED;U-UNDETECTED;J-APPROX.

TABLE 4-4
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SEDIMENT
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID		CRP-SD01-0006	CRP-SD01-0612	CRP-SD02-0006	CRP-SD02-0612	CRP-SD03-0006	CRP-SD03-0006-AVG	CRP-SD03-0006-D	CRP-SD04-0006	CRP-SD05-0006	CRP-SD06-0006	CRP-SD06-0006-AVG	CRP-SD06-0006-D	CRP-SD06-0612	CRP-SD07-0006	CRP-SD07-0612
LOCATION ID		CRP-SD01		CRP-SD02		CRP-SD03			CRP-SD04	CRP-SD05	CRP-SD06				CRP-SD07	
SAMPLE DATE		06/19/09	06/19/09	06/19/09	06/19/09	06/18/09	06/18/09	06/18/09	06/18/09	06/15/09	06/15/09	06/15/09	06/15/09	06/15/09	06/15/09	06/15/09
TOP DEPTH	PAL	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0.5 FT	0 FT	0.5 FT
BOTTOM DEPTH		0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	1 FT	0.5 FT	1 FT
QC		NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-SD03-0006	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-SD06-0006	NORMAL	NORMAL	NORMAL
SEMIVOLATILES (UG/KG)																
ACENAPHTHENE	6710	110 J	66 J	250 U	63 J	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U	240 U	240 U	240 U
ANTHRACENE	46900	160 J	94 J	45 J	91 J	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U	240 U	240 U	240 U
BENZO(A)ANTHRACENE	74800	820	500	340	400	250 U	250 U	250 U	250 U	250 U	68 J	64 J	60 J	240 U	64 J	240 U
BENZO(A)PYRENE	88800	1100 J	650	460	590	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U	240 U	240 U	240 U
BENZO(B)FLUORANTHENE	1800000	1200 J	640	410	640	250 U	250 U	250 U	250 U	250 U	100 J	100 J	240 U	240 U	240 U	240 U
BENZO(G,H,I)PERYLENE	670000	830 J	530	350	510	250 U	250 U	250 U	150 J	250 U	180 J	170 J	160 J	240 U	240 U	240 U
BENZO(K)FLUORANTHENE	240000	440 J	220 J	140 J	240 J	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U	240 U	240 U	240 U
CHRYSENE	107000	930	650	450	460	250 U	250 U	250 U	250 U	250 U	76 J	70.5 J	65 J	240 U	62 J	240 U
DIBENZO(A,H)ANTHRACENE	6000	250 UJ	280	250 U	240 U	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U	240 U	240 U	240 U
FLUORANTHENE	113000	1100	680	380	620	250 U	250 U	250 U	250 U	250 U	87 J	86 J	85 J	240 U	130 J	240 U
FLUORENE	19000	81 J	39 J	250 U	39 J	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U	240 U	240 U	240 U
INDENO(1,2,3-CD)PYRENE	600000	910 J	580	420	590	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U	240 U	240 U	240 U
PHENANTHRENE	86000	750	430	250 J	380	250 U	250 U	250 U	30 J	250 U	52 J	53 J	54 J	35 J	110 J	240 U
PYRENE	152000	1100	650	470	610	250 U	250 U	250 U	250 U	57 J	110 J	101 J	92 J	240 U	130 J	240 U
METALS (MG/KG)																
ALUMINUM		3680 J	5070 J	4330	3380 J	2850	2795	2740	3160	3560	4020	4130	4240	4080	3850	4090
ANTIMONY	2	1.3 J	3.3 J	1.6 J	1.8 UJ	0.29 J	0.29 J	0.62 UJ	0.62 UJ	0.92 U	0.92 U	0.91 U	0.9 U	0.9 U	0.42 J	0.9 U
ARSENIC	6	8.8	8.7	8.9	19.4	2	1.95	1.9	2.9	3	2.6	2.6	2.6	2.4	3.5 J	3.2
BARIUM	20	6.1	8.3	13.9	19.1	6.4	6	5.6	8	10.1	8.5	8.65	8.8	7.8	8.7	8.3
BERYLLIUM		0.28 J	0.33	0.26 J	0.32	0.13 J	0.13 J	0.13 J	0.19 J	0.21 J	0.2 J	0.205 J	0.21 J	0.19 J	0.25 J	0.22 J
CADMIUM	0.676	0.15 J	0.6 UJ	0.17 J	0.61 UJ	0.15 J	0.15 J	0.15 J	0.14 J	0.15 J	0.19 J	0.185 J	0.18 J	0.15 J	0.15 J	0.1 J
CALCIUM		7130	6380	11400	4910	1240	1185	1130	1780	3460 J	3530 J	3345 J	3160 J	1320 J	3820 J	943 J
CHROMIUM	52	13.7	17.1	13.8	11.4	9.3	9.1	8.9	9.9	10.3	10.3	10.35	10.4	9.1	10	10.3
COBALT	10	7.6	10.4	9.3	18.8	3.3	3.3	3.3	4	3.8	3.2	3.2	3.2	3.4	3.3	3.6
COPPER	18.7	207	47.9	50.7	36.9	6.9	6.35	5.8	8.5	10.7	7.6	7.7	7.8	6.5	7	8
IRON		35200	35100	29600 J	44200	10800	10650 J	10500 J	13600 J	13500 J	10500 J	10700 J	10900 J	10100 J	11900 J	11900 J
LEAD	21	215 J	223 J	424	71.2 J	33.2	35.4	37.6	43.3	58.3 J	46.1 J	45.2 J	44.3 J	50.1 J	136 J	29.5 J
MAGNESIUM		2400	2860	2570	3260	1530	1500	1470	1890	1880	1950	1995	2040	1930	1760	1980
MANGANESE	260	299	411	437 J	2190	124 J	121 J	118 J	143 J	148 J	116 J	118.5 J	121 J	117 J	117 J	123 J
NICKEL	15.9	23.2	47.4	23.6	44.8	8.4	8.2	8	10.1	10.7	8.4	8.6	8.8	8.7	9.1	9.5
POTASSIUM		452 J	633 J	527 J	596 J	354 J	358.5 J	363 J	459 J	594 J	660 J	660.5 J	661 J	546 J	527 J	622 J
SELENIUM	1	0.78 UJ	0.78 UJ	0.29 UJ	2 U	0.27 U	0.22 UJ	0.17 UJ	0.27 U	0.26 UJ	0.4 U	0.3 UJ	0.2 UJ	0.39 U	0.39 U	0.28 UJ
SILVER	0.5	0.36 U	0.36 U	0.19 U	0.36 U	0.12 U	0.12 U	0.12 U	0.12 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
SODIUM		2670	2390	2550	1770	2560	2665	2770	2880	2820	2570	2550	2530	1770	2150	2440
VANADIUM	57	16	17.2	18	13.1	13.5	12.65	11.8	12.7	15.3 J	12.9 J	13.15 J	13.4 J	13.1 J	16.8 J	16.1 J
ZINC	68	89.3 J	72.4 J	99.7	65.1 J	40.3	40.1	39.9	43.3	48.7	40.5	40.95	41.4	34.9	40.4	39.7

PAL=PROJECT ACTION LIMT - SEE TEXT
BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-4
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SEDIMENT
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID		CRP-SD08-0006	CRP-SD08-0612	CRP-SD09-0006	CRP-SD09-0612	CRP-SD10-0006	CRP-SD10-0006-AVG	CRP-SD10-0006-D	CRP-SD10-0612	CRP-SD11-0006	CRP-SD11-0612	CRP-SD12-0006	CRP-SD13-0006	CRP-SD13-0612	CRP-SD14-0006	CRP-SD14-0612
LOCATION ID		CRP-SD08		CRP-SD09		CRP-SD10				CRP-SD11		CRP-SD12	CRP-SD13		CRP-SD14	
SAMPLE DATE		06/19/09	06/19/09	06/19/09	06/19/09	06/17/09	06/17/09	06/17/09	06/17/09	06/16/09	06/16/09	06/18/09	06/17/09	06/17/09	06/18/09	06/18/09
TOP DEPTH	PAL	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT	0.5 FT	0 FT	0.5 FT
BOTTOM DEPTH		0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT	1 FT	0.5 FT	1 FT
QC		NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-SD10-0006	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SEMIVOLATILES (UG/KG)																
ACENAPHTHENE	6710	250 U	240 U	250 U	250 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	46900	250 U	240 U	250 U	250 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	74800	250 U	240 U	250 U	110 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	88800	250 U	240 U	250 U	250 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	1800000	250 U	240 U	250 U	250 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	670000	250 U	240 U	250 U	230 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	240000	250 U	240 U	250 U	250 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	107000	250 U	240 U	250 U	120 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	6000	250 U	240 U	250 U	250 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	113000	250 U	240 U	250 U	170 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	19000	250 U	240 U	250 U	250 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	600000	250 U	240 U	250 U	250 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	86000	250 U	240 U	250 U	110 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	152000	250 U	240 U	250 U	180 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)																
ALUMINUM		3460	3820	2920	2860	3640	3740	3840	3530	4020	3860	4720	3270	3210	3210	3210
ANTIMONY	2	0.87 J	0.32 J	0.91 UJ	0.33 J	0.91 UJ	0.91 UJ	0.91 UJ	0.34 J	0.29 J	0.51 J	0.41 J	0.63 UJ	0.62 UJ	0.62 UJ	0.93 UJ
ARSENIC	6	2.4	3.8	2.3	2.1	2.2	2.2	2.2	1.9	3	2.1	3.5	1.9	1.8	1.7	1.8
BARIUM	20	6.5	8.5	6.2	6.1	7.5	7.75	8	7	8.2	6.4	9.4	6.2	5.7	5.7	5.9
BERYLLIUM		0.14 J	0.17 J	0.16 J	0.14 J	0.17 J	0.165 J	0.16 J	0.15 J	0.21 J	0.18 J	0.22 J	0.14 J	0.13 J	0.12 J	0.14 J
CADMIUM	0.676	0.19 J	0.22 J	0.19 J	0.2 J	0.17 J	0.19 J	0.21 J	0.16 J	0.16 J	0.095 J	0.18 J	0.11 J	0.14 J	0.12 J	0.16 J
CALCIUM		7050	1690	3540	2450	2990 J	3960 J	4930	1370 J	6610 J	1030 J	7220	924 J	3480 J	835	672
CHROMIUM	52	10.1	11.3	9.2	9.9	10	10.4	10.8	8.6	11.6	9.3	12.5	9.3	8.7	9.1	9.2
COBALT	10	3.1	3.7	3.5	3.2	2.4	2.5	2.6	2.2	2.7	2.6	3.3	2.4	2.4	2.4	2.4
COPPER	18.7	6.3	7.9	6.3	6.2	6.5	6.8	7.1	5.5	9.3	6.2	10.4	5	5.4	5	5.1
IRON		10100 J	11700 J	11800 J	10600 J	8540 J	8655 J	8770	7830 J	9940 J	10100 J	11500	8490 J	7800 J	7780	7880
LEAD	21	230	54.4	43.1	70.5	61.3 J	67.3 J	73.3	109 J	152 J	169 J	99.7	20.9 J	23.5 J	27	39.4
MAGNESIUM		1700	1810	1530	1460	1810	1855	1900	1670	2070	1840	2380	1640	1600	1650	1660
MANGANESE	260	105 J	109 J	127 J	115 J	94.9 J	93.55 J	92.2 J	89.8 J	107 J	112 J	120 J	92.5 J	86.6 J	81.5 J	84 J
NICKEL	15.9	8	9.1	8.8	8.1	7.2	7.2	7.2	6.7	8.6	8.2	8.9	6.7	6.6	6.2	6.9
POTASSIUM		437 J	507 J	430 J	401 J	617 J	610 J	603 J	500 J	768 J	476 J	773 J	481 J	429 J	443 J	438 J
SELENIUM	1	0.27 UJ	0.38 U	0.39 U	0.4 U	0.4 J	0.27 J	0.28 UJ	0.27 UJ	0.22 UJ	0.21 UJ	0.26 UJ	0.19 UJ	0.13 UJ	0.12 UJ	0.25 UJ
SILVER	0.5	0.19 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.11 J	0.18 U	0.13 U	0.13 U	0.12 U	0.12 U	0.19 U
SODIUM		2170	2050	2150	1900	2750	2690	2630	2120	3910	2030	3890	2670	2530	2690	2420
VANADIUM	57	11.7	13.6	12.1	11.1	10.3 J	10.35 J	10.4	9.5 J	13.3 J	12 J	12.2	10.2 J	9.1 J	8.7	8.9
ZINC	68	38.4	44.3	43.5	41.1	34.4	34.9	35.4	29.8	44.4	34.5	43.6	31.6	31.8	29.4	30.7

PAL=PROJECT ACTION LIMT - SEE TEXT
BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-4
ANALYTICAL RESULTS - DETECTED COMPOUNDS IN SEDIMENT
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

SAMPLE ID		CRP-SD15-0006	CRP-SD15-0006-AVG	CRP-SD15-0006-D	CRP-SD15-0612	CRP-SD16-0006	CRP-SD16-0612	CRP-SD17-0006	CRP-SD18-0006	CRP-SD18-0612	CRP-SD19-0006	CRP-SD19-0612	CRP-SD20-0006	CRP-SD20-0612
LOCATION ID		CRP-SD15				CRP-SD16		CRP-SD17	CRP-SD18		CRP-SD19		CRP-SD20	
SAMPLE DATE		06/16/09	06/16/09	06/16/09	06/16/09	06/17/09	06/17/09	06/16/09	06/16/09	06/16/09	06/16/09	06/16/09	06/17/09	06/17/09
TOP DEPTH	PAL	0 FT	0 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0.5 FT
BOTTOM DEPTH		0.5 FT	0.5 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	1 FT
QC		ORIG	AVERAGE OF DUPLICATES	DUPLICATE OF CRP-SD15-0006	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SEMIVOLATILES (UG/KG)														
ACENAPHTHENE	6710	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	46900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	74800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	88800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	1800000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	670000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	240000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	107000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	6000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	113000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	19000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	600000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	86000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	152000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)														
ALUMINUM		3170	3140	3110	3600	3850	3540	4050 J	2910	2800	3150	3060	3340	3480
ANTIMONY	2	0.63 U	0.78 U	0.93 U	0.35 J	0.64 UJ	0.68 J	0.68 U	0.64 U	0.64 U	0.64 U	0.62 U	0.63 UJ	0.62 UJ
ARSENIC	6	1.9	1.9	1.9	3	2.6	2.8	3.9	1.7	1.7	2	1.8	1.9	1.9
BARIUM	20	6.1	6.3	6.5	7.2	8.3	7.4	11.1	5.4	5.5	5.8	5.6	6.6	6.6
BERYLLIUM		0.15 J	0.145 J	0.14 J	0.18 J	0.16 J	0.15 J	0.23 J	0.14 J	0.14 J	0.15 J	0.14 J	0.13 J	0.13 J
CADMIUM	0.676	0.11 J	0.12 J	0.13 J	0.15 J	0.21 J	0.21 J	0.2 J	0.068 J	0.08 J	0.095 J	0.094 J	0.15 J	0.17 J
CALCIUM		1660 J	1695 J	1730 J	1480 J	12400	5790	36100 J	626 J	604 J	894 J	1200 J	3120	2410
CHROMIUM	52	8.5	8.5	8.5	9	10.5	10.3	11.9	7.9	8.2	8.7	8.5	10	9.8
COBALT	10	2.2	2.2	2.2	2.2	2.7	2.5	3.1	1.9	1.9	2.1	2	2.5	2.5
COPPER	18.7	4.8	4.8	4.8	5.7	8.3	7.8	10.5	3.9	4.6	4.5	4.9	5.1	6.3
IRON		7840 J	7760 J	7680 J	10100 J	8380	7540	10800 J	7760 J	7660 J	8260 J	7640 J	7940	7890
LEAD	21	48.5 J	48.8 J	49.1 J	83.6 J	37.9	158	27.9 J	7.2 J	7.8 J	8.6 J	8.1 J	11	11.4
MAGNESIUM		1650	1600	1550	2010	1940	1640	2540	1570	1530	1670	1620	1700	1670
MANGANESE	260	89.5 J	87.75 J	86 J	92.5 J	89.8 J	79.5 J	134 J	92.5 J	86.9 J	93.6 J	90 J	83.9 J	82.4 J
NICKEL	15.9	7.8	7.5	7.2	9.4	8.3	8.6	8.5	5.8	5.9	6.3	6.2	6.5	7
POTASSIUM		512 J	509 J	506 J	646 J	663 J	542 J	922 J	460 J	451 J	514 J	465 J	488 J	477 J
SELENIUM	1	0.27 U	0.275 UJ	0.28 UJ	0.33 UJ	0.29 UJ	0.33 J	0.34 UJ	0.16 UJ	0.28 U	0.28 U	0.21 UJ	0.27 U	0.19 UJ
SILVER	0.5	0.13 U	0.16 U	0.19 U	0.14 U	0.13 U	0.058 J	0.086 J	0.13 U	0.13 U	0.13 U	0.12 U	0.13 U	0.12 U
SODIUM		2790	2655	2520	4530	3390	2190	4910	2800	2850	2940	2720	2590	2170
VANADIUM	57	9.5 J	9.3 J	9.1 J	11.7 J	10	9.9	13.7 J	9.7 J	9.9 J	10.2 J	10 J	9.2	9.9
ZINC	68	30.8	30.2	29.6	32.5	38.4	35.1	41.8 J	26.5	29.6	29.5	31.1	31.8	33.4

PAL=PROJECT ACTION LIMT - SEE TEXT
BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-5
SUMMARY OF PELLET RECOVERY
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, PORTSMOUTH, RI

LOCATION	SAMPLE ID	INTERVAL	TOTAL SAMPLE WEIGHT (kg)	PELLETS		
				COUNT*	WEIGHT (kg)	Per SqFt**
SD01	CRP-SD01-0006	0-6 in	2.938	6	0.0002	39
	CRP-SD01-0612	6+ in	1.349	2	NM	13
SD02	CRP-SD02-0006	0-6 in	3.369	5	0.0002	32
	CRP-SD02-0612	6+ in	1.163	0	NM	0
SD03	CRP-SD03-0006	0-6 in	3.729	51	0.0024	331
	Refusal at 6 in, no sample collected at deeper interval					
SD04	CRP-SD04-0006	0-6 in	2.141	8	0.0002	52
	Refusal at 6 in, no sample collected at deeper interval					
SD05	CRP-SD05-0006	0-6 in	3.356	34	0.0016	220
	Refusal at 6 in, no sample collected at deeper interval					
SD06	CRP-SD06-0006	0-6 in	3.285	65	0.0030	421
	CRP-SD06-0612	6+ in	0.875	48	0.0022	311
SD07	CRP-SD07-0006	0-6 in	3.605	336	0.0196	2179
	CRP-SD07-0612	6+ in	1.227	12	0.0004	78
SD08	CRP-SD08-0006	0-6 in	3.516	586	0.0330	3800
	CRP-SD08-0612	6+ in	1.446	38	0.0020	246
SD09	CRP-SD09-0006	0-6 in	2.296	63	0.0032	409
	CRP-SD09-0612	6+ in	0.785	48	0.0024	311
SD10	CRP-SD10-0006	0-6 in	3.296	295	0.0168	1913
	CRP-SD10-0612	6+ in	1.330	288	0.0170	1867
SD11	CRP-SD11-0006	0-6 in	3.615	945	0.0596	6128
	CRP-SD11-0612	6+ in	1.763	506	0.0322	3281
SD12	CRP-SD12-0006	0-6 in	1.643	138	0.0086	895
	Refusal at 5 in, no sample collected at deeper interval					
SD13	CRP-SD13-0006	0-6 in	3.673	99	0.0056	642
	CRP-SD13-0612	6+ in	1.539	132	0.0078	856
SD14	CRP-SD14-0006	0-6 in	3.595	151	0.0104	979
	CRP-SD14-0612	6+ in	1.326	181	0.0114	1174
SD15	CRP-SD15-0006	0-6 in	3.740	312	0.0234	2023
	CRP-SD15-0612	6+ in	1.791	297	0.0228	1926
SD16	CRP-SD16-0006	0-6 in	3.003	114	0.0082	739
	CRP-SD16-0612	6+ in	1.484	350	0.0268	2269
SD17	CRP-SD17-0006	0-6 in	2.738	44	0.0032	285
	Refusal at 6 in, no sample collected at deeper interval					
SD18	CRP-SD18-0006	0-6 in	3.026	0	NM	0
	CRP-SD18-0612	6+ in	1.201	1	NM	6
SD19	CRP-SD19-0006	0-6 in	3.648	5	0.0004	32
	CRP-SD19-0612	6+ in	1.290	1	NM	6
SD20	CRP-SD20-0006	0-6 in	3.752	0	NM	0
	CRP-SD20-0612	6+ in	1.264	1	NM	6

* Count = number of pellets counted in sample = 22.2 sq.in of coverage

** Calculated value: (count)*(144 sq.in/(2.776 sq.in * 8 core tubes))

Highlight results exceed 10 pellet per square foot screening value

TABLE 6-1
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
GROUNDWATER
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD[1]	Minimum Detect[1]	Maximum Detect[1]	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results[2]	EPA Tapwater Criteria[3]	EPA Tapwater COPC?	Rationale for EPA Residential COPC Selection	RIDEM Residential Groundwater Criteria[4]	RIDEM Groundwater COPC?	Rationale for RIDEM Groundwater COPC Selection
VOCs (UG/L)												
1,1,2,2-TETRACHLOROETHANE	2/8	0.27	21	CRP-MW08-0609	7.9	2.3	**0.067 C**	**YES**	ASL	NA	NO	NSL
ACETONE	5/8	1.1	5.6	CRP-MW04-0609	2.5	15.3	2200 N	NO	BSL	NA	NO	NSL
BENZENE	2/8	0.11	22	CRP-MW08-0609	8.1	2.4	**0.41 C**	**YES**	ASL	**5**	**YES**	ASL
BTEX	4/8	0.11	54	CRP-MW08-0609	9.7	5.1	NA	NO	NSL	NA	NO	NSL
CHLORODIBROMOMETHANE	1/8	0.12	0.12	CRP-MW06-0609	0.12	1.6	0.15 C	NO	BSL	NA	NO	NSL
CHLOROFORM	3/8	1.5	3.3	CRP-MW04-0609	2.4	2.4	**0.19 C**	**YES**	ASL	NA	NO	NSL
CIS-1,2-DICHLOROETHENE	2/8	0.32	0.62	CRP-MW04-0609	0.47	1.7	37 N	NO	BSL	70	NO	BSL
ISOPROPYLBENZENE	2/8	1.2	24	CRP-MW08-0609	9.1	2.7	68 N	NO	BSL	NA	NO	NSL
TETRACHLOROETHENE	3/8	0.21	2700	CRP-MW08-0609	925	347	**0.11 C**	**YES**	ASL	**5**	**YES**	ASL
TOLUENE	2/8	0.17	22	CRP-MW08-0609	6.2	1.9	230 N	NO	BSL	100	NO	BSL
TOTAL 1,2-DICHLOROETHENE	2/8	0.32	0.62	CRP-MW04-0609	0.47	1.7	33 N	NO	BSL	NA	NO	NSL
TOTAL CHLORINATED ETHENES	3/8	28.53	2706	CRP-MW08-0609	941	353	NA	NO	NSL	NA	NO	NSL
TOTAL CHLORINATED VOCS	4/8	1.5	2726.9	CRP-MW08-0609	711	356	NA	NO	NSL	NA	NO	NSL
TOTAL XYLENES	2/8	0.37	10	CRP-MW08-0609	5.2	1.7	20 N	NO	BSL	10000	NO	BSL
TRICHLOROETHENE	3/8	4.2	28	CRP-MW06-0609	15.7	6.2	**2 C**	**YES**	ASL	**5**	**YES**	ASL
Petroleum Hyrdocarbons (MG/L)												
GASOLINE RANGE ORGANICS	2/8	0.061	0.42	CRP-MW08-0609	0.24	0.08	NA	NO	NSL	NA	NO	NSL
Pesticides/PCBs (UG/L)												
4,4'-DDE	1/8	0.01	0.01	CRP-MW07-0609	0.01	0.0095	0.2 C	NO	BSL	NA	NO	NSL
4,4'-DDT	1/8	0.01	0.01	CRP-MW07-0609	0.01	0.0095	0.2 C	NO	BSL	NA	NO	NSL
ENDOSULFAN II	1/8	0.0089	0.0089	CRP-MW05-0609	0.0089	0.0094	22[5] N	NO	BSL	NA	NO	NSL
GAMMA-CHLORDANE	1/8	0.0038	0.0038	CRP-MW01-0609	0.0038	0.0046	0.19[6] C	NO	BSL	NA	NO	NSL
TOTAL DDD/DDE/DDT	1/8	0.02	0.02	CRP-MW07-0609	0.02	0.011	NA	NO	NSL	NA	NO	NSL
Metals (UG/L)												
ALUMINUM	8/8	23.4	208	CRP-MW06-0609	141	141	3700 N	NO	BSL	NA	NO	NSL
ARSENIC	1/8	4	4	CRP-MW03-0609	4	1.0	**0.045 C**	**YES**	ASL	NA	NO	NSL
BARIUM	8/8	16.3	51.2	CRP-MW07-0609	31.4	31.4	730 N	NO	BSL	200	NO	BSL
CALCIUM	8/8	8750	18600	CRP-MW06-0609	12212	12213	NA	NO	NUT	NA	NO	NUT
COBALT	8/8	1.4	18.6	CRP-MW05-0609	9.0	9.0	**1.1 N**	**YES**	ASL	NA	NO	NSL
IRON	8/8	14.1	12800	CRP-MW03-0609	3303	3303	**2600 N**	**YES**	ASL	NA	NO	NSL
LEAD	2/8	0.38	0.48	CRP-MW05-0609	0.43	0.39	15[7]	NO	BSL	15	NO	BSL
MAGNESIUM	8/8	2410	7580	CRP-MW02-0609	4540	4540	NA	NO	NUT	NA	NO	NUT
MANGANESE	8/8	278	3370	CRP-MW06-0609	1614	1614	**88 N**	**YES**	ASL	NA	NO	NSL
NICKEL	8/8	5.8	66.6	CRP-MW05-0609	19.0	19.0	73 N	NO	BSL	100	NO	BSL
POTASSIUM	8/8	1010	2920	CRP-MW06-0609	2053	2053	NA	NO	NUT	NA	NO	NUT
SODIUM	8/8	7680	25000	CRP-MW04-0609	15367	15367	NA	NO	NUT	NA	NO	NUT
ZINC	8/8	1.6	67.3	CRP-MW05-0609	14.3	14.3	1100 N	NO	BSL	NA	NO	NSL
Dissolved Metals (UG/L)												
ALUMINUM	8/8	19	34.5	CRP-MW04-0609	24.6	24.6	3700 N	NO	BSL	NA	NO	NSL
ARSENIC	1/8	4	4	CRP-MW03-0609	4	1.0	**0.045 C**	**YES**	ASL	NA	NO	NSL
BARIUM	8/8	15.6	50.2	CRP-MW07-0609	29.2	29.2	730 N	NO	BSL	200	NO	BSL
CALCIUM	8/8	7690	19100	CRP-MW06-0609	12175	12175	NA	NO	NSL	NA	NO	NUT
COBALT	8/8	1.3	15.9	CRP-MW03-0609	8.2	8.2	**1.1 N**	**YES**	ASL	NA	NO	NSL

TABLE 6-1
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
GROUNDWATER
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD(1)	Minimum Detect(1)	Maximum Detect(1)	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results(2)	EPA Tapwater Criteria(3)	EPA Tapwater COPC?	Rationale for EPA Residential COPC Selection	RIDEM Residential Groundwater Criteria(4)	RIDEM Groundwater COPC?	Rationale for RIDEM Groundwater COPC Selection
IRON	7/8	86.2	12200	CRP-MW03-0609	3065	2684	**2600 N**	**YES**	ASL	NA	NO	NSL
LEAD	1/8	0.44	0.44	CRP-MW08-0609	0.44	0.38	15(7)	NO	BSL	15	NO	BSL
MAGNESIUM	8/8	2450	7450	CRP-MW02-0609	4457	4457	NA	NO	NSL	NA	NO	NUT
MANGANESE	8/8	276	3350	CRP-MW06-0609	1568	1568	**88 N**	**YES**	ASL	NA	NO	NSL
NICKEL	8/8	5.7	56.3	CRP-MW05-0609	17.1	17.1	73 N	NO	BSL	100	NO	BSL
POTASSIUM	8/8	860	2850	CRP-MW06-0609	1972	1972	NA	NO	NSL	NA	NO	NUT
SODIUM	8/8	7720	26200	CRP-MW04-0609	15285	15285	NA	NO	NSL	NA	NO	NUT
ZINC	8/8	1.5	57.3	CRP-MW05-0609	12.1	12.1	1100 N	NO	BSL	NA	NO	NSL

(1) Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentration detected and as one sample when determining the frequency of detection and average results.
(2) Average of all analytical results is calculated using half of the detection limit for non-detects.
(3) EPA Regional Screening Level (ORNL, December 2009). Non-carcinogenic values were divided by ten to equate an RSL of 0.1.
(4) Rhode Island Residential Screenig Level (February 2004).
(5) Endosulfan used as a surrogate concentration for Endosulfan II.
(6) Chlordane used as a surrogate concentration for Gamma Chlordane.
(7) The EPA Action Level is used as the Screening Criteria for Lead.

Shaded criterion indicates that the maximum detected concentration exceeds the screening criteria and was retained as a COPC.
FOD - Frequency of Detection
ASL - Above Screening Level
BSL - Below Screening Level
NSL - No screening level
NA - Not Applicable
NUT - Essential Nutrient

TABLE 6-2
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
SURFACE SOIL
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD[1]	Minimum Detect	Maximum Detect	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results[2]	EPA Residential Soil Criteria[3]	EPA Residential COPC?	Rationale for EPA Residential COPC Selection	RIDEM Residential Soil Criteria[4]	RIDEM Residential COPC?	Rationale for RIDEM Residential COPC Selection	Background Concentration[5]	Exceed Background Concentration?
Volatiles (UG/KG)														
ACETONE	4/16	7.2	76	CRP-SB07-0001	22	26	6100000 N	NO	BSL	7800000	NO	BSL	NA	NO
METHYLENE CHLORIDE	1/16	0.74	0.74	CRP-SB03-0001	0.74	5.4	11000 C	NO	BSL	45000	NO	BSL	NA	NO
TETRACHLOROETHENE	1/16	1.1	1.1	CRP-SS02-0612	1.1	2.8	550 C	NO	BSL	12000	NO	BSL	NA	NO
TOTAL CHLORINATED ETHENES	1/16	1.1	1.1	CRP-SS02-0612	1.1	3.4	NA	NO	NSL	NA	NO	BSL	NA	NO
TOTAL CHLORINATED VOCS	2/16	0.74	1.1	CRP-SS02-0612	0.92	3.2	NA	NO	NSL	NA	NO	BSL	NA	NO
Semivolatiles (UG/KG)														
1,1-BIPHENYL	1/25	300	300	CRP-SB09-0001	300	487	390000 N	NO	BSL	800	NO	BSL	NA	NO
2-METHYLNAPHTHALENE	2/25	580	1400	CRP-SB09-0001	990	524	31000 N	NO	BSL	123000	NO	BSL	NA	NO
ACENAPHTHENE	8/25	260	15000	CRP-SB09-0001	2478	1239	340000 N	NO	BSL	43000	NO	BSL	NA	NO
ACENAPHTHYLENE	1/25	1200	1200	CRP-SB05-0001	1200	505	340000[6] N	NO	BSL	23000	NO	BSL	NA	NO
ANTHRACENE	11/25	150	16000	CRP-SB09-0001	2449	1406	1700000 N	NO	BSL	35000	NO	BSL	NA	NO
BENZO(A)ANTHRACENE	16/25	70	91000	CRP-SB09-0001	10129	6721	**150 C**	**YES**	ASL	**900**	**YES**	ASL	NA	NO
BENZO(A)PYRENE	15/25	74	120000	CRP-SB09-0001	13374	8079	**15 C**	**YES**	ASL	**400**	**YES**	ASL	NA	NO
BENZO(B)FLUORANTHENE	16/25	44	130000	CRP-SB09-0001	14358	9452	**150 C**	**YES**	ASL	**900**	**YES**	ASL	NA	NO
BENZO(G,H,I)PERYLENE	14/25	850	78000	CRP-SB09-0001	9616	5666	170000[7] N	NO	NSL	**800**	**YES**	ASL	NA	NO
BENZO(K)FLUORANTHENE	12/25	46	47000	CRP-SB09-0001	7061	3740	**1500 C**	**YES**	ASL	**900**	**YES**	ASL	NA	NO
CARBAZOLE	7/25	280	11000	CRP-SB09-0001	2233	1525	NA	NO	NSL	NA	NO	NSL	NA	NO
CHRYSENE	16/25	80	1.00E+05	CRP-SB09-0001	11372	7326	**15000 C**	**YES**	ASL	**400**	**YES**	ASL	NA	NO
DIBENZO(A,H)ANTHRACENE	6/25	2100	22000	CRP-SB09-0001	6217	1610	**15 C**	**YES**	ASL	**400**	**YES**	ASL	NA	NO
DIBENZOFURAN	7/25	180	3500	CRP-SB09-0001	757	583	7800 N	NO	BSL	NA	NO	NSL	NA	NO
FLUORANTHENE	16/25	140	110000	CRP-SB09-0001	13497	8876	230000 N	NO	BSL	**20000**	**YES**	ASL	NA	NO
FLUORENE	5/25	230	6100	CRP-SB09-0001	1668	747	230000 N	NO	BSL	28000	NO	BSL	NA	NO
HIGH MOLECULAR WEIGHT PAHS	12/16	72	899000	CRP-SB09-0001	94126	70739	NA	NO	NSL	NA	NO	NSL	NA	NO
INDENO(1,2,3-CD)PYRENE	11/25	1200	81000	CRP-SB09-0001	12709	5921	**150 C**	**YES**	ASL	**900**	**YES**	ASL	NA	NO
LOW MOLECULAR WEIGHT PAHS	10/16	31	105200	CRP-SB09-0001	11859	7624	NA	NO	NSL	NA	NO	NSL	NA	NO
NAPHTHALENE	5/25	240	3700	CRP-SB09-0001	1012	589	**3600 C**	**YES**	ASL	54000	NO	BSL	NA	NO
N-NITROSODIPHENYLAMINE	5/25	420	920	CRP-SO-ARC1A	570	610	99000 C	NO	NSL	NA	NO	NSL	NA	NO
PHENANTHRENE	19/25	31	63000	CRP-SB09-0001	5579	4376	170000[7] N	NO	BSL	**40000**	**YES**	ASL	NA	NO
PYRENE	21/25	66	120000	CRP-SB09-0001	11173	9506	170000 N	NO	BSL	**13000**	**YES**	ASL	NA	NO
TOTAL PAHS	12/16	103	1004200	CRP-SB09-0001	104009	78165	NA	NO	NSL	NA	NO	BSL	NA	NO
Propellants (MG/KG)														
2,4-DINITROTOLUENE	4/9	0.098	0.16	CRP-SO-ARC1A	0.13	0.14	1600 C	NO	BSL	NA	NO	NSL	NA	NO
NITROGLYCERIN	9/9	1.2	16	CRP-SO-ARC1A	7.3	7.3	610 N	NO	BSL	NA	NO	NSL	NA	NO
Metals (MG/KG)														
ALUMINUM	16/16	5160	14900	CRP-SS02-0612	10775	10775	**7700 N**	**YES**	ASL	NA	NO	NSL	**11800**	YES
ANTIMONY	7/16	0.43	8.5	CRP-SB10-0001	2.2	1.4	**3.1 N**	**YES**	ASL	10	NO	BSL	NA	NA
ARSENIC	16/16	4.6	85.5	CRP-SB02-0001	18.8	18.8	**0.39 C**	**YES**	ASL	**7**	**YES**	ASL	**4.03**	YES
BARIUM	16/16	12.6	51.9	CRP-SB02-0001	25.1	25.1	1500 N	NO	BSL	5500	NO	BSL	**22.4**	YES
BERYLLIUM	16/16	0.22	0.39	CRP-SB10-0001	0.32	0.32	16 N	NO	BSL	0.4	NO	BSL	0.419	YES
CADMIUM	16/16	0.104	1.4	CRP-SB10-0001	0.53	0.531	7 N	NO	BSL	39	NO	BSL	ND	NA
CALCIUM	16/16	413	14200	CRP-SB09-0001	1966	1966	NA	NO	NUT	NA	NO	NUT	**323**	YES
CHROMIUM	32/32	4.4	45.9	CRP-SB03-0001	15.8	15.8	**0.29 [8]C**	**YES**	ASL	390 [8]	NO	BSL	**9.87**	YES
COPPER	16/16	20.1	579	CRP-SB10-0001	83.1	83.1	**310 N**	**YES**	ASL	3100	NO	BSL	**6.84**	YES
IRON	16/16	17600	33800	CRP-SB08-0001	26641	26641	**5500 N**	**YES**	ASL	NA	NO	NSL	**13800**	YES
LEAD	16/16	13.3	999	CRP-SB02-0001	179	179	**400**	**YES**	ASL	**150**	**YES**	ASL	**10.8**	YES
MAGNESIUM	16/16	1530	4590	CRP-SB09-0001	3202	3202	NA	NO	NUT	NA	NO	NUT	**1520**	YES
MANGANESE	16/16	187	660	CRP-SB08-0001	434	434	**180 N**	**YES**	ASL	**390**	**YES**	ASL	**141**	YES
MERCURY	11/16	0.017	0.17	CRP-SB10-0001	0.06	0.049	2.3 N	NO	BSL	23	NO	BSL	**0.0271**	YES
NICKEL	16/16	15.3	35.7	CRP-SB10-0001	26.5	26.5	150 N	NO	BSL	1000	NO	BSL	**7.7**	YES
POTASSIUM	27/32	0.23	497	CRP-SB09-0001	225	189	NA	NO	NUT	NA	NO	NUT	**494**	YES

TABLE 6-2
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
SURFACE SOIL
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD[1]	Minimum Detect	Maximum Detect	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results[2]	EPA Residential Soil Criteria[3]	EPA Residential COPC?	Rationale for EPA Residential COPC Selection	RIDEM Residential Soil Criteria[4]	RIDEM Residential COPC?	Rationale for RIDEM Residential COPC Selection	Background Concentration[5]	Exceed Background Concentration?
SILVER	2/16	0.1	0.21	CRP-SB03-0001	0.16	0.096	39 N	NO	BSL	200	NO	BSL	NA	NA
SODIUM	1/16	67.5	67.5	CRP-SS02-0006	67.5	139	NA	NO	NUT	NA	NO	NUT	**32.3**	YES
VANADIUM	16/16	11.3	33	CRP-SB10-0001	17.9	17.9	39 N	NO	BSL	550	NO	BSL	**17**	YES
ZINC	16/16	57.5	217	CRP-SB09-0001	115	115	2300 N	NO	BSL	6000	NO	BSL	**22**	YES
Pesticides/PCBs (UG/KG)														
4,4'-DDD	3/16	1.2	3.6	CRP-SB09-0001	2.2	70.5	2000 C	NO	BSL	NA	NO	NSL	NA	NO
4,4'-DDE	9/16	0.6	38	CRP-SS01-0006	13.5	8.2	1400 C	NO	BSL	NA	NO	NSL	NA	NO
4,4'-DDT	7/16	0.81	62	CRP-SB09-0001	15.7	152	1700 C	NO	BSL	NA	NO	NSL	NA	NO
ALDRIN	1/16	0.39	0.39	CRP-TP05-0102	0.39	0.21	29 C	NO	BSL	NA	NO	NSL	NA	NO
ALPHA-BHC	2/16	0.32	0.93	CRP-SB06-0001	0.63	0.26	77 C	NO	BSL	NA	NO	NSL	NA	NO
ALPHA-CHLORDANE	2/16	2.3	3.8	CRP-SB11-0001	3.1	0.55	1600 [9]C	NO	BSL	500 [9]	NO	BSL	NA	NO
AROCLOR-1260	14/16	7.2	45000	CRP-SB02-0001	5657	4951	**220 C**	**YES**	ASL	**10000** [10]	**YES**	ASL	NA	NO
DIELDRIN	9/16	0.5	190	CRP-SS01-0006	30.2	51.8	**30 C**	**YES**	ASL	**40**	**YES**	ASL	NA	NO
ENDOSULFAN I	1/16	1.2	1.2	CRP-SB06-0001	1.2	0.26	37000 [11]N	NO	BSL	NA	NO	NSL	NA	NO
ENDOSULFAN II	7/16	0.31	480	CRP-SB02-0001	102	45	37000 [11]N	NO	BSL	NA	NO	NSL	NA	NO
ENDOSULFAN SULFATE	3/16	0.6	5.9	CRP-SB05-0001	3.1	59.8	37000 [11]N	NO	BSL	NA	NO	NSL	NA	NO
ENDRIN	7/16	0.33	200	CRP-SS01-0006	61.5	27.3	1800 N	NO	BSL	NA	NO	NSL	NA	NO
ENDRIN ALDEHYDE	2/16	0.63	1.7	CRP-SB04-0002	1.2	1	1800 [12]N	NO	BSL	NA	NO	NSL	NA	NO
ENDRIN KETONE	1/16	0.87	0.87	CRP-SB08-0001	0.87	1.1	1800 [12]N	NO	BSL	NA	NO	NSL	NA	NO
GAMMA-BHC (LINDANE)	6/16	0.79	12	CRP-SB04-0002	3.6	1.5	520 C	NO	BSL	NA	NO	NSL	NA	NO
GAMMA-CHLORDANE	5/16	1.4	13	CRP-SS01-0006	5.5	3.1	1600 [9]C	NO	BSL	500 [9]	NO	BSL	NA	NO
HEPTACHLOR EPOXIDE	2/16	1.1	1.4	CRP-SB11-0001	1.3	0.62	53 C	NO	BSL	NA	NO	NSL	NA	NO
TOTAL AROCLOR	14/16	7.2	45000	CRP-SB02-0001	5657	4951	NA	NO	BSL	**1000** [10]	**YES**	ASL	NA	NO
TOTAL DDD/DDE/DDT	10/16	0.6	95.6	CRP-SB09-0001	23.8	54.3	NA	NO	BSL	NA	NO	NSL	NA	NO
Petroleum Hydrocarbons (MG/KG)														
DIESEL RANGE ORGANICS	16/16	32	5600	CRP-SB09-0001	530	530	NA	NO	BSL	NA	NO	NSL	NA	NO

Shaded criterion indicates that the maximum detected concentration exceeds the screening criteria and was retained as a COPC.

(1) Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentration detected and as one sample when determining the frequency of detection and average results.
(2) Average of all analytical results is calculated using half of the detection limit for non-detects.
(3) EPA Regional Screening Level (ORNL, December 2009). Non-carcinogenic values were divided by ten.
(4) Rhode Island Screening Level (February 2004).
(5) Average surface soil concentration from Basewide Background Study Report, Naval Station Newport, Newport RI. Tetra Tech NUS For NAVFAC MID ATLANTIC CTO 402. Final document, July 2008.
(6) Acenaphthene used as a surrogate concentration for Acenaphthylene.
(7) Pyrene used as a surrogate concentration for Benzo(g,h,i)perylene and Phenanthrene.
(8) Chromium VI value used.
(9) Chlordane is used as a surrogate for alpha- and gamma-Chlordane.
(10) PCBs is used for Aroclor-1260.
(11) Endosulfan is used as a surrogate for Endosulfan I, Endosulfan II, and Endosulfan sulfate.
(12) Endrin is used as a surrogate for Endrin aldehyde and Endrin ketone.

ASL = Above Screening Level
BSL = Below Screenig Level
C = Carcinogen
EPA = Environmental Protection Agency
N = Noncarcinogen
NA = Not Available
ND = Non-detect
NSL = No Screening Level
NUT = Essential Nutrient
RIDEM = Rhode Island Department of Environmental Management

TABLE 6-3
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
SUBSURFACE SOIL
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD[1]	Minimum Detect	Maximum Detect	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results[2]	EPA Residential Soil Criteria[3]	EPA Residential COPC?	Rationale for EPA Residential COPC Selection	RIDEM Residential Soil Criteria[4]	RIDEM Residential COPC?	Rationale for RIDEM Residential COPC Selection	Background Concentration[5]	Exceed Background Concentration?
Volatiles (UG/KG)														
2-BUTANONE	2/38	20	34	CRP-SB04-0406	27	139	2800000 N	NO	BSL	NA	NO	NSL	NA	NA
ACETONE	6/38	5.3	140	CRP-SB04-0406	50.7	141	6100000 N	NO	BSL	7800000	NO	BSL	NA	NA
BENZENE	1/38	1.2	1.2	CRP-SB04-0406	1.2	13.8	1100 C	NO	BSL	2500	NO	BSL	NA	NA
BROMODICHLOROMETHANE	2/38	0.39	0.43	CRP-SB05-0810	0.41	13.8	270 C	NO	BSL	10000	NO	BSL	NA	NA
BTEX	1/38	15.6	15.6	CRP-SB04-0406	15.6	14.2	NA	NO	NSL	NA	NO	NSL	NA	NA
CARBON DISULFIDE	1/38	1.4	1.4	CRP-SB04-0406	1.4	13.8	82000 N	NO	BSL	NA	NO	NSL	NA	NA
CHLOROFORM	3/38	0.63	1	CRP-SB02-0810	0.85	13.7	290 C	NO	BSL	1200	NO	BSL	NA	NA
CIS-1,2-DICHLOROETHENE	1/38	7.3	7.3	CRP-SB04-0406	7.3	14.0	78000 N	NO	BSL	630000	NO	BSL	NA	NA
ETHYLBENZENE	1/38	1.9	1.9	CRP-SB04-0406	1.9	13.8	5400 C	NO	BSL	71000	NO	BSL	NA	NA
ISOPROPYLBENZENE	1/38	1.5	1.5	CRP-SB04-0406	1.5	13.8	210000 N	NO	BSL	27000	NO	BSL	NA	NA
METHYL CYCLOHEXANE	1/38	0.44	0.44	CRP-SB04-0406	0.44	13.8	NA	NO	NSL	NA	NO	NSL	NA	NA
METHYLENE CHLORIDE	4/38	3.7	8.1	CRP-SB05-3032	6.2	27.9	11000 C	NO	BSL	45000	NO	BSL	NA	NA
TETRACHLOROETHENE	4/38	2.5	2100	CRP-SB08-1214	791	89.7	**550 C**	**YES**	ASL	12000	NO	BSL	NA	NA
TOLUENE	1/38	1.5	1.5	CRP-SB04-0406	1.5	13.8	500000 N	NO	BSL	190000	NO	BSL	NA	NA
TOTAL 1,2-DICHLOROETHENE	1/38	7.3	7.3	CRP-SB04-0406	7.3	13.9	70000 N	NO	BSL	NA	NO	NSL	NA	NA
TOTAL CHLORINATED ETHENES	8/38	1.4	2100	CRP-SB08-1214	467	104	NA	NO	NSL	NA	NO	NSL	NA	NA
TOTAL CHLORINATED VOCS	13/38	0.91	2100	CRP-SB08-1214	289	104	NA	NO	NSL	NA	NO	NSL	NA	NA
TOTAL XYLENES	1/38	11	11	CRP-SB04-0406	11	14.1	63000[6] N	NO	NSL	NA	NO	NSL	NA	NA
TRICHLOROETHENE	3/38	1.4	990	CRP-SB06-2224	188	26.9	2800 C	NO	BSL	13000	NO	BSL	NA	NA
VINYL CHLORIDE	1/38	2.2	2.2	CRP-SB04-0406	2.2	27.6	60 C	NO	BSL	20	NO	BSL	NA	NA
Semivolatiles (UG/KG)														
ACENAPHTHYLENE	1/38	1200	1200	CRP-TP06-0405	1200	213	340000[7] N	NO	BSL	23000	NO	BSL	NA	NA
ANTHRACENE	2/38	79	930	CRP-TP06-0405	505	203	1700000 N	NO	BSL	35000	NO	BSL	NA	NA
BENZO(A)ANTHRACENE	4/38	56	10000	CRP-TP06-0405	2611	441	**150 C**	**YES**	ASL	**900**	**YES**	ASL	NA	NA
BENZO(A)PYRENE	4/38	27	9400	CRP-TP06-0405	2444	291	**15 C**	**YES**	ASL	**400**	**YES**	ASL	NA	NA
BENZO(B)FLUORANTHENE	4/38	53	10000	CRP-TP06-0405	2598	440	**150 C**	**YES**	ASL	**900**	**YES**	ASL	NA	NA
BENZO(G,H,I)PERYLENE	2/38	210	5200	CRP-TP06-0405	2705	319	170000[8] N	NO	NSL	**800**	**YES**	ASL	NA	NA
BENZO(K)FLUORANTHENE	2/38	47	4300	CRP-TP06-0405	2174	291	**1500 C**	**YES**	ASL	**900**	**YES**	ASL	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	8/38	44	500	CRP-SB10-0810	187	207	35000 C	NO	BSL	46000	NO	BSL	NA	NA
BUTYL BENZYL PHTHALATE	1/38	47	51	CRP-SB09-3840	49	204	260000 C	NO	BSL	NA	NO	NSL	NA	NA
CAPROLACTAM	12/38	78	200	CRP-SB02-0810-D	113	185	3100000 N	NO	BSL	NA	NO	NSL	NA	NA
CHRYSENE	4/38	54	11000	CRP-TP06-0405	2854	334	15000 C	NO	BSL	**400**	**YES**	ASL	NA	NA
DIBENZO(A,H)ANTHRACENE	1/38	1900	1900	CRP-TP06-0405	1900	86.3	**150 C**	**YES**	ASL	**400**	**YES**	ASL	NA	NA
FLUORANTHENE	4/38	80	15000	CRP-TP06-0405	3938	581	230000 N	NO	BSL	20000	NO	BSL	NA	NA
FLUORENE	1/38	290	290	CRP-TP06-0405	290	189	230000 N	NO	BSL	28000	NO	BSL	NA	NA
HIGH MOLECULAR WEIGHT PAHS	6/38	27	95200	CRP-TP06-0405	16487	2721	NA	NO	NSL	NA	NO	NSL	NA	NA
INDENO(1,2,3-CD)PYRENE	1/38	5400	5400	CRP-TP06-0405	5400	324	**150 C**	**YES**	ASL	**900**	**YES**	ASL	NA	NA
LOW MOLECULAR WEIGHT PAHS	4/38	48	6470	CRP-TP06-0405	1807	356	NA	NO	NSL	NA	NO	NSL	NA	NA
NAPHTHALENE	1/38	250	250	CRP-TP06-0405	250	188	3600 C	NO	BSL	54000	NO	BSL	NA	NA
PHENANTHRENE	4/38	48	3800	CRP-TP06-0405	1120	284	170000[8] N	NO	BSL	40000	NO	BSL	NA	NA
PYRENE	5/38	66	23000	CRP-TP06-0405	4818	795	170000 N	NO	BSL	**13000**	**YES**	ASL	NA	NA
TOTAL PAHS	6/38	27	101670	CRP-TP06-0405	17690	2930	NA	NO	NSL	NA	NO	NSL	NA	NA

TABLE 6-3
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
SUBSURFACE SOIL
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD[1]	Minimum Detect	Maximum Detect	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results[2]	EPA Residential Soil Criteria[3]		EPA Residential COPC?	Rationale for EPA Residential COPC Selection	RIDEM Residential Soil Criteria[4]	RIDEM Residential COPC?	Rationale for RIDEM Residential COPC Selection	Background Concentration[5]	Exceed Background Concentration?
Pesticides/PCBs (UG/KG)															
4,4'-DDE	4/38	0.29	0.33	CRP-TP04-0506	0.31	0.37	1400	C	NO	BSL	NA	NO	NSL	NA	NA
4,4'-DDT	9/38	0.24	0.99	CRP-SB07-0406	0.53	0.41	1700	C	NO	BSL	NA	NO	NSL	NA	NA
ALPHA-BHC	2/38	0.2	1.3	CRP-SB04-0810	0.82	0.27	77	C	NO	BSL	NA	NO	NSL	NA	NA
AROCLOR-1260	5/38	6.8	49	CRP-SB11-0810	24.7	11.3	220	C	NO	BSL	10000[9]	NO	BSL	NA	NA
BETA-BHC	3/38	0.16	0.34	CRP-SB02-2426	0.26	0.2	270	C	NO	BSL	NA	NO	NSL	NA	NA
DELTA-BHC	3/38	0.23	0.57	CRP-SB04-0810	0.36	0.2	77[10]	C	NO	BSL	NA	NO	NSL	NA	NA
DIELDRIN	1/38	0.35	0.35	CRP-SB11-0810	0.35	0.37	30	C	NO	BSL	40	NO	BSL	NA	NA
ENDOSULFAN II	13/38	0.28	5.6	CRP-TP06-0405	1.7	0.82	37000[11]	N	NO	BSL	NA	NO	NSL	NA	NA
ENDOSULFAN SULFATE	2/38	0.61	0.78	CRP-SB07-0406	0.7	0.41	37000[11]	N	NO	BSL	NA	NO	NSL	NA	NA
ENDRIN	2/38	0.51	5.3	CRP-TP06-0405	2.9	0.51	1800	N	NO	BSL	NA	NO	NSL	NA	NA
ENDRIN ALDEHYDE	1/38	6.4	6.4	CRP-TP06-0405	6.4	0.56	1800[12]	N	NO	BSL	NA	NO	NSL	NA	NA
GAMMA-BHC (LINDANE)	3/38	0.19	0.65	CRP-SB04-0810	0.46	0.21	520	C	NO	BSL	NA	NO	NSL	NA	NA
GAMMA-CHLORDANE	5/38	0.19	1.8	CRP-SB06-0810	0.56	0.29	1600[13]	C	NO	BSL	500[13]	NO	BSL	NA	NA
HEPTACHLOR	1/38	0.44	0.44	CRP-SB04-0810	0.44	0.19	110	C	NO	BSL	NA	NO	NSL	NA	NA
HEPTACHLOR EPOXIDE	2/38	0.15	3	CRP-SB06-0810	1.6	0.26	53	C	NO	BSL	NA	NO	NSL	NA	NA
TOTAL AROCLOR	5/38	6.8	49	CRP-SB11-0810	24.7	11.3	NA		NO	BSL	10000[9]	NO	NSL	NA	NA
TOTAL DDD/DDE/DDT	9/38	0.24	1.3	CRP-SB07-0406	0.67	0.55	NA		NO	BSL	NA	NO	NSL	NA	NA
Metals (MG/KG)															
ALUMINUM	38/38	1860	14800	CRP-SB05-3032	6365	6365	**7700**	**N**	**YES**	ASL	NA	NO	NSL	**8830**	YES
ARSENIC	38/38	4	28.8	CRP-SB03-2830	10.2	10.2	**0.39**	**C**	**YES**	ASL	**7**	**YES**	ASL	**4.04**	YES
BARIUM	38/38	5.9	40.1	CRP-SB04-0406	21.2	21.2	1500	N	NO	BSL	5500	NO	BSL	**24.3**	YES
BERYLLIUM	38/38	0.189	0.43	CRP-TP01B-0506	0.3	0.3	16	N	NO	BSL	**0.4**	**YES**	BSL	**0.384**	YES
CADMIUM	23/38	0.067	0.28	CRP-SB01-2628	0.13	0.13	7	N	NO	BSL	39	NO	BSL	ND	NA
CALCIUM	38/38	237	1850	CRP-SB05-3032	765	765	NA		NO	NUT	NA	NO	NUT	**605**	YES
CHROMIUM	76/76	3.4	33.4	CRP-SB09-3840-D	13.9	13.9	**0.29[14]**	**C**	**YES**	ASL	390[14]	NO	BSL	**11.4**	YES
COPPER	38/38	9.1	45.2	CRP-SB03-2830	21.7	21.7	310	N	NO	BSL	3100	NO	BSL	**14.3**	YES
IRON	38/38	16700	53900	CRP-SB09-3840-D	31704	31704	**5500**	**N**	**YES**	ASL	NA	NO	NSL	**16200**	YES
LEAD	38/38	5.2	26	CRP-TP06-0405	10.3	10.3	400		NO	BSL	150	NO	BSL	**7.66**	YES
MAGNESIUM	38/38	940	5790	CRP-SB05-3032	2510	2510	NA		NO	NUT	NA	NO	NSL	**2990**	YES
MANGANESE	38/38	73.7	1520	CRP-SB09-3840-D	538	538	**180**	**N**	**YES**	ASL	**390**	**YES**	NSL	**316**	YES
MERCURY	3/38	0.02	0.028	CRP-SB01-0608	0.023	0.018	2.3	N	NO	BSL	23	NO	BSL	ND	NA
NICKEL	38/38	10.1	65.5	CRP-SB03-2830	30.2	30.2	150	N	NO	BSL	1000	NO	BSL	**12.9**	YES
POTASSIUM	46/76	0.18	1350	CRP-SB09-3840	371	224	NA		NO	NUT	NA	NO	NUT	**1300**	YES
SODIUM	4/38	56.4	99.3	CRP-SB09-3840-D	68.5	131	NA		NO	NUT	NA	NO	NUT	**30.5**	YES
VANADIUM	38/38	9.6	19.9	CRP-SB05-3032	15.2	15.2	39	N	NO	BSL	550	NO	NSL	**13.2**	YES
ZINC	38/38	31.7	282	CRP-SB09-3840-D	78	78	2300	N	NO	BSL	6000	NO	BSL	**29.6**	YES
Petroleum Hydrocarbons (MG/KG)															
DIESEL RANGE ORGANICS	38/38	5.5	430	CRP-TP06-0405	30.8	30.8	NA		NO	NSL	NA	NO	NSL	NA	NA
GASOLINE RANGE ORGANICS	5/38	3.8	51	CRP-SB09-0608	15.1	3.1	NA		NO	NSL	NA	NO	NSL	NA	NA

TABLE 6-3
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
SUBSURFACE SOIL
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD(1)	Minimum Detect	Maximum Detect	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results(2)	EPA Residential Soil Criteria(3)	EPA Residential COPC?	Rationale for EPA Residential COPC Selection	RIDEM Residential Soil Criteria(4)	RIDEM Residential COPC?	Rationale for RIDEM Residential COPC Selection	Background Concentration(5)	Exceed Background Concentration?

(1) Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentration detected and as one sample when determining the frequency of detection and average results.
(2) Average of all analytical results is calculated using half of the detection limit for non-detects.
(3) EPA Regional Screening Level (ORNL, December 2009). Non-carcinogenic values were divided by ten.
(4) RIDEM Screening Level (February 2004).
(5) Average subsurface soil concentration from Basewide Background Study Report, Naval Station Newport, Newport RI. Tetra Tech NUS For NAVFAC MID ATLANTIC CTO 402. Final document, July 2008.
(6) XyLene mixture used as a surrogate concentration for Total Xylenes.
(7) Acenaphthene used as a surrogate concentration for Acenaphthylene.
(8) Pyrene used as a surrogate concentration for Benzo(g,h,i)perylene and Phenanthrene.
(9) PCBs used as a surrogate concentration for Aroclor 1260.
(10) Alpha BHC used as a surrogate concentration for Delta BHC.
(11) Endosulfan used as a surrogate concentration for Endosulfan I and Endosulfan Sulfate.
(12) Endrin used as a surrogate concentration for Endrin Aldehyde.
(13) Chlordane used as a surrogate concentration for Gamma Chlordane.
(14) Chromium IV value used.

ASL = Above Screening Level
BSL = Below Screenig Level
C = Carcinogen
EPA = Environmental Protection Agency
N = Noncarcinogen
NA = Not available
ND = Non-detect
NSL = No Screening Level
NUT = Essential Nutrient
RIDEM = Rhode Island Deparment of Environmental Management
FOD = Frequency of Detection

Shaded criterion indicates that the maximum detected concentration exceeds the screening criteria and was retained as a COPC.

TABLE 6-4
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
SEDIMENT
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD[1]	Minimum Detect	Maximum Detect	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results[2]	EPA Residential Soil Criteria[3]	EPA Residential COPC?	Rationale for EPA Residential COPC Selection	RIDEM Residential Soil Criteria[4]	RIDEM Residential COPC?	Rationale for RIDEM Residential COPC Selection
Semivolatiles (UG/KG)												
ACENAPHTHENE	3/15	63	110	CRP-SD01-0006	79.7	114	3400000 N	NO	BSL	430000	NO	BSL
ANTHRACENE	4/15	45	160	CRP-SD01-0006	97.5	116	17000000 N	NO	BSL	350000	NO	BSL
BENZO(A)ANTHRACENE	7/15	60	820	CRP-SD01-0006	328	219	1500 C	NO	BSL	9000	NO	BSL
BENZO(A)PYRENE	4/15	460	1100	CRP-SD01-0006	700	277	**150 C**	**YES**	ASL	4000	NO	BSL
BENZO(B)FLUORANTHENE	5/15	100	1200	CRP-SD01-0006	598	281	1500 C	NO	BSL	9000	NO	BSL
BENZO(G,H,I)PERYLENE	7/15	150	830	CRP-SD01-0006	396	250	1700000[5] N	NO	NSL	8000	NO	BSL
BENZO(K)FLUORANTHENE	4/15	140	440	CRP-SD01-0006	260	159	15000 C	NO	BSL	9000	NO	BSL
CHRYSENE	7/15	62	930	CRP-SD01-0006	392	249	150000 C	NO	BSL	4000	NO	BSL
DIBENZO(A,H)ANTHRACENE	1/15	280	280	CRP-SD01-0612	280	133	**150 C**	**YES**	ASL	4000	NO	BSL
FLUORANTHENE	7/15	85	1100	CRP-SD01-0006	452	277	2300000 N	NO	BSL	200000	NO	BSL
FLUORENE	3/15	39	81	CRP-SD01-0006	53	109	2300000 N	NO	BSL	280000	NO	BSL
HIGH MOLECULAR WEIGHT PAHS	9/15	57	8430	CRP-SD01-0006	2654	1641	NA	NO	NSL	NA	NO	NSL
INDENO(1,2,3-CD)PYRENE	4/15	420	910	CRP-SD01-0006	625	257	1500 C	NO	BSL	9000	NO	BSL
LOW MOLECULAR WEIGHT PAHS	9/15	30	1101	CRP-SD01-0006	326	245	NA	NO	NSL	NA	NO	NSL
PHENANTHRENE	9/15	30	750	CRP-SD01-0006	239	192	1700000[5] N	NO	BSL	400000	NO	BSL
PYRENE	8/15	57	1100	CRP-SD01-0006	412	277	17000000 N	NO	BSL	130000	NO	BSL
TOTAL PAHS	10/15	35	9531	CRP-SD01-0006	2682	1829	NA	NO	NSL	NA	NO	NSL
Metals (MG/KG)												
ALUMINUM	35/35	2740	5070	CRP-SD01-0612	3568	3567	77000 N	NO	BSL	NA	NO	NSL
ANTIMONY	14/35	0.29	3.3	CRP-SD01-0612	0.79	0.55	31 N	NO	BSL	NA	NO	NSL
ARSENIC	35/35	1.7	19.4	CRP-SD02-0612	3.5	3.5	**3.9 C**	**YES**	ASL	70	NO	BSL
BARIUM	35/35	5.4	19.1	CRP-SD02-0612	7.7	7.7	15000 N	NO	BSL	55000	NO	BSL
BERYLLIUM	35/35	0.12	0.33	CRP-SD01-0612	0.18	0.18	160 N	NO	BSL	4	NO	BSL
CADMIUM	33/35	0.068	0.22	CRP-SD08-0612	0.15	0.16	70 N	NO	BSL	390	NO	BSL
CALCIUM	35/35	604	36100	CRP-SD17-0006	4366	4366	NA	NO	NUT	NA	NO	NUT
CHROMIUM[6]	35/35	7.9	17.1	CRP-SD01-0612	10.2	10.2	**2.9 C**	**YES**	ASL	3900	NO	BSL
COBALT	35/35	1.9	18.8	CRP-SD02-0612	3.8	3.8	23 N	NO	BSL	NA	NO	NSL
COPPER	35/35	3.9	207	CRP-SD01-0006	15.7	15.7	3100 N	NO	BSL	31000	NO	BSL
IRON	35/35	7540	44200	CRP-SD02-0612	12639	12638	55000 N	NO	BSL	NA	NO	NSL
LEAD	35/35	7.2	424	CRP-SD02-0006	81.3	81.3	**400**	**YES**	ASL	1500	NO	BSL
MAGNESIUM	35/35	1460	3260	CRP-SD02-0612	1897	1897	NA	NO	NUT	NA	NO	NUT
MANGANESE	35/35	79.5	2190	CRP-SD02-0612	187	187	**1800 N**	**YES**	ASL	3900	NO	BSL
NICKEL	35/35	5.8	47.4	CRP-SD01-0612	11.0	11.0	1500 N	NO	BSL	10000	NO	BSL
POTASSIUM	35/35	354	922	CRP-SD17-0006	537	537	NA	NO	NUT	NA	NO	NUT
SELENIUM	2/35	0.33	0.4	CRP-SD10-0006	0.3	0.18	390 N	NO	BSL	3900	NO	BSL
SILVER	3/35	0.058	0.11	CRP-SD11-0006	0.085	0.087	390 N	NO	BSL	2000	NO	BSL
SODIUM	35/35	1770	4910	CRP-SD17-0006	2675	2675	NA	NO	NUT	NA	NO	NUT
VANADIUM	35/35	8.7	18	CRP-SD02-0006	12.0	12	390 N	NO	BSL	5500	NO	BSL
ZINC	35/35	26.5	99.7	CRP-SD02-0006	41.5	41.5	23000 N	NO	BSL	60000	NO	BSL

(1) Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentration detected and as one sample when determining the frequency of detection and average results.
(2) Average of all analytical results is calculated using half of the detection limit for non-detects.
(3) EPA Regional Screening Level (ORNL, December 2009). Soil values were multiplied by 10 in anticipation of reduced exposure to sediment. Non-carcinogenic values were divided by ten after accounting for reduced exposure.
(4) RIDEM Screening Level (February 2004). Soil values were multiplied by 10 in anticipation of reduced exposure to sediment.

(5) Pyrene used as a surrogate concentration for Phenanthrene.
(6) Chromium IV used.
Shaded criterion indicates that the maximum detected concentration exceeds the screening criteria and was retained as a COPC.

ASL = Above Screening Level
BSL = Below Screenig Level
C = Carcinogen
EPA = Environmental Protection Agency
N = Noncarcinogen
NSL = No Screening Level
NUT = Essential Nutrient
RIDEM = Rhode Island Department of Environmental Management
FOD = Frequency of Detection

TABLE 6-5
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
SURFACE SOIL MIGRATION TO GROUNDWATER
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD[1]	Minimum Detect	Maximum Detect	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results[2]	EPA Soil to Groundwater Migration Criteria[3]	EPA Soil to Groundwater Migration COPC?	Rationale for EPA Soil to Groundwater Migration COPC Selection	RIDEM Leachability Criteria	RIDEM Soil to Groundwater Migration COPC?	Rationale for RIDEM Soil to Groundwater Migration COPC Selection	Background Concentration[5]	Exceed Background Concentration?
Volatiles (UG/KG)														
ACETONE	4/16	7.2	76	CRP-SB07-0001	22	26	4500	NO	BSL	NA	NO	NSL	NA	NA
METHYLENE CHLORIDE	1/16	0.74	0.74	CRP-SB03-0001	0.74	5.4	1.2	NO	BSL	NA	NO	NSL	NA	NA
TETRACHLOROETHENE	1/16	1.1	1.1	CRP-SS02-0612	1.1	2.8	**0.049**	**YES**	ASL	100	NO	BSL	NA	NA
TOTAL CHLORINATED ETHENES	1/16	1.1	1.1	CRP-SS02-0612	1.1	3.4	NA	NO	NSL	NA	NO	NSL	NA	NA
TOTAL CHLORINATED VOCS	2/16	0.74	1.1	CRP-SS02-0612	0.92	3.2	NA	NO	NSL	NA	NO	NSL	NA	NA
Semivolatiles (UG/KG)														
1,1-BIPHENYL	1/25	300	300	CRP-SB09-0001	300	487	19000	NO	BSL	NA	NO	NSL	NA	NA
2-METHYLNAPHTHALENE	2/25	580	1400	CRP-SB09-0001	990	524	**750**	**YES**	ASL	NA	NO	NSL	NA	NA
ACENAPHTHENE	8/25	260	15000	CRP-SB09-0001	2478	1239	22000	NO	BSL	NA	NO	NSL	NA	NA
ACENAPHTHYLENE	1/25	1200	1200	CRP-SB05-0001	1200	505	22000[6]	NO	BSL	NA	NO	NSL	NA	NA
ANTHRACENE	11/25	150	16000	CRP-SB09-0001	2449	1406	360000	NO	BSL	NA	NO	NSL	NA	NA
BENZO(A)ANTHRACENE	16/25	70	91000	CRP-SB09-0001	10129	6721	**10**	**YES**	ASL	NA	NO	NSL	NA	NA
BENZO(A)PYRENE	15/25	74	120000	CRP-SB09-0001	13374	8079	**3.5**	**YES**	ASL	240000	NO	BSL	NA	NA
BENZO(B)FLUORANTHENE	16/25	44	130000	CRP-SB09-0001	14358	9452	**35**	**YES**	ASL	NA	NO	NSL	NA	NA
BENZO(G,H,I)PERYLENE	14/25	850	78000	CRP-SB09-0001	9616	5666	120000[7]	NO	BSL	NA	NO	NSL	NA	NA
BENZO(K)FLUORANTHENE	12/25	46	47000	CRP-SB09-0001	7061	3740	**350**	**YES**	ASL	NA	NO	NSL	NA	NA
CARBAZOLE	7/25	280	11000	CRP-SB09-0001	2233	1525	NA	NO	NSL	NA	NO	NSL	NA	NA
CHRYSENE	16/25	80	100000	CRP-SB09-0001	11372	7326	**1100**	**YES**	ASL	NA	NO	NSL	NA	NA
DIBENZO(A,H)ANTHRACENE	6/25	2100	22000	CRP-SB09-0001	6217	1610	**11**	**YES**	ASL	NA	NO	NSL	NA	NA
DIBENZOFURAN	7/25	180	3500	CRP-SB09-0001	757	583	**680**	**YES**	ASL	NA	NO	NSL	NA	NA
FLUORANTHENE	16/25	140	110000	CRP-SB09-0001	13497	8876	160000	NO	BSL	NA	NO	NSL	NA	NA
FLUORENE	5/25	230	6100	CRP-SB09-0001	1668	747	27000	NO	BSL	NA	NO	NSL	NA	NA
HIGH MOLECULAR WEIGHT PAHS	12/16	72	899000	CRP-SB09-0001	94126	70739	NA	NO	NSL	NA	NO	NSL	NA	NA
INDENO(1,2,3-CD)PYRENE	11/25	1200	81000	CRP-SB09-0001	12709	5921	**120**	**YES**	ASL	NA	NO	NSL	NA	NA
LOW MOLECULAR WEIGHT PAHS	10/16	31	105200	CRP-SB09-0001	11859	7624	NA	NO	NSL	NA	NO	NSL	NA	NA
NAPHTHALENE	5/25	240	3700	CRP-SB09-0001	1012	589	**0.47**	**YES**	ASL	800	NO	BSL	NA	NA
N-NITROSODIPHENYLAMINE	5/25	420	920	CRP-SO-ARC1A	570	610	**75**	**YES**	ASL	NA	NO	NSL	NA	NA
PHENANTHRENE	19/25	31	63000	CRP-SB09-0001	5579	4376	120000[7]	NO	BSL	NA	NO	NSL	NA	NA
PYRENE	21/25	66	120000	CRP-SB09-0001	11173	9506	120000	NO	BSL	NA	NO	NSL	NA	NA
TOTAL PAHS	12/16	103	1004200	CRP-SB09-0001	104009	78165	NA	NO	BSL	NA	NO	NSL	NA	NA
Propellants (MG/KG)														
2,4-DINITROTOLUENE	4/9	0.098	0.16	CRP-SO-ARC1A	0.13	0.14	0.29	NO	BSL	NA	NO	NSL	NA	NA
NITROGLYCERIN	9/9	1.2	16	CRP-SO-ARC1A	7.3	7.3	**1.6**	**YES**	ASL	NA	NO	NSL	NA	NA
Metals (MG/KG)														
ALUMINUM	16/16	5160	14900	CRP-SS02-0612	10775	10775	55000	NO	BSL	NA	NO	NSL	**11800**	YES
ANTIMONY	7/16	0.43	8.5	CRP-SB10-0001	2.2	1.4	**0.66**	**YES**	ASL	NA	NO	NSL	NA	NA
ARSENIC	16/16	4.6	85.5	CRP-SB02-0001	18.8	18.8	**0.0013**	**YES**	ASL	NA	NO	NSL	**4.03**	YES
BARIUM	16/16	12.6	51.9	CRP-SB02-0001	25.1	25.1	300	NO	BSL	NA	NO	NSL	**22.4**	YES
BERYLLIUM	16/16	0.22	0.39	CRP-SB10-0001	0.32	0.32	58	NO	BSL	NA	NO	NSL	0.419	NO
CADMIUM	16/16	0.104	1.4	CRP-SB10-0001	0.53	0.531	1.4	NO	BSL	NA	NO	NSL	ND	NA

TABLE 6-5
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
SURFACE SOIL MIGRATION TO GROUNDWATER
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD[1]	Minimum Detect	Maximum Detect	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results[2]	EPA Soil to Groundwater Migration Criteria[3]	EPA Soil to Groundwater Migration COPC?	Rationale for EPA Soil to Groundwater Migration COPC Selection	RIDEM Leachability Criteria	RIDEM Soil to Groundwater Migration COPC?	Rationale for RIDEM Soil to Groundwater Migration COPC Selection	Background Concentration[5]	Exceed Background Concentration?
CALCIUM	16/16	413	14200	CRP-SB09-0001	1966	1966	NA	NO	NUT	NA	NO	NUT	**323**	YES
CHROMIUM	32/32	4.4	45.9	CRP-SB03-0001	15.8	15.8	**0.00083[9]**	**YES**	ASL	NA	NO	NSL	**9.87**	YES
COPPER	16/16	20.1	579	CRP-SB10-0001	83.1	83.1	**51**	**YES**	ASL	NA	NO	NSL	**6.84**	YES
IRON	16/16	17600	33800	CRP-SB08-0001	26641	26641	**640**	**YES**	ASL	NA	NO	NSL	**13800**	YES
LEAD	16/16	13.3	999	CRP-SB02-0001	179	179	**14[10]**	**YES**	ASL	NA	NO	NSL	**10.8**	YES
MAGNESIUM	16/16	1530	4590	CRP-SB09-0001	3202	3202	NA	NO	NUT	NA	NO	NUT	**1520**	YES
MANGANESE	16/16	187	660	CRP-SB08-0001	434	434	**57**	**YES**	ASL	NA	NO	NSL	**141**	YES
MERCURY	11/16	0.017	0.17	CRP-SB10-0001	0.06	0.049	**0.03**	**YES**	ASL	NA	NO	NSL	**0.0271**	YES
NICKEL	16/16	15.3	35.7	CRP-SB10-0001	26.5	26.5	48	NO	BSL	NA	NO	NSL	**7.7**	YES
POTASSIUM	27/32	0.23	497	CRP-SB09-0001	225	189	NA	NO	NUT	NA	NO	NUT	**494**	YES
SILVER	2/16	0.1	0.21	CRP-SB03-0001	0.16	0.096	1.6	NO	BSL	NA	NO	NSL	NA	NA
SODIUM	1/16	67.5	67.5	CRP-SS02-0006	67.5	139	NA	NO	NUT	NA	NO	NUT	**32.3**	YES
VANADIUM	16/16	11.3	33	CRP-SB10-0001	17.9	17.9	**2.6**	**YES**	ASL	NA	NO	NSL	**17**	YES
ZINC	16/16	57.5	217	CRP-SB09-0001	115	115	680	NO	BSL	NA	NO	NSL	**22**	YES
Pesticides/PCBs (UG/KG)														
4,4'-DDD	3/16	1.2	3.6	CRP-SB09-0001	2.2	70.5	66	NO	BSL	NA	NO	NSL	NA	NO
4,4'-DDE	9/16	0.6	38	CRP-SS01-0006	13.5	8.2	47	NO	BSL	NA	NO	NSL	NA	NO
4,4'-DDT	7/16	0.81	62	CRP-SB09-0001	15.7	152	67	NO	BSL	NA	NO	NSL	NA	NO
ALDRIN	1/16	0.39	0.39	CRP-TP05-0102	0.39	0.21	0.65	NO	BSL	NA	NO	NSL	NA	NO
ALPHA-BHC	2/16	0.32	0.93	CRP-SB06-0001	0.63	0.26	**0.062**	**YES**	ASL	NA	NO	NSL	NA	NO
ALPHA-CHLORDANE	2/16	2.3	3.8	CRP-SB11-0001	3.1	0.55	13[11]	NO	BSL	1400[11]	NO	BSL	NA	NO
AROCLOR-1260	14/16	7.2	45000	CRP-SB02-0001	5657	4951	**24**	**YES**	ASL	**10000[12]**	**YES**	ASL	NA	NO
DIELDRIN	9/16	0.5	190	CRP-SS01-0006	30.2	51.8	**0.17**	**YES**	ASL	NA	NO	NSL	NA	NO
ENDOSULFAN I	1/16	1.2	1.2	CRP-SB06-0001	1.2	0.26	3000[13]	NO	BSL	NA	NO	NSL	NA	NO
ENDOSULFAN II	7/16	0.31	480	CRP-SB02-0001	102	45	3000[13]	NO	BSL	NA	NO	NSL	NA	NO
ENDOSULFAN SULFATE	3/16	0.6	5.9	CRP-SB05-0001	3.1	59.8	3000[13]	NO	BSL	NA	NO	NSL	NA	NO
ENDRIN	7/16	0.33	200	CRP-SS01-0006	61.5	27.3	440	NO	BSL	NA	NO	NSL	NA	NO
ENDRIN ALDEHYDE	2/16	0.63	1.7	CRP-SB04-0002	1.2	1	440[14]	NO	BSL	NA	NO	NSL	NA	NO
ENDRIN KETONE	1/16	0.87	0.87	CRP-SB08-0001	0.87	1.1	440[14]	NO	BSL	NA	NO	NSL	NA	NO
GAMMA-BHC (LINDANE)	6/16	0.79	12	CRP-SB04-0002	3.6	1.5	**0.36**	**YES**	ASL	NA	NO	NSL	NA	NO
GAMMA-CHLORDANE	5/16	1.4	13	CRP-SS01-0006	5.5	3.1	13[11]	NO	BSL	1400[11]	NO	BSL	NA	NO
HEPTACHLOR EPOXIDE	2/16	1.1	1.4	CRP-SB11-0001	1.3	0.62	**0.15**	**YES**	ASL	NA	NO	NSL	NA	NO
TOTAL AROCLOR	14/16	7.2	45000	CRP-SB02-0001	5657	4951	NA	NO	BSL	NA	NO	NSL	NA	NO
TOTAL DDD/DDE/DDT	10/16	0.6	95.6	CRP-SB09-0001	23.8	54.3	NA	NO	BSL	NA	NO	NSL	NA	NO

TABLE 6-5
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
SURFACE SOIL MIGRATION TO GROUNDWATER
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD(1)	Minimum Detect	Maximum Detect	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results(2)	EPA Soil to Groundwater Migration Criteria(3)	EPA Soil to Groundwater Migration COPC?	Rationale for EPA Soil to Groundwater Migration COPC Selection	RIDEM Leachability Criteria	RIDEM Soil to Groundwater Migration COPC?	Rationale for RIDEM Soil to Groundwater Migration COPC Selection	Background Concentration(5)	Exceed Background Concentration?
Petroleum Hydrocarbons (MG/KG)														
DIESEL RANGE ORGANICS	16/16	32	5600	CRP-SB09-0001	530	530	NA	NO	NSL	NA	NO	NSL	NA	NO

Shaded criterion indicates that the maximum detected concentration exceeds the screening criteria and was retained as a COPC.

(1) Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentration detected and as one sample when determining the frequency of detection and average resu
(2) Average of all analytical results is calculated using half of the detection limit for non-detects.
(3) EPA Regional Screening Level (ORNL, December 2009) Migration to Groundwater values.
(4) Rhode Island Screening Level (Leachability Critieria)
(5) Average subsurface soil concentration for MmA soil, from Basewide Background Study Report, Naval Station Newport, Newport RI. Final document, July 2008.
(6) Acenaphthene used as a surrogate concentration for Acenaphthylene.
(7) Pyrene used as a surrogate concentration for Benzo(g,h,i)perylene and Phenanthrene.
(8) Dinitrotoluene mixture used for 2,4-Dinitrotoluene.
(9) Chromium VI values used.
(10) MCL-based soil screening level.
(11) Chlordane used as a surrogate for alpha- and gamma-Chlordane.
(12) PCBs used for Aroclor-1260.
(13) Endosulfan used as a surrogate for Endosulfan I, Endosulfan II, and Endosulfan sulfate.
(14) Endrin used as a surrogate for Endrin aldehyde and Endrin ketone.

ASL = Above Screening Level
BSL = Below Screenig Level
C = Carcinogen
EPA = Environmental Protection Agency
N = Noncarcinogen
NA = Not Available
ND = Non-detect
NSL = No Screening Level
NUT = Essential Nutrient
RIDEM = Rhode Island Department of Environmental Management

TABLE 6-6
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
SUBSURFACE SOIL MIGRATION TO GROUNDWATER
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD[1]	Minimum Detect	Maximum Detect	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results[2]	EPA Soil to Grounwater Migration Criteria[3]	EPA Soil to Grounwater Migration COPC?	Rationale for EPA Soil to Grounwater Migration COPC Selection	RIDEM Soil to Groundwater Migration (Leachablity) Criteria[4]	RIDEM Soil to Groundwater Migration (Leachability) COPC?	Rationale for RIDEM Soil to Groundwater Migration COPC Selection	Background Concentration[5]	Exceed Background Concentration?
Volatiles (UG/KG)														
2-BUTANONE	2/38	20	34	CRP-SB04-0406	27	139	1500	NO	BSL	NA	NO	NSL	NA	NA
ACETONE	6/38	5.3	140	CRP-SB04-0406	50.7	141	4500	NO	BSL	NA	NO	NSL	NA	NA
BENZENE	1/38	1.2	1.2	CRP-SB04-0406	1.2	13.8	**0.21**	**YES**	ASL	200	NO	BSL	NA	NA
BROMODICHLOROMETHANE	2/38	0.39	0.43	CRP-SB05-0810	0.41	13.8	**0.032**	**YES**	ASL	NA	NO	NSL	NA	NA
BTEX	1/38	15.6	15.6	CRP-SB04-0406	15.6	14.2	NA	NO	NSL	NA	NO	NSL	NA	NA
CARBON DISULFIDE	1/38	1.4	1.4	CRP-SB04-0406	1.4	13.8	300	NO	BSL	NA	NO	NSL	NA	NA
CHLOROFORM	3/38	0.63	1	CRP-SB02-0810	0.85	13.7	**0.053**	**YES**	ASL	NA	NO	NSL	NA	NA
CIS-1,2-DICHLOROETHENE	1/38	7.3	7.3	CRP-SB04-0406	7.3	14.0	110	NO	BSL	1700	NO	BSL	NA	NA
ETHYLBENZENE	1/38	1.9	1.9	CRP-SB04-0406	1.9	13.8	**1.7**	**YES**	ASL	27000	NO	BSL	NA	NA
ISOPROPYLBENZENE	1/38	1.5	1.5	CRP-SB04-0406	1.5	13.8	**1.1**	**YES**	ASL	NA	NO	NSL	NA	NA
METHYL CYCLOHEXANE	1/38	0.44	0.44	CRP-SB04-0406	0.44	13.8	NA	NO	NSL	NA	NO	NSL	NA	NA
METHYLENE CHLORIDE	4/38	3.7	8.1	CRP-SB05-3032	6.2	27.9	**1.2**	**YES**	ASL	NA	NO	NSL	NA	NA
TETRACHLOROETHENE	4/38	2.5	2100	CRP-SB08-1214	791	89.7	**0.049**	**YES**	ASL	**100**	**YES**	ASL	NA	NA
TOLUENE	1/38	1.5	1.5	CRP-SB04-0406	1.5	13.8	1600	NO	BSL	32	NO	BSL	NA	NA
TOTAL 1,2-DICHLOROETHENE	1/38	7.3	7.3	CRP-SB04-0406	7.3	13.9	97	NO	BSL	NA	NO	NSL	NA	NA
TOTAL CHLORINATED ETHENES	8/38	1.4	2100	CRP-SB08-1214	467	104	NA	NO	NSL	NA	NO	NSL	NA	NA
TOTAL CHLORINATED VOCS	13/38	0.91	2100	CRP-SB08-1214	289	104	NA	NO	NSL	NA	NO	NSL	NA	NA
TOTAL XYLENES	1/38	11	11	CRP-SB04-0406	11	14.1	200[6]	NO	BSL	NA	NO	NSL	NA	NA
TRICHLOROETHENE	3/38	1.4	990	CRP-SB06-2224	188	26.9	**0.72**	**YES**	ASL	**200**	**YES**	ASL	NA	NA
VINYL CHLORIDE	1/38	2.2	2.2	CRP-SB04-0406	2.2	27.6	**0.0056**	**YES**	ASL	300	NO	BSL	NA	NA
Semivolatiles (UG/KG)														
ACENAPHTHYLENE	1/38	1200	1200	CRP-TP06-0405	1200	213	22000[7]	NO	BSL	NA	NO	NSL	NA	NA
ANTHRACENE	2/38	79	930	CRP-TP06-0405	505	203	360000	NO	BSL	NA	NO	NSL	NA	NA
BENZO(A)ANTHRACENE	4/38	56	10000	CRP-TP06-0405	2611	441	**100**	**YES**	ASL	NA	NO	NSL	NA	NA
BENZO(A)PYRENE	4/38	27	9400	CRP-TP06-0405	2444	291	**3.5**	**YES**	ASL	**240**	**YES**	ASL	NA	NA
BENZO(B)FLUORANTHENE	4/38	53	10000	CRP-TP06-0405	2598	440	**35**	**YES**	ASL	NA	NO	NSL	NA	NA
BENZO(G,H,I)PERYLENE	2/38	210	5200	CRP-TP06-0405	2705	319	120000[8]	NO	BSL	NA	NO	NSL	NA	NA
BENZO(K)FLUORANTHENE	2/38	47	4300	CRP-TP06-0405	2174	291	**350**	**YES**	ASL	NA	NO	NSL	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	8/38	44	500	CRP-SB10-0810	187	207	1100	NO	BSL	NA	NO	NSL	NA	NA
BUTYL BENZYL PHTHALATE	1/38	47	51	CRP-SB09-3840	49	204	510	NO	BSL	NA	NO	NSL	NA	NA
CAPROLACTAM	12/38	78	200	CRP-SB02-0810-D	113	185	4500	NO	BSL	NA	NO	NSL	NA	NA
CHRYSENE	4/38	54	11000	CRP-TP06-0405	2854	334	**1100**	**YES**	ASL	NA	NO	NSL	NA	NA
DIBENZO(A,H)ANTHRACENE	1/38	1900	1900	CRP-TP06-0405	1900	86.3	**11**	**YES**	ASL	NA	NO	NSL	NA	NA
FLUORANTHENE	4/38	80	15000	CRP-TP06-0405	3938	581	160000	NO	BSL	NA	NO	NSL	NA	NA
FLUORENE	1/38	290	290	CRP-TP06-0405	290	189	27000	NO	BSL	NA	NO	NSL	NA	NA
HIGH MOLECULAR WEIGHT PAHS	6/38	27	95200	CRP-TP06-0405	16487	2721	NA	NO	NSL	NA	NO	NSL	NA	NA
INDENO(1,2,3-CD)PYRENE	1/38	5400	5400	CRP-TP06-0405	5400	324	**120**	**YES**	ASL	NA	NO	NSL	NA	NA
LOW MOLECULAR WEIGHT PAHS	4/38	48	6470	CRP-TP06-0405	1807	356	NA	NO	BSL	NA	NO	NSL	NA	NA
NAPHTHALENE	1/38	250	250	CRP-TP06-0405	250	188	**0.47**	**YES**	ASL	800	NO	BSL	NA	NA
PHENANTHRENE	4/38	48	3800	CRP-TP06-0405	1120	284	120000[8]	NO	BSL	NA	NO	NSL	NA	NA
PYRENE	5/38	66	23000	CRP-TP06-0405	4818	795	120000	NO	BSL	NA	NO	NSL	NA	NA
TOTAL PAHS	6/38	27	101670	CRP-TP06-0405	17692	2927	NA	NO	NSL	NA	NO	NSL	NA	NA
Pesticides/PCBs (UG/KG)														
4,4'-DDE	4/38	0.29	0.33	CRP-TP04-0506	0.31	0.37	47	NO	BSL	NA	NO	NSL	NA	NA
4,4'-DDT	9/38	0.24	0.99	CRP-SB07-0406	0.53	0.41	67	NO	BSL	NA	NO	NSL	NA	NA
ALPHA-BHC	2/38	0.2	1.3	CRP-SB04-0810	0.82	0.27	**0.062**	**YES**	ASL	NA	NO	NSL	NA	NA
AROCLOR-1260	5/38	6.8	49	CRP-SB11-0810	24.7	11.3	**24**	**YES**	ASL	10000[9]	NO	BSL	NA	NA

TABLE 6-6
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
SUBSURFACE SOIL MIGRATION TO GROUNDWATER
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD[1]	Minimum Detect	Maximum Detect	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results[2]	EPA Soil to Grounwater Migration Criteria[3]	EPA Soil to Grounwater Migration COPC?	Rationale for EPA Soil to Grounwater Migration COPC Selection	RIDEM Soil to Groundwater Migration (Leachablity) Criteria[4]	RIDEM Soil to Groundwater Migration (Leachability) COPC?	Rationale for RIDEM Soil to Groundwater Migration COPC Selection	Background Concentration[5]	Exceed Background Concentration?
BETA-BHC	3/38	0.16	0.34	CRP-SB02-2426	0.26	0.2	**0.22**	**YES**	ASL	NA	NO	NSL	NA	NA
DELTA-BHC	3/38	0.23	0.57	CRP-SB04-0810	0.36	0.2	**0.062[10]**	**YES**	ASL	NA	NO	NSL	NA	NA
DIELDRIN	1/38	0.35	0.35	CRP-SB11-0810	0.35	0.37	**0.17**	**YES**	ASL	NA	NO	NSL	NA	NA
ENDOSULFAN II	13/38	0.28	5.6	CRP-TP06-0405	1.7	0.82	3000[11]	NO	BSL	NA	NO	NSL	NA	NA
ENDOSULFAN SULFATE	2/38	0.61	0.78	CRP-SB07-0406	0.7	0.41	3000[11]	NO	BSL	NA	NO	NSL	NA	NA
ENDRIN	2/38	0.51	5.3	CRP-TP06-0405	2.9	0.51	440	NO	BSL	NA	NO	NSL	NA	NA
ENDRIN ALDEHYDE	1/38	6.4	6.4	CRP-TP06-0405	6.4	0.56	440[12]	NO	BSL	NA	NO	NSL	NA	NA
GAMMA-BHC (LINDANE)	3/38	0.19	0.65	CRP-SB04-0810	0.46	0.21	**0.36**	**YES**	ASL	NA	NO	NSL	NA	NA
GAMMA-CHLORDANE	5/38	0.19	1.8	CRP-SB06-0810	0.56	0.29	13[13]	NO	BSL	1400[13]	NO	BSL	NA	NA
HEPTACHLOR	1/38	0.44	0.44	CRP-SB04-0810	0.44	0.19	1.2	NO	BSL	NA	NO	NSL	NA	NA
HEPTACHLOR EPOXIDE	2/38	0.15	3	CRP-SB06-0810	1.6	0.26	**0.15**	**YES**	ASL	NA	NO	NSL	NA	NA
TOTAL AROCLOR	5/38	6.8	49	CRP-SB11-0810	24.7	11.3	NA	NO	NSL	10000[9]	NO	BSL	NA	NA
TOTAL DDD/DDE/DDT	9/38	0.24	1.3	CRP-SB07-0406	0.67	0.55	NA	NO	NSL	NA	NO	NSL	NA	NA
Metals (MG/KG)														
ALUMINUM	38/38	1860	14800	CRP-SB05-3032	6365	6365	55000	NO	BSL	NA	NO	NSL	**8830**	YES
ARSENIC	38/38	4	28.8	CRP-SB03-2830	10.2	10.2	**0.0013**	**YES**	ASL	NA	NO	NSL	**4.04**	YES
BARIUM	38/38	5.9	40.1	CRP-SB04-0406	21.2	21.2	300	NO	BSL	NA	NO	NSL	**24.3**	YES
BERYLLIUM	38/38	0.189	0.43	CRP-TP01B-0506	0.3	0.3	58	NO	BSL	NA	NO	NSL	**0.384**	YES
CADMIUM	23/38	0.067	0.28	CRP-SB01-2628	0.13	0.13	1.4	NO	BSL	NA	NO	NSL	ND	NA
CALCIUM	38/38	237	1850	CRP-SB05-3032	765	765	NA	NO	NUT	NA	NO	NUT	**605**	YES
CHROMIUM	76/76	3.4	33.4	CRP-SB09-3840-D	13.9	13.9	**0.00083 [14]**	**YES**	ASL	NA	NO	NSL	**11.4**	YES
COPPER	38/38	9.1	45.2	CRP-SB03-2830	21.7	21.7	51	NO	BSL	NA	NO	NSL	**14.3**	YES
IRON	38/38	16700	53900	CRP-SB09-3840-D	31704	31704	**640**	**YES**	ASL	NA	NO	NSL	**16200**	YES
LEAD	38/38	5.2	26	CRP-TP06-0405	10.3	10.3	**14[15]**	**NO**	ASL	NA	NO	NSL	**7.66**	YES
MAGNESIUM	38/38	940	5790	CRP-SB05-3032	2510	2510	NA	NO	NUT	NA	NO	NUT	**2990**	YES
MANGANESE	38/38	73.7	1520	CRP-SB09-3840-D	538	538	**57**	**YES**	ASL	NA	NO	NSL	**316**	YES
MERCURY	3/38	0.02	0.028	CRP-SB01-0608	0.023	0.018	0.57	NO	BSL	NA	NO	NSL	ND	NA
NICKEL	38/38	10.1	65.5	CRP-SB03-2830	30.2	30.2	**48**	**YES**	ASL	NA	NO	NSL	**12.9**	YES
POTASSIUM	46/76	0.18	1350	CRP-SB09-3840	371	224	NA	NO	NUT	NA	NO	NUT	**1300**	YES
SODIUM	4/38	56.4	99.3	CRP-SB09-3840-D	68.5	131	NA	NO	NUT	NA	NO	NUT	**30.5**	YES
VANADIUM	38/38	9.6	19.9	CRP-SB05-3032	15.2	15.2	180	NO	BSL	NA	NO	NSL	**13.2**	YES
ZINC	38/38	31.7	282	CRP-SB09-3840-D	78	78	680	NO	BSL	NA	NO	NSL	**29.6**	YES
Petroleum Hydrocarbons (MG/KG)														
DIESEL RANGE ORGANICS	38/38	5.5	430	CRP-TP06-0405	30.8	30.8	NA	NO	NSL	NA	NO	NSL	NA	NA
GASOLINE RANGE ORGANICS	5/38	3.8	51	CRP-SB09-0608	15.1	3.1	NA	NO	NSL	NA	NO	NSL	NA	NA

(1) Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentration detected and as one sample when determining the frequency of detection and average results.
(2) Average of all analytical results is calculated using half of the detection limit for non-detects.
(3) EPA Regional Screening Level (ORNL, December 2009).
(4) RIDEM Screening Level (leachability criteria).
(5) Average subsurface soil concentration for MmA soil, from Basewide Background Study Report, Naval Station Newport, Newport RI. Final document, July 2008.
(6) Xylene mixture used as a surrogate concentration for Total Xylenes.
(7) Acenaphthene used as a surrogate concentration for Acenaphthylene.
(8) Pyrene used as a surrogate concentration for Benzo(g,h,i)perylene and Phenanthrene.
(9) PCBs used as a surrogate concentration for Acrolor 1260.
(10) Alpha BHC used as a surrogate concentration for Delta BHC.
(11) Endosulfan used as a surrogate concentration for Endosulfan II and Endosulfan Sulfate.

TABLE 6-6
SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
SUBSURFACE SOIL MIGRATION TO GROUNDWATER
MRP SITE 1, CARR POINT, RHODE ISLAND

Parameter	FOD(1)	Minimum Detect	Maximum Detect	Location Maximum Detect	Average of Positive Concentrations	Average of all Analytical Results(2)	EPA Soil to Grounwater Migration Criteria(3)	EPA Soil to Grounwater Migration COPC?	Rationale for EPA Soil to Grounwater Migration COPC Selection	RIDEM Soil to Groundwater Migration (Leachablity) Criteria(4)	RIDEM Soil to Groundwater Migration (Leachability) COPC?	Rationale for RIDEM Soil to Groundwater Migration COPC Selection	Background Concentration(5)	Exceed Background Concentration?

(12) Endrin used as a surrogate concentration for Endrin Aldehyde.
(13) Chlordane used as a surrogate concentration for Gamma Chlordane.
(14) Chromium IV used.
(15) MCL based value used for lead.
Shaded criterion indicates that the maximum detected concentration exceeds the screening criteria and was retained as a COPC.

ASL = Above Screening Level
BSL = Below Screenig Level
C = Carcinogen
EPA = Environmental Protection Agency
N = Noncarcinogen
NA = Not available
ND = Non-detect
NSL = No Screening Level
NUT = Essential Nutrient
RIDEM = Rhode Island Deparment of Environmental Management

TABLE 7-1
SOIL ECOLOGICAL SCREENING LEVELS
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

	Ecological Screening Level							
	Invertebrates		Plants		Avian		Mammals	
Chemical	**Value**	**Source**	**Value**	**Source**	**Value**	**Source**	**Value**	**Source**
Propellants (mg/kg)								
2,4-DINITROTOLUENE	20	Sunahara et al	6	Sunahara et al	NA	NA	1280	NOAA
NITROGLYCERIN	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics (mg/kg)								
ALUMINUM	pH<5.5	EcoSSL	pH<5.5	EcoSSL	pH<5.5	EcoSSL	pH<5.5	EcoSSL
ANTIMONY	78	EcoSSL	5	ORNL Plants	NA	NA	0.27	EcoSSL
ARSENIC	60	ORNL Inv	18	EcoSSL	43	EcoSSL	46	EcoSSL
BARIUM	330	EcoSSL	500	ORNL Plants	NA	NA	2000	EcoSSL
BERYLLIUM	40	EcoSSL	10	ORNL Plants	NA	NA	21	EcoSSL
CADMIUM	140	EcoSSL	32	EcoSSL	0.77	EcoSSL	0.36	EcoSSL
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	64	CCME	64	CCME	26	EcoSSL	34	EcoSSL
COBALT	NA	NA	13	EcoSSL	120	EcoSSL	230	EcoSSL
COPPER	80	EcoSSL	70	EcoSSL	28	EcoSSL	49	EcoSSL
IRON	NA	NA	pH<5, pH>8	EcoSSL	NA	NA	NA	NA
LEAD	1700	EcoSSL	120	EcoSSL	11	EcoSSL	56	EcoSSL
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	450	EcoSSL	220	EcoSSL	4300	EcoSSL	4000	EcoSSL
MERCURY	0.1	Reg 4/ORNL Inv	0.3	ORNL Plants	NA	NA	NA	NA
NICKEL	280	EcoSSL	38	EcoSSL	210	EcoSSL	130	EcoSSL
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	4.1	EcoSSL	0.52	EcoSSL	1.2	EcoSSL	0.63	EcoSSL
SILVER	NA	NA	560	EcoSSL	4.2	EcoSSL	14	EcoSSL
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	2	ORNL Plants	7.8	EcoSSL	280	EcoSSL
ZINC	120	EcoSSL	160	EcoSSL	46	EcoSSL	79	EcoSSL
Semivolatile Organics (ug/kg)								
1,1-BIPHENYL	NA	NA	60000	Reg 4/ORNL Plant	NA	NA	NA	NA
2-METHYLNAPHTHALENE	29000	EcoSSL	NA	NA	NA	NA	100000	EcoSSL
ACENAPHTHENE	29000	EcoSSL	20000	NOAA	NA	NA	100000	EcoSSL
ACENAPHTHYLENE	29000	EcoSSL	NA	NA	NA	NA	100000	EcoSSL
ANTHRACENE	29000	EcoSSL	NA	NA	NA	NA	100000	EcoSSL
BENZO(A)ANTHRACENE	18000	EcoSSL	NA	NA	NA	NA	1100	EcoSSL
BENZO(A)PYRENE	18000	EcoSSL	NA	NA	NA	NA	1100	EcoSSL
BENZO(B)FLUORANTHENE	18000	EcoSSL	NA	NA	NA	NA	1100	EcoSSL
BENZO(G,H,I)PERYLENE	18000	EcoSSL	NA	NA	NA	NA	1100	EcoSSL
BENZO(K)FLUORANTHENE	18000	EcoSSL	NA	NA	NA	NA	1100	EcoSSL
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	18000	EcoSSL	NA	NA	NA	NA	1100	EcoSSL
DIBENZO(A,H)ANTHRACENE	18000	EcoSSL	NA	NA	NA	NA	1100	EcoSSL
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	29000	EcoSSL	NA	NA	NA	NA	100000	EcoSSL
FLUORENE	29000	EcoSSL	NA	NA	NA	NA	100000	EcoSSL
INDENO(1,2,3-CD)PYRENE	18000	EcoSSL	NA	NA	NA	NA	1100	EcoSSL
N-NITROSODIPHENYLAMINE	20000	Reg 4/ORNL Inv	NA	NA	NA	NA	545	NOAA
NAPHTHALENE	29000	EcoSSL	NA	NA	NA	NA	100000	EcoSSL
PHENANTHRENE	29000	EcoSSL	NA	NA	NA	NA	100000	EcoSSL
PYRENE	18000	EcoSSL	NA	NA	NA	NA	1100	EcoSSL
Volatile Organics (ug/kg)								
ACETONE	NA	NA	NA	NA	NA	NA	2500	NOAA
METHYLENE CHLORIDE[(1)]	400	TV	400	TV	400	TV	400	TV
TETRACHLOROETHENE	3800	CCME	3800	CCME	NA	NA	9920	NOAA
TOTAL CHLORINATED ETHENES	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL CHLORINATED VOCS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7-1
SOIL ECOLOGICAL SCREENING LEVELS
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Ecological Screening Level							
	Invertebrates		Plants		Avian		Mammals	
	Value	Source	Value	Source	Value	Source	Value	Source
Pesticides/PCBs (ug/kg)								
4,4'-DDD	12000	CCME	12000	CCME	93	EcoSSL	21	EcoSSL
4,4'-DDE	12000	CCME	12000	CCME	93	EcoSSL	21	EcoSSL
4,4'-DDT	12000	CCME	12000	CCME	93	EcoSSL	21	EcoSSL
ALPHA-BHC	NA	NA	5	NOAA	NA	NA	99.4	NOAA
ALPHA-CHLORDANE(1)	0.03	TV	0.03	TV	0.03	TV	0.03	TV
AROCLOR-1260	33000	CCME	33000	CCME	1300	CCME	1300	CCME
DIELDRIN	NA	NA	NA	NA	22	EcoSSL	4.9	EcoSSL
ENDOSULFAN I(1)	0.01	TV	0.01	TV	0.01	TV	0.01	TV
ENDOSULFAN II(1)	0.01	TV	0.01	TV	0.01	TV	0.01	TV
ENDOSULFAN SULFATE(1)	0.01	TV	0.01	TV	0.01	TV	0.01	TV
ENDRIN(1)	0.04	TV	0.04	TV	0.04	TV	0.04	TV
ENDRIN ALDEHYDE(1)	0.04	TV	0.04	TV	0.04	TV	0.04	TV
ENDRIN KETONE(1)	0.04	TV	0.04	TV	0.04	TV	0.04	TV
GAMMA-BHC (LINDANE)	NA	NA	5	NOAA	NA	NA	99.4	NOAA
GAMMA-CHLORDANE(1)	0.03	TV	0.03	TV	0.03	TV	0.03	TV
HEPTACHLOR EPOXIDE(1)	0.7	TV	0.7	TV	0.7	TV	0.7	TV
TOTAL DDD/DDE/DDT	12000	CCME	12000	CCME	93	EcoSSL	21	EcoSSL
Petroleum Hydrocarbons (mg/kg)								
DIESEL RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA

1 The receptor on which the screening level is based is not reported (MHSPE, 2000).

CCME - Canadian Council and Minisiters of Environment (EC, 1999)
Eco SSL - EPA Ecological Soil Screening Levels (U.S. EPA, 2003, 2005, 2006, 2007)
NOAA - NOAA's Quick Reference Tables (Buchman, 2008)
ORNL Plant - Oak Ridge National Laboratory Plant Toxicological Benchmark (Efroymson, et al. 1997a)
ORNL Invert - Oak Ridge National Laboratory Invertebrate Toxicological Benchmark (Efroymson, et al. 1997b)
Region 4 - EPA Region IV Soil Screening Levels (U.S. EPA, 2001b) (Region 4 values that are based on the Dutch Target Value are used last in the order of preference.
Sunahara et al - Ecotoxicology of Explosivies (Sunahara et al, 2009)
TV - Target Value (MHSPE, 2000)

TABLE 7-2
SEDIMENT ECOLOGICAL SCREENING LEVELS
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

CHEMICAL	ECOLOGICAL SCREENING LEVEL	SOURCE
Inorganics (mg/kg)		
ALUMINUM	18000	Buchman, 1999
ANTIMONY	2	Long and Morgan, 1991
ARSENIC	8.2	Long et al, 1995
BARIUM	48	Buchman, 1999
BERYLLIUM	NA	
CADMIUM	1.2	Long et al, 1995
CALCIUM	NA	
CHROMIUM	81	Long et al, 1995
COBALT	10	Buchman, 1999
COPPER	34	Long et al, 1995
IRON	220000	Buchman, 1999
LEAD	46.7	Long et al, 1995
MAGNESIUM	NA	
MANGANESE	260	Buchman, 1999
NICKEL	20.9	Long et al, 1995
POTASSIUM	NA	
SELENIUM	1	Buchman, 1999
SILVER	1	Long et al, 1995
SODIUM	NA	
VANADIUM	57	Buchman, 1999
ZINC	150	Long et al, 1995
Semivolatile Organics (ug/kg)		
ACENAPHTHENE	16	Long et al, 1995
ANTHRACENE	85.3	Long et al, 1995
BENZO(A)ANTHRACENE	261	Long et al, 1995
BENZO(A)PYRENE	430	Long et al, 1995
BENZO(B)FLUORANTHENE	1800	Buchman, 1999
BENZO(G,H,I)PERYLENE	670	Buchman, 1999
BENZO(K)FLUORANTHENE	1800	Buchman, 1999
CHRYSENE	384	Long et al, 1995
DIBENZO(A,H)ANTHRACENE	63.4	Long et al, 1995
FLUORANTHENE	600	Long et al, 1995
FLUORENE	19	Long et al, 1995
HIGH MOLECULAR WEIGHT PAHS	1700	Long et al, 1995
INDENO(1,2,3-CD)PYRENE	600	Buchman, 1999
LOW MOLECULAR WEIGHT PAHS	552	Long et al, 1995
PHENANTHRENE	240	Long et al, 1995
PYRENE	665	Long et al, 1995
TOTAL PAHS	4200	Long et al, 1995

TABLE 7-3
EXPOSURE PARAMETERS FOR THE TERRESTRIAL WILDLIFE MODEL
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

	Conservative Inputs		Average Inputs	
Species/Exposure Inputs	**Values**	**Units**	**Values**	**Units**
Meadow Vole				
Body Weight = BW	1.700E-02	kg	3.580E-02	kg
Food Ingestion Rate = If	1.878E-03	kg/day	1.744E-03	kg/day
Water Ingestion Rate = Iw	7.513E-03	L/day	6.261E-03	L/day
Soil Ingestion Rate = Is	6.010E-05	kg/day	2.093E-05	kg/day
Home Range = HR	Assume 100% on site		6.590E-02	acres
Bobwhite Quail				
Body Weight = BW	1.540E-01	kg	1.751E-01	kg
Food Ingestion Rate = If	1.628E-02	kg/day	1.361E-02	kg/day
Water Ingestion Rate = Iw	2.276E-02	L/day	1.926E-02	L/day
Soil Ingestion Rate = Is	2.263E-03	kg/day	8.304E-04	kg/day
Home Range = HR	Assume 100% on site		1.880E+01	acres
Short-Tailed Shrew				
Body Weight = BW	1.500E-02	kg	1.610E-02	kg
Food Ingestion Rate = If	1.628E-02	kg/day	1.361E-02	kg/day
Water Ingestion Rate = Iw	4.280E-03	L/day	3.600E-03	L/day
Soil Ingestion Rate - Is	4.801E-05	kg/day	1.289E-05	kg/day
Home Range = HR	Assume 100% on site		9.699E-01	acres
American Robin				
Body Weight = BW	7.730E-02	kg	8.040E-02	kg
Food Ingestion Rate = If	1.247E-02	kg/day	1.188E-02	kg/day
Water Ingestion Rate = Iw	1.207E-02	L/day	1.126E-02	L/day
Soil Ingestion Rate - Is	2.046E-03	kg/day	7.601E-04	kg/day
Home Range = HR	Assume 100% on site		6.095E-01	acres
Raccoon				
Body Weight = BW	3.670E+00	kg	5.636E+00	kg
Food Ingestion Rate = If	2.370E-01	kg/day	1.840E-01	kg/day
Sediment Ingestion Rate = Is	2.228E-02	kg/day	1.730E-02	kg/day
Home Range = HR	Assume 100% on site		1.558E+03	acres
Herring Gull				
Body Weight = BW	9.510E-01	kg	1.092E+00	kg
Food Ingestion Rate = If	3.438E-02	kg/day	3.356E-02	kg/day
Sediment Ingestion Rate = Is	2.819E-03	kg/day	2.752E-03	kg/day
Home Range = HR	Assume 100% on site		1.000E+01	km-radius

Notes:
The exposure factors were derived as presented in Appendix F.

The soil/sediment ingestion rates were calculated by multiplying the food ingestion rates by the following incidental soil/sediment ingestion rates:

	Conservative	Average	Source
Meadow Vole	3.20%	1.20%	1
Bobwhite quail	13.90%	6.10%	1, 2
Short-tailed Shrew	3%	0.90%	1
American Robin	16.40%	6.40%	1,3
Raccoon	9.4%	9.4%	4
Herring Gull	8.2%	8.2%	4, 5

1 - USEPA (U.S. Environmental Protection Agency), 2007. Ecological Soil Screening Level Guidance, Office of Emergency and Remedial Response. February.
2 - Based on the mourning dove.
3 - Based on the shrew.
4 - Beyer, N., E. Connor, and S. Gerould. 1994. Estimates of Soil Ingestion by Wildlife. Journal of Wildlife Management 58(2) pp. 375-382.
5 - Based on Canada goose.

TABLE 7-4

OCCURRENCE, DISTRIBUTION, AND SELECTION OF ECOLOGICAL CHEMICALS OF POTENTIAL CONCERN - SURFACE SOIL
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Sample Count[1]		Minimum Detected Concentration[2]	Maximum Detected Concentration[2]	Sample of Maximum Concentration	Average of Positive	Average of All Results[4]	Ecological Screening Level				COPC (yes/no)?	Rationale for COPC selection
	Detections	Total						Invertebrates	Plants	Avian	Mammals		
Explosives (mg/kg)													
2,4-DINITROTOLUENE	4	9	0.098 J	0.16 J	CRP-SO-ARC1A	0.13	0.14	20	6	NA	1280	YES	NSL
NITROGLYCERIN	9	9	1.2 J	16 J	CRP-SO-ARC1A	7.3	7.3	NA	NA	NA	NA	YES	NSL
Inorganics (mg/kg)													
ALUMINUM	14	14	5160 J	14900 J	CRP-SS02-0612	10927	10927	pH<5.5	pH<5.5	pH<5.5	pH<5.5	YES	pH not reported
ANTIMONY	7	14	0.43 J	8.5 J	CRP-SB10-0001	2.2	1.5	78	5	NA	0.27	YES	ASL/NSL
ARSENIC	14	14	4.6 J	85.5 J	CRP-SB02-0001	19	19	60	18	43	46	YES	ASL
BARIUM	14	14	12.6 J	51.9 J	CRP-SB02-0001	26	26	330	500	NA	2000	YES	NSL
BERYLLIUM	14	14	0.22 J	0.39 J	CRP-SB10-0001	0.32	0.32	40	10	NA	21	YES	NSL
CADMIUM	14	14	0.19 J	1.4	CRP-SB10-0001	0.57	0.57	140	32	0.77	0.36	YES	ASL
CALCIUM	14	14	413 J	14200 J	CRP-SB09-0001	2155	2155	NA	NA	NA	NA	NO	NUT
CHROMIUM	14	14	13.4 J	45.9 J	CRP-SB03-0001	19	19	64	64	26	34	YES	ASL
COBALT	14	14	4.4	21.8	CRP-SB08-0001	13	13	NA	13	120	230	YES	ASL/NSL
COPPER	14	14	20.1	579	CRP-SB10-0001	90	90	80	70	28	49	YES	ASL
IRON	14	14	17600	33800 J	CRP-SB08-0001	27004	27004	NA	pH<5, pH>8	NA	NA	YES	NSL
LEAD	14	14	13.3 J	999 J	CRP-SB02-0001	200	200	1700	120	11	56	YES	ASL
MAGNESIUM	14	14	1530 J	4590 J	CRP-SB09-0001; CRP-SS02-0612	3291	3291	NA	NA	NA	NA	NO	NUT
MANGANESE	14	14	187	660	CRP-SB08-0001	440	440	450	220	4300	4000	YES	ASL
MERCURY	11	14	0.017 J	0.17	CRP-SB10-0001	0.06	0.05	0.1	0.3	NA	NA	YES	ASL/NSL
NICKEL	14	14	15.3	35.7	CRP-SB10-0001	26	26	280	38	210	130	NO	BSL
POTASSIUM	14	14	215 J	497 J	CRP-SB09-0001	385	385	NA	NA	NA	NA	NO	NUT
SELENIUM	11	14	0.23 J	0.63	CRP-SB09-0001	0.42	0.37	4.1	0.52	1.2	0.63	YES	ASL
SILVER	2	14	0.1 J	0.21	CRP-SB03-0001	0.16	0.10	NA	560	4.2	14	YES	NSL
SODIUM	1	14	67.5 J	67.5 J	CRP-SS02-0006	68	138	NA	NA	NA	NA	NO	NUT
VANADIUM	14	14	11.3	33	CRP-SB10-0001	18	18	NA	2	7.8	280	YES	ASL/NSL
ZINC	14	14	58.6	217	CRP-SB09-0001	121	121	120	160	46	79	YES	ASL
Semivolatile Organics (ug/kg)													
1,1-BIPHENYL	1	23	300 J	300 J	CRP-SB09-0001	300	482	NA	60000	NA	NA	YES	NSL
2-METHYLNAPHTHALENE	2	23	580 J	1400 J	CRP-SB09-0001	990	522	29000	NA	NA	100000	YES	NSL
ACENAPHTHENE	8	23	260 J	15000	CRP-SB09-0001	2478	1299	29000	20000	NA	100000	YES	NSL
ACENAPHTHYLENE	1	23	1200 J	1200 J	CRP-SB05-0001	1200	502	29000	NA	NA	100000	YES	NSL
ANTHRACENE	10	23	150 J	16000 J	CRP-SB09-0001	2674	1511	29000	NA	NA	100000	YES	NSL
BENZO(A)ANTHRACENE	15	23	70 J	91000 J	CRP-SB09-0001	10741	7255	18000	NA	NA	1100	YES	ASL/NSL
BENZO(A)PYRENE	14	23	74 J	120000	CRP-SB09-0001	14258	8737	18000	NA	NA	1100	YES	ASL/NSL
BENZO(B)FLUORANTHENE	14	23	49 J	130000	CRP-SB09-0001	16339	10230	18000	NA	NA	1100	YES	ASL/NSL
BENZO(G,H,I)PERYLENE	13	23	850 J	78000	CRP-SB09-0001	10288	6112	18000	NA	NA	1100	YES	ASL/NSL
BENZO(K)FLUORANTHENE	12	23	46 J	47000	CRP-SB09-0001	7061	4017	18000	NA	NA	1100	YES	ASL/NSL
CARBAZOLE	7	23	280 J	11000	CRP-SB09-0001	2233	1561	NA	NA	NA	NA	YES	NSL
CHRYSENE	15	23	80 J	100000 J	CRP-SB09-0001	12065	7918	18000	NA	NA	1100	YES	ASL/NSL
DIBENZO(A,H)ANTHRACENE	6	23	2100 J	22000 J	CRP-SB09-0001	6217	1740	18000	NA	NA	1100	YES	ASL/NSL
DIBENZOFURAN	7	23	180 J	3500	CRP-SB09-0001	757	586	NA	NA	NA	NA	YES	NSL
FLUORANTHENE	15	23	140 J	110000 J	CRP-SB09-0001	14263	9552	29000	NA	NA	100000	YES	ASL/NSL
FLUORENE	5	23	230 J	6100	CRP-SB09-0001	1668	765	29000	NA	NA	100000	YES	NSL
INDENO(1,2,3-CD)PYRENE	10	23	1400 J	81000	CRP-SB09-0001	13860	6376	18000	NA	NA	1100	YES	ASL/NSL

TABLE 7-4

OCCURRENCE, DISTRIBUTION, AND SELECTION OF ECOLOGICAL CHEMICALS OF POTENTIAL CONCERN - SURFACE SOIL
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Sample Count[1]		Minimum Detected Concentration[2]	Maximum Detected Concentration[2]	Sample of Maximum Concentration	Average of Positive	Average of All Results[4]	Ecological Screening Level				COPC (yes/no)?	Rationale for COPC selection
	Detections	Total						Invertebrates	Plants	Avian	Mammals		
N-NITROSODIPHENYLAMINE	5	23	420 J	920 J	CRP-SO-ARC1A	570	615	20000	NA	NA	545	YES	ASL/NSL
NAPHTHALENE	5	23	240 J	3700	CRP-SB09-0001	1012	592	29000	NA	NA	100000	YES	NSL
PHENANTHRENE	18	23	31 J	63000	CRP-SB09-0001	5772	4657	29000	NA	NA	100000	YES	ASL/NSL
PYRENE	19	23	66 J	120000	CRP-SB09-0001	12214	10220	18000	NA	NA	1100	YES	ASL/NSL
Volatile Organics (ug/kg)													
ACETONE	4	14	7.2 J	76 J	CRP-SB07-0001	22	27	NA	NA	NA	2500	YES	NSL
METHYLENE CHLORIDE	1	14	0.74 J	0.74 J	CRP-SB03-0001	0.74	5.5	400	400	400	400	NO	BSL
TETRACHLOROETHENE	1	14	1.1 J	1.1 J	CRP-SS02-0612	1.1	2.8	3800	3800	NA	9920	YES	NSL
TOTAL CHLORINATED ETHENES	1	14	1.1 J	1.1 J	CRP-SS02-0612	1.1	3.5	NA	NA	NA	NA	NO	NSL*
TOTAL CHLORINATED VOCS	2	14	0.74 J	1.1 J	CRP-SS02-0612	0.92	3.3	NA	NA	NA	NA	NO	NSL*
Pesticides/PCBs (ug/kg)													
4,4'-DDD	3	14	1.2 J	3.6 J	CRP-SB09-0001	2.2	81	12000	12000	93	21	NO	BSL
4,4'-DDE	9	14	0.6 J	38 J	CRP-SS01-0006; CRP-SS01-0612	14	9	12000	12000	93	21	YES	ASL
4,4'-DDT	7	14	0.81 J	62	CRP-SB09-0001	16	172	12000	12000	93	21	YES	ASL
ALPHA-BHC	2	14	0.32 J	0.93	CRP-SB06-0001	0.63	0.27	NA	5	NA	99.4	YES	NSL
ALPHA-CHLORDANE[5]	2	14	2.3	3.8 J	CRP-SB11-0001	3.05	0.61	0.03	0.03	0.03	0.03	YES	ASL
AROCLOR-1260	13	14	7.2 J	45000 J	CRP-SB02-0001	6086	5652	33000	33000	1300	1300	YES	ASL
DIELDRIN	8	14	0.5 J	190 J	CRP-SS01-0006	33	59	NA	NA	22	4.9	YES	ASL/NSL
ENDOSULFAN I	1	14	1.2	1.2	CRP-SB06-0001	1.2	0.27	0.01	0.01	0.01	0.01	YES	ASL
ENDOSULFAN II	6	14	0.31 J	480 J	CRP-SB02-0001	118	51	0.01	0.01	0.01	0.01	YES	ASL
ENDOSULFAN SULFATE	3	14	0.6 J	5.9	CRP-SB05-0001	3.1	68	0.01	0.01	0.01	0.01	YES	ASL
ENDRIN	6	14	0.33 J	200 J	CRP-SS01-0006	71	31	0.04	0.04	0.04	0.04	YES	ASL
ENDRIN ALDEHYDE	1	14	0.63 J	0.63 J	CRP-SB07-0001	0.63	0.92	0.04	0.04	0.04	0.04	YES	ASL
ENDRIN KETONE	1	14	0.87 J	0.87 J	CRP-SB08-0001	0.87	1.2	0.04	0.04	0.04	0.04	YES	ASL
GAMMA-BHC (LINDANE)	5	14	0.79	5.3	CRP-SB09-0001	1.9	0.81	NA	5	NA	99.4	YES	ASL/NSL
GAMMA-CHLORDANE	4	14	1.4	13	CRP-SS01-0006	6.2	1.9	0.03	0.03	0.03	0.03	YES	ASL
HEPTACHLOR EPOXIDE	2	14	1.1 J	1.4 J	CRP-SB11-0001	1.3	0.58	0.7	0.7	0.7	0.7	YES	ASL
TOTAL DDD/DDE/DDT	10	14	0.6 J	95.6 J	CRP-SB09-0001	24	62	12000	12000	93	21	YES	ASL
Petroleum Hydrocarbons (mg/kg)													
DIESEL RANGE ORGANICS	14	14	47	5600	CRP-SB09-0001	592	592	NA	NA	NA	NA	YES	NSL

1 Sample and duplicate are considered as one sample when determining the frequency of detection.
2 Sample and duplicate are considered as two separate samples when determining the miniumum and maximum concentrations detected.
3 Average of detected concentrations only.
4 Average of all analytical results.
Note: Sample CRP-SB04-0002 was excluded from the statistics because it is located under pavement and there is no exposure.

Rationale Codes:
For Selection as a COPC or for Further Evaluation:
ASL = Above COPC Screening Level
BSL = Below COPC Screening Level
NSL = No Screening Level Available
NSL* = No screening level, but risks are accounted for by individual constituents.
NUT = Essential Nutrient

TABLE 7-5
OCCURRENCE, DISTRIBUTION, AND SELECTION OF ECOLOGICAL CHEMICALS OF POTENTIAL CONCERN - SEDIMENT 0-6 INCHES
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Sample Count[1]		Minimum Detected Concentration[2]	Maximum Detected Concentration[2]	Sample of Maximum Concentration	Average of Positive Results[3]	Average of All Results[4]	Ecological Screening Level	COPC (yes/no)?	Rationale for COPC selection
	Detections	Total								
Metals (mg/kg)										
ALUMINUM	20	20	2740	4720	CRP-SD12-0006	3564	3564	18000	NO	BSL
ANTIMONY	7	20	0.29 J	1.6 J	CRP-SD02-0006	0.74	0.50	2	NO	BSL
ARSENIC	20	20	1.7	8.9	CRP-SD02-0006	3.1	3.1	**8.2**	**YES**	ASL
BARIUM	20	20	5.4	13.9	CRP-SD02-0006	7.7	7.7	48	NO	BSL
BERYLLIUM	20	20	0.12 J	0.28 J	CRP-SD01-0006	0.18	0.18	NA	**YES**	NSL
CADMIUM	20	20	0.068 J	0.21 J	CRP-SD10-0006-D; CRP-SD16-0006	0.15	0.15	1.2	NO	BSL
CALCIUM	20	20	626 J	36100 J	CRP-SD17-0006	5855	5855	NA	NO	NUT
CHROMIUM	20	20	7.9	13.8	CRP-SD02-0006	10	10	81	NO	BSL
COBALT	20	20	1.9	9.3	CRP-SD02-0006	3.4	3.4	10	NO	BSL
COPPER	20	20	3.9	207	CRP-SD01-0006	19	19	**34**	**YES**	ASL
IRON	20	20	7680 J	35200	CRP-SD01-0006	12216	12216	220000	NO	BSL
LEAD	20	20	7.2 J	424	CRP-SD02-0006	87	87	**46.7**	**YES**	ASL
MAGNESIUM	20	20	1470	2570	CRP-SD02-0006	1892	1892	NA	NO	NUT
MANGANESE	20	20	81.5 J	437 J	CRP-SD02-0006	135	135	**260**	**YES**	ASL
NICKEL	20	20	5.8	23.6	CRP-SD02-0006	9.5	9.5	**20.9**	**YES**	ASL
POTASSIUM	20	20	354 J	922 J	CRP-SD17-0006	554	554	NA	NO	NUT
SELENIUM	1	20	0.4 J	0.4 J	CRP-SD10-0006	0.27	0.15	1	NO	BSL
SILVER	2	20	0.086 J	0.11 J	CRP-SD11-0006	0.10	0.08	1	NO	BSL
SODIUM	20	20	2150	4910	CRP-SD17-0006	2887	2887	NA	NO	NUT
VANADIUM	20	20	8.7	18	CRP-SD02-0006	12	12	57	NO	BSL
ZINC	20	20	26.5	99.7	CRP-SD02-0006	43	43	150	NO	BSL
Semivolatile Organics (ug/kg)										
ACENAPHTHENE	1	9	110 J	110 J	CRP-SD01-0006	110	122	**16**	**YES**	ASL
ANTHRACENE	2	9	45 J	160 J	CRP-SD01-0006	103	119	**85.3**	**YES**	ASL
BENZO(A)ANTHRACENE	4	9	60 J	820	CRP-SD01-0006	322	213	**261**	**YES**	ASL
BENZO(A)PYRENE	2	9	460	1100 J	CRP-SD01-0006	780	269	**430**	**YES**	ASL
BENZO(B)FLUORANTHENE	3	9	100 J	1200 J	CRP-SD01-0006	570	273	1800	NO	BSL
BENZO(G,H,I)PERYLENE	4	9	150 J	830 J	CRP-SD01-0006	375	236	**670**	**YES**	ASL
BENZO(K)FLUORANTHENE	2	9	140 J	440 J	CRP-SD01-0006	290	161	1800	NO	BSL
CHRYSENE	4	9	62 J	930	CRP-SD01-0006	378	238	**384**	**YES**	ASL
FLUORANTHENE	4	9	85 J	1100	CRP-SD01-0006	424	258	**600**	**YES**	ASL
FLUORENE	1	9	81 J	81 J	CRP-SD01-0006	81	119	**19**	**YES**	ASL
HIGH MOLECULAR WEIGHT PAHS	6	9	57 J	8430 J	CRP-SD01-0006	2172	1490	**1700**	**YES**	ASL
INDENO(1,2,3-CD)PYRENE	2	9	420	910 J	CRP-SD01-0006	665	244	**600**	**YES**	ASL
LOW MOLECULAR WEIGHT PAHS	5	9	30 J	1101 J	CRP-SD01-0006	318	232	**552**	**YES**	ASL
PHENANTHRENE	5	9	30 J	750	CRP-SD01-0006	239	188	**240**	**YES**	ASL
PYRENE	5	9	57 J	1100	CRP-SD01-0006	372	262	**665**	**YES**	ASL
TOTAL PAHS	6	9	57 J	9531 J	CRP-SD01-0006	2437	1667	**4200**	**YES**	ASL

1 Sample and duplicate are considered as one sample when determining the frequency of detection.
2 Sample and duplicate are considered as two separate samples when determining the miniumum and maximum concentrations detected.
3 Average of detected concentrations only.
4 Average of all analytical results.

Rationale Codes:
For Selection as a COPC or for Further Evaluation:
ASL = Above COPC Screening Level
BSL = Below COPC Screening Level
NSL = No Screening Level Available
NUT = Essential Nutrient

TABLE 7-6
OCCURRENCE, DISTRIBUTION, AND SELECTION OF ECOLOGICAL CHEMICALS OF POTENTIAL CONCERN - SEDIMENT >6 INCHES
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Sample Count[1]		Minimum Detected Concentration[2]	Maximum Detected Concentration[2]	Sample of Maximum Concentration	Average of Positive Results[3]	Average of All Results[4]	Ecological Screening Level	COPC (yes/no)?	Rationale for COPC selection
	Detections	Total								
Inorganics (mg/kg)										
ALUMINUM	15	15	2800	5070 J	CRP-SD01-0612	3573	3573	18000	NO	BSL
ANTIMONY	7	15	0.32 J	3.3 J	CRP-SD01-0612	0.83	0.62	**2**	**YES**	ASL
ARSENIC	15	15	1.7	19.4	CRP-SD02-0612	3.9	3.9	**8.2**	**YES**	ASL
BARIUM	15	15	5.5	19.1	CRP-SD02-0612	7.7	7.7	48	NO	BSL
BERYLLIUM	15	15	0.13 J	0.33	CRP-SD01-0612	0.18	0.18	NA	**YES**	NSL
CADMIUM	13	15	0.08 J	0.22 J	CRP-SD08-0612	0.15	0.17	1.2	NO	BSL
CALCIUM	15	15	604 J	6380	CRP-SD01-0612	2382	2382	NA	NO	NUT
CHROMIUM	15	15	8.2	17.1	CRP-SD01-0612	10	10	81	NO	BSL
COBALT	15	15	1.9	18.8	CRP-SD02-0612	4.3	4.3	**10**	**YES**	ASL
COPPER	15	15	4.6	47.9	CRP-SD01-0612	11	11	**34**	**YES**	ASL
IRON	15	15	7540	44200	CRP-SD02-0612	13203	13203	220000	NO	BSL
LEAD	15	15	7.8 J	223 J	CRP-SD01-0612	74	74	**46.7**	**YES**	ASL
MAGNESIUM	15	15	1460	3260	CRP-SD02-0612	1903	1903	NA	NO	NUT
MANGANESE	15	15	79.5 J	2190	CRP-SD02-0612	258	258	**260**	**YES**	ASL
NICKEL	15	15	5.9	47.4	CRP-SD01-0612	13	13	**20.9**	**YES**	ASL
POTASSIUM	15	15	401 J	646 J	CRP-SD15-0612	515	515	NA	NO	NUT
SELENIUM	1	15	0.33 J	0.33 J	CRP-SD16-0612	0.33	0.23	1	NO	BSL
SILVER	1	15	0.058 J	0.058 J	CRP-SD16-0612	0.06	0.09	1	NO	BSL
SODIUM	15	15	1770	4530	CRP-SD15-0612	2392	2392	NA	NO	NUT
VANADIUM	15	15	8.9	17.2	CRP-SD01-0612	12	12	57	NO	BSL
ZINC	15	15	29.6	72.4 J	CRP-SD01-0612	39	39	150	NO	BSL
Semivolatile Organics (ug/kg)										
ACENAPHTHENE	2	6	63 J	66 J	CRP-SD01-0612	65	102	**16**	**YES**	ASL
ANTHRACENE	2	6	91 J	94 J	CRP-SD01-0612	93	112	**85.3**	**YES**	ASL
BENZO(A)ANTHRACENE	3	6	110 J	500	CRP-SD01-0612	337	228	**261**	**YES**	ASL
BENZO(A)PYRENE	2	6	590	650	CRP-SD01-0612	620	288	**430**	**YES**	ASL
BENZO(B)FLUORANTHENE	2	6	640	640	CRP-SD01-0612; CRP-SD02-0612	640	294	1800	NO	BSL
BENZO(G,H,I)PERYLENE	3	6	230 J	530	CRP-SD01-0612	423	272	670	NO	BSL
BENZO(K)FLUORANTHENE	2	6	220 J	240 J	CRP-SD02-0612	230	158	1800	NO	BSL
CHRYSENE	3	6	120 J	650	CRP-SD01-0612	410	265	**384**	**YES**	ASL
DIBENZO(A,H)ANTHRACENE	1	6	280	280	CRP-SD01-0612	280	148	**63.4**	**YES**	ASL
FLUORANTHENE	3	6	170 J	680	CRP-SD01-0612	490	305	**600**	**YES**	ASL
FLUORENE	2	6	39 J	39 J	CRP-SD01-0612; CRP-SD02-0612	39	94	**19**	**YES**	ASL
HIGH MOLECULAR WEIGHT PAHS	3	6	810 J	5380 J	CRP-SD01-0612	3617	1868	**1700**	**YES**	ASL
INDENO(1,2,3-CD)PYRENE	2	6	580	590	CRP-SD02-0612	585	276	600	NO	BSL
LOW MOLECULAR WEIGHT PAHS	4	6	35 J	629 J	CRP-SD01-0612	337	265	**552**	**YES**	ASL
PHENANTHRENE	4	6	35 J	430	CRP-SD01-0612	239	199	**240**	**YES**	ASL
PYRENE	3	6	180 J	650	CRP-SD01-0612	480	300	665	NO	BSL
TOTAL PAHS	4	6	35 J	6009 J	CRP-SD01-0612	3049	2073	**4200**	**YES**	ASL

1 Sample and duplicate are considered as one sample when determining the frequency of detection.
2 Sample and duplicate are considered as two separate samples when determining the miniumum and maximum concentrations detected.
3 Average of detected concentrations only.
4 Average of all analytical results.

Rationale Codes:
For Selection as a COPC or for Further Evaluation:
ASL = Above COPC Screening Level
BSL = Below COPC Screening Level
NSL = No Screening Level Available
NUT = Essential Nutrient

TABLE 7-7
TERRESTRIAL WILDLIFE MODEL NOAEL AND LOAEL EEQS
CONSERVATIVE EXPOSURE ASSUMPTIONS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Soil Herbivorous Receptors				Soil Insectivorous Receptors			
	Meadow Vole		Bobwhite Quail		Short-Tailed Shrew		American Robin	
	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL
Propellants								
2,4-DINITROTOLUENE	2.3E-01	3.1E-02	NA	NA	8.7E-01	1.2E-01	NA	NA
NITROGLYCERIN	6.1E-01	5.7E-02	NA	NA	5.8E+00	5.4E-01	NA	NA
Inorganics								
ALUMINUM	3.2E+01	3.2E+00	2.1E+00	2.1E-01	1.0E+03	1.0E+02	6.2E+00	6.2E-01
ANTIMONY	1.1E+00	2.3E-02	NA	NA	1.6E+02	3.4E+00	NA	NA
ARSENIC	6.3E-01	1.4E-01	7.1E-01	3.5E-01	6.1E+00	1.4E+00	1.4E+00	7.0E-01
BARIUM	2.1E-02	1.3E-02	NA	NA	1.0E-01	6.4E-02	NA	NA
BERYLLIUM	6.3E-02	5.0E-02	NA	NA	3.8E-02	3.0E-02	NA	NA
CADMIUM	1.1E-01	1.3E-02	6.8E-02	1.6E-02	1.5E+01	1.7E+00	1.2E+00	2.8E-01
CHROMIUM	1.5E-01	6.4E-03	3.3E-01	5.6E-02	6.4E+00	2.6E-01	1.3E+00	2.2E-01
COBALT	1.3E-02	5.0E-03	4.4E-02	1.8E-02	4.0E-01	1.6E-01	1.3E-01	5.5E-02
COPPER	8.4E-01	5.7E-02	2.7E+00	3.2E-01	5.8E+01	3.9E+00	1.6E+01	1.8E+00
IRON	3.1E+00	3.1E-01	5.3E+00	5.3E-01	5.9E+01	5.9E+00	1.3E+01	1.3E+00
LEAD	1.1E+00	2.7E-02	9.8E+00	3.6E-01	5.0E+01	1.3E+00	3.7E+01	1.4E+00
MANGANESE	1.6E-01	5.5E-02	8.5E-02	4.0E-02	8.3E-01	2.9E-01	1.3E-01	6.2E-02
MERCURY	3.0E+00	5.9E-01	1.4E+01	1.4E+00	2.0E+01	4.0E+00	1.6E+01	1.6E+00
SELENIUM	2.5E-01	5.4E-02	1.4E-01	5.1E-02	5.0E+00	1.1E+00	4.3E-01	1.5E-01
SILVER	1.8E-04	9.0E-06	1.7E-03	5.6E-05	7.8E-02	3.9E-03	3.7E-02	1.2E-03
VANADIUM	3.2E-02	1.4E-02	1.5E+00	3.0E-01	3.9E-01	1.7E-01	3.2E+00	6.5E-01
ZINC	1.5E-01	3.8E-02	2.0E-01	7.7E-02	7.2E+00	1.8E+00	1.3E+00	5.0E-01
Semivolatile Organics								
1,1-BIPHENYL	1.3E-03	1.3E-04	NA	NA	6.5E-02	6.5E-03	NA	NA
2-METHYLNAPHTHALENE	6.0E-04	1.1E-04	2.7E-02	2.7E-03	7.0E-02	1.3E-02	3.6E-01	3.6E-02
ACENAPHTHENE	8.1E-04	1.5E-04	1.1E-01	1.1E-02	3.7E-01	6.7E-02	2.0E+00	2.0E-01
ACENAPHTHYLENE	6.8E-04	1.3E-04	2.8E-02	2.8E-03	4.5E-01	8.4E-02	2.2E+00	2.2E-01
ANTHRACENE	6.3E-03	1.2E-03	2.9E-01	2.9E-02	6.4E-01	1.2E-01	3.3E+00	3.3E-01
BENZO(A)ANTHRACENE	7.0E-01	1.1E-02	7.2E-01	7.2E-02	2.6E+02	4.1E+00	1.3E+01	1.3E+00
BENZO(A)PYRENE	3.1E+00	5.0E-02	1.6E+00	1.6E-01	2.8E+02	4.5E+00	1.4E+01	1.4E+00
BENZO(B)FLUORANTHENE	8.0E+00	1.3E-01	3.1E+00	3.1E-01	6.0E+02	9.6E+00	2.9E+01	2.9E+00
BENZO(G,H,I)PERYLENE	1.3E+01	2.0E-01	4.2E+00	4.2E-01	4.1E+02	6.5E+00	2.0E+01	2.0E+00
BENZO(K)FLUORANTHENE	8.4E-01	1.3E-02	5.1E-01	5.1E-02	2.2E+02	3.5E+00	1.0E+01	1.0E+00
CARBAZOLE	5.4E-01	8.6E-03	2.2E-01	2.2E-02	1.9E+01	3.1E-01	1.0E+00	1.0E-01
CHRYSENE	7.6E-01	1.2E-02	7.9E-01	7.9E-02	4.0E+02	6.5E+00	2.0E+01	2.0E+00
DIBENZO(A,H)ANTHRACENE	6.4E-01	1.0E-02	3.1E-01	3.1E-02	9.0E+01	1.4E+00	4.4E+00	4.4E-01
DIBENZOFURAN	1.1E-01	1.8E-03	5.3E-02	5.3E-03	6.2E+00	9.9E-02	3.3E-01	3.3E-02
FLUORANTHENE	9.9E-02	1.8E-02	3.7E+00	3.7E-01	5.5E+00	1.0E+00	2.8E+01	2.8E+00
FLUORENE	3.3E-04	6.1E-05	4.5E-02	4.5E-03	9.7E-01	1.8E-01	4.8E+00	4.8E-01
INDENO(1,2,3-CD)PYRENE	2.1E+00	3.3E-02	1.1E+00	1.1E-01	4.1E+02	6.6E+00	2.0E+01	2.0E+00
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	7.6E-02	1.4E-02	2.4E+00	2.4E-01	2.7E-01	5.0E-02	1.4E+00	1.4E-01
PHENANTHRENE	2.2E-02	4.1E-03	1.0E+00	1.0E-01	1.8E+00	3.3E-01	9.6E+00	9.6E-01
PYRENE	1.6E+01	2.6E-01	5.4E+00	5.4E-01	3.7E+02	5.9E+00	1.9E+01	1.9E+00
Volatile Organics								
ACETONE	4.4E-03	8.8E-04	NA	NA	8.3E-03	1.7E-03	NA	NA
TETRACHLOROETHENE	1.1E-04	2.1E-05	NA	NA	8.6E-04	1.7E-04	NA	NA
Pesticides/PCBs								
4,4'-DDE	6.1E-03	1.6E-04	5.7E-03	4.8E-04	4.9E+00	1.3E-01	4.8E-01	4.0E-02
4,4'-DDT	9.0E-03	2.4E-04	8.7E-03	7.3E-04	5.5E+00	1.5E-01	5.4E-01	4.5E-02
ALPHA-BHC	1.8E-03	1.8E-04	6.1E-05	1.5E-05	3.6E-01	3.6E-02	1.4E-03	3.4E-04
ALPHA-CHLORDANE	5.2E-06	2.6E-06	3.1E-05	6.2E-06	4.5E-03	2.3E-03	1.5E-03	3.0E-04
AROCLOR-1260	2.6E+00	2.6E-01	3.8E+00	3.8E-01	1.1E+04	1.1E+03	6.5E+02	6.5E+01
DIELDRIN	1.6E-01	1.9E-03	6.3E-02	5.5E-03	2.0E+02	2.4E+00	6.4E+00	5.7E-01
ENDOSULFAN I	3.2E-04	3.2E-05	5.9E-06	5.9E-07	8.7E-03	8.7E-04	2.3E-05	2.3E-06
ENDOSULFAN II	1.3E-01	1.3E-02	2.4E-03	2.4E-04	3.5E+00	3.5E-01	9.0E-03	9.0E-04
ENDOSULFAN SULFATE	1.6E-03	1.6E-04	2.9E-05	2.9E-06	4.3E-02	4.3E-03	1.1E-04	1.1E-05
ENDRIN	2.7E-02	2.7E-03	4.5E-01	4.5E-02	8.5E+00	8.5E-01	1.2E+01	1.2E+00
ENDRIN ALDEHYDE	8.6E-05	8.6E-06	1.4E-03	1.4E-04	2.7E-02	2.7E-03	3.7E-02	3.7E-03
ENDRIN KETONE	1.2E-04	1.2E-05	2.0E-03	2.0E-04	3.7E-02	3.7E-03	5.1E-02	5.1E-03
GAMMA-BHC (LINDANE)	2.2E-05	2.2E-06	1.1E-04	1.1E-05	3.6E-03	3.6E-04	2.2E-03	2.2E-04
GAMMA-CHLORDANE	1.8E-05	8.9E-06	1.1E-04	2.1E-05	1.5E-02	7.7E-03	5.1E-03	1.0E-03
HEPTACHLOR EPOXIDE	9.3E-05	9.3E-06	NA	NA	4.6E-02	4.6E-03	NA	NA
TOTAL DDD/DDE/DDT	1.3E-02	3.4E-04	1.3E-02	1.1E-03	7.9E+00	2.1E-01	7.7E-01	6.5E-02
Petroleum Hydrocarbons								
DIESEL RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA

Cells are shaded if the value is greater than 1.0

NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
EEQ - Ecological Effects Quotient
NA = Value not able to be calculated

TABLE 7-8
TERRESTRIAL WILDLIFE MODEL NOAEL AND LOAEL EEQS
CONSERVATIVE EXPOSURE ASSUMPTIONS - SEDIMENT 0-6 INCHES
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Sediment Invertivorous Receptors EEQs			
	Herring Gull		Raccoon	
	NOAEL	LOAEL	NOAEL	LOAEL
Metals				
ALUMINUM	1.7E+00	1.7E-01	1.7E+02	1.7E+01
ANTIMONY	NA	NA	1.9E+00	4.1E-02
ARSENIC	1.1E-01	5.5E-02	4.3E-01	9.9E-02
BARIUM	2.0E-03	9.9E-04	1.6E-03	1.0E-03
BERYLLIUM	NA	NA	3.7E-02	2.9E-02
CADMIUM	4.2E-02	9.7E-03	1.4E-01	1.6E-02
CHROMIUM	1.0E-01	1.8E-02	2.1E-01	8.6E-03
COBALT	4.8E-02	2.0E-02	9.0E-02	3.5E-02
COPPER	9.9E+00	1.1E+00	1.2E+01	8.8E-01
IRON	1.4E+01	1.4E+00	5.0E+01	5.0E+00
LEAD	6.5E+00	2.4E-01	4.1E+00	1.0E-01
MANGANESE	9.5E-02	4.5E-02	6.0E-01	2.1E-01
NICKEL	3.1E-01	1.1E-01	2.2E+00	2.5E-01
SELENIUM	3.9E-02	2.0E-02	1.4E-01	8.6E-02
SILVER	2.1E-03	7.1E-05	1.3E-03	6.6E-05
VANADIUM	2.0E+00	4.2E-01	3.1E-01	1.6E-01
ZINC	4.1E-01	1.6E-01	6.5E-01	1.6E-01
Semivolatile Organics				
ACENAPHTHENE	8.5E-03	8.5E-04	4.6E-04	8.5E-05
ANTHRACENE	1.2E-02	1.2E-03	6.7E-04	1.2E-04
BENZO(A)ANTHRACENE	6.3E-02	6.3E-03	3.7E-01	5.9E-03
BENZO(A)PYRENE	8.5E-02	8.5E-03	4.9E-01	7.9E-03
BENZO(B)FLUORANTHENE	9.2E-02	9.2E-03	5.4E-01	8.6E-03
BENZO(G,H,I)PERYLENE	6.4E-02	6.4E-03	3.7E-01	6.0E-03
BENZO(K)FLUORANTHENE	3.4E-02	3.4E-03	2.0E-01	3.2E-03
CHRYSENE	7.2E-02	7.2E-03	4.2E-01	6.7E-03
FLUORANTHENE	8.5E-02	8.5E-03	4.6E-03	8.5E-04
FLUORENE	6.2E-03	6.2E-04	3.4E-04	6.3E-05
INDENO(1,2,3-CD)PYRENE	7.0E-02	7.0E-03	4.1E-01	6.5E-03
PHENANTHRENE	5.8E-02	5.8E-03	3.2E-03	5.8E-04
PYRENE	8.5E-02	8.5E-03	4.9E-01	7.9E-03

Cells are shaded if the value is greater than 1.0

NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
EEQ - Ecological Effects Quotient
NA = Value not able to be calculated

TABLE 7-9
TERRESTRIAL WILDLIFE MODEL NOAEL AND LOAEL EEQS
CONSERVATIVE EXPOSURE ASSUMPTIONS - >6 INCHES SEDIMENT
NMRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Piscivorous Receptors Receptors EEQs			
	Herring Gull		Raccoon	
	NOAEL	LOAEL	NOAEL	LOAEL
Metals				
ALUMINUM	1.8E+00	1.8E-01	1.9E+02	1.9E+01
ANTIMONY	NA	NA	4.0E+00	8.4E-02
ARSENIC	2.4E-01	1.2E-01	9.4E-01	2.2E-01
BARIUM	2.7E-03	1.4E-03	2.2E-03	1.4E-03
BERYLLIUM	NA	NA	4.4E-02	3.5E-02
CADMIUM	4.4E-02	1.0E-02	1.5E-01	1.7E-02
CHROMIUM	1.3E-01	2.2E-02	2.6E-01	1.1E-02
COBALT	9.7E-02	4.0E-02	1.8E-01	7.0E-02
COPPER	2.3E+00	2.7E-01	2.8E+00	2.0E-01
IRON	1.7E+01	1.7E+00	6.2E+01	6.2E+00
LEAD	3.4E+00	1.2E-01	2.1E+00	5.4E-02
MANGANESE	4.8E-01	2.3E-01	3.0E+00	1.1E+00
NICKEL	6.1E-01	2.2E-01	4.3E+00	5.0E-01
SELENIUM	3.2E-02	1.6E-02	1.2E-01	7.1E-02
SILVER	1.1E-03	3.8E-05	6.8E-04	3.5E-05
VANADIUM	2.0E+00	4.0E-01	2.9E-01	1.6E-01
ZINC	3.0E-01	1.2E-01	4.7E-01	1.2E-01
Semivolatile Organics				
ACENAPHTHENE	5.1E-03	5.1E-04	2.8E-04	5.1E-05
ANTHRACENE	7.2E-03	7.2E-04	4.0E-04	7.3E-05
BENZO(A)ANTHRACENE	3.8E-02	3.8E-03	2.2E-01	3.6E-03
BENZO(A)PYRENE	5.0E-02	5.0E-03	2.9E-01	4.7E-03
BENZO(B)FLUORANTHENE	4.9E-02	4.9E-03	2.9E-01	4.6E-03
BENZO(G,H,I)PERYLENE	4.1E-02	4.1E-03	2.4E-01	3.8E-03
BENZO(K)FLUORANTHENE	1.8E-02	1.8E-03	1.1E-01	1.7E-03
CHRYSENE	5.0E-02	5.0E-03	2.9E-01	4.7E-03
DIBENZO(A,H)ANTHRACENE	2.2E-02	2.2E-03	1.3E-01	2.0E-03
FLUORANTHENE	5.2E-02	5.2E-03	2.9E-03	5.3E-04
FLUORENE	3.0E-03	3.0E-04	1.6E-04	3.0E-05
INDENO(1,2,3-CD)PYRENE	4.5E-02	4.5E-03	2.6E-01	4.2E-03
PHENANTHRENE	3.3E-02	3.3E-03	1.8E-03	3.3E-04
PYRENE	5.0E-02	5.0E-03	2.9E-01	4.7E-03

Cells are shaded if the value is greater than 1.0

NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
EEQ - Ecological Effects Quotient
NA = Value not able to be calculated

TABLE 7-10

TERRESTRIAL WILDLIFE MODEL NOAEL AND LOAEL EEQS
LESS CONSERVATIVE EXPOSURE ASSUMPTIONS - SURFACE SOIL
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Soil Herbivorous Receptors				Soil Insectivorous Receptors			
	Meadow Vole		Bobwhite Quail		Short-Tailed Shrew		American Robin	
	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL
Explosives								
2,4-DINITROTOLUENE	2.8E-02	1.4E-02	3.10E-02	6.20E-03	1.9E-01	9.1E-02	2.4E-02	4.7E-03
NITROGLYCERIN	1.7E-01	1.6E-02	NA	NA	3.0E+00	2.8E-01	NA	NA
Inorganics								
ANTIMONY	9.8E-02	2.1E-03	NA	NA	3.4E+01	7.4E-01	NA	NA
ARSENIC	9.7E-02	2.2E-02	1.44E-01	7.13E-02	2.8E+00	6.4E-01	4.0E-01	2.0E-01
BARIUM	4.8E-03	3.0E-03	NA	NA	4.5E-02	2.8E-02	NA	NA
CADMIUM	3.4E-02	3.8E-03	3.08E-02	7.12E-03	7.3E+00	8.2E-01	6.8E-01	1.6E-01
CHROMIUM	3.1E-02	1.3E-03	8.53E-02	1.45E-02	3.1E+00	1.3E-01	5.9E-01	1.0E-01
COBALT	2.1E-03	8.0E-04	1.11E-02	4.62E-03	2.3E-01	8.7E-02	5.7E-02	2.4E-02
COPPER	1.8E-01	1.2E-02	6.63E-01	7.70E-02	2.1E+01	1.4E+00	5.8E+00	6.7E-01
IRON	4.6E-01	4.6E-02	1.49E+00	1.49E-01	1.8E+01	1.8E+00	4.3E+00	4.3E-01
LEAD	1.6E-01	4.0E-03	1.97E+00	7.20E-02	2.3E+01	5.8E-01	1.5E+01	5.3E-01
MANGANESE	4.3E-02	1.5E-02	3.03E-02	1.44E-02	5.1E-01	1.8E-01	5.2E-02	2.5E-02
MERCURY	8.1E-02	1.6E-02	6.93E-01	6.93E-02	1.2E+01	2.4E+00	1.1E+01	1.1E+00
SELENIUM	7.4E-02	1.6E-02	6.38E-02	2.26E-02	3.1E+00	6.6E-01	2.8E-01	9.8E-02
SILVER	2.1E-05	1.1E-06	2.89E-04	9.64E-06	2.9E-02	1.5E-03	1.5E-02	5.2E-04
VANADIUM	4.6E-03	2.0E-03	3.50E-01	7.08E-02	2.1E-01	9.0E-02	1.1E+00	2.2E-01
ZINC	5.1E-02	1.3E-02	1.01E-01	3.91E-02	4.9E+00	1.3E+00	1.0E+00	3.9E-01
Semivolatile Organics								
1,1-BIPHENYL	8.1E-05	1.6E-05	NA	NA	8.2E-03	1.6E-03	NA	NA
2-METHYLNAPHTHALENE	1.5E-04	2.8E-05	8.96E-03	8.96E-04	2.0E-02	3.8E-03	1.2E-01	1.2E-02
ACENAPHTHENE	2.3E-05	4.2E-06	5.76E-03	5.76E-04	4.5E-02	8.4E-03	2.7E-01	2.7E-02
ACENAPHTHYLENE	1.4E-04	2.6E-05	8.36E-03	8.36E-04	1.5E-01	2.7E-02	8.5E-01	8.5E-02
ANTHRACENE	6.0E-04	1.1E-04	3.62E-02	3.62E-03	8.0E-02	1.5E-02	4.7E-01	4.7E-02
BENZO(A)ANTHRACENE	4.1E-02	6.6E-04	4.97E-02	4.97E-03	3.4E+01	5.4E-01	1.9E+00	1.9E-01
BENZO(A)PYRENE	2.2E-01	3.5E-03	1.47E-01	1.47E-02	3.9E+01	6.2E-01	2.2E+00	2.2E-01
BENZO(B)FLUORANTHENE	5.2E-01	8.3E-03	2.94E-01	2.94E-02	7.3E+01	1.2E+00	4.0E+00	4.0E-01
BENZO(G,H,I)PERYLENE	1.6E+00	2.6E-02	8.44E-01	8.44E-02	1.1E+02	1.8E+00	6.1E+00	6.1E-01
BENZO(K)FLUORANTHENE	6.1E-02	9.8E-04	4.49E-02	4.49E-03	2.8E+01	4.5E-01	1.5E+00	1.5E-01
CARBAZOLE	3.7E-02	6.0E-04	2.19E-02	2.19E-03	2.6E+00	4.1E-02	1.5E-01	1.5E-02
CHRYSENE	4.2E-02	6.7E-04	5.05E-02	5.05E-03	4.9E+01	7.9E-01	2.7E+00	2.7E-01
DIBENZO(A,H)ANTHRACENE	5.4E-02	8.6E-04	3.54E-02	3.54E-03	1.5E+01	2.4E-01	8.4E-01	8.4E-02
DIBENZOFURAN	8.4E-03	1.3E-04	5.34E-03	5.34E-04	9.0E-01	1.4E-02	5.1E-02	5.1E-03
FLUORANTHENE	7.3E-03	1.3E-03	4.19E-01	4.19E-02	7.5E-01	1.4E-01	4.4E+00	4.4E-01
FLUORENE	1.2E-05	2.3E-06	2.68E-03	2.68E-04	1.3E-01	2.4E-02	7.6E-01	7.6E-02
INDENO(1,2,3-CD)PYRENE	1.3E-01	2.0E-03	8.64E-02	8.64E-03	5.1E+01	8.2E-01	2.8E+00	2.8E-01
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	8.5E-03	1.6E-03	4.44E-01	4.44E-02	5.3E-02	9.7E-03	3.1E-01	3.1E-02
PHENANTHRENE	3.7E-03	6.9E-04	2.27E-01	2.27E-02	3.7E-01	6.8E-02	2.2E+00	2.2E-01
PYRENE	2.0E+00	3.1E-02	1.02E+00	1.02E-01	8.1E+01	1.3E+00	4.5E+00	4.5E-01
Volatile Organics								
ACETONE	5.6E-04	1.1E-04	NA	NA	1.9E-03	3.7E-04	NA	NA
TETRACHLOROETHENE	4.6E-05	9.3E-06	NA	NA	6.6E-04	1.3E-04	NA	NA
Pesticides/PCBs								
4,4'-DDE	1.3E-03	3.4E-05	1.59E-03	1.33E-04	1.8E+00	4.8E-02	2.1E-01	1.7E-02
4,4'-DDT	1.5E-03	4.1E-05	1.93E-03	1.63E-04	1.7E+00	4.4E-02	1.9E-01	1.6E-02
ALPHA-BHC	5.4E-04	5.4E-05	2.63E-05	6.55E-06	2.1E-01	2.1E-02	9.4E-04	2.3E-04
ALPHA-CHLORDANE	2.4E-07	1.2E-07	1.91E-06	3.81E-07	5.6E-04	2.8E-04	2.1E-04	4.3E-05
AROCLOR-1260	4.4E-01	4.4E-02	1.13E+00	1.13E-01	3.4E+03	3.4E+02	2.3E+02	2.3E+01
DIELDRIN	5.2E-02	6.1E-04	2.67E-02	2.36E-03	1.4E+02	1.7E+00	5.2E+00	4.6E-01
ENDOSULFAN I	3.0E-05	3.0E-06	8.21E-07	8.21E-08	1.5E-03	1.5E-04	4.2E-06	4.2E-07
ENDOSULFAN II	1.3E-02	1.3E-03	3.56E-04	3.56E-05	6.6E-01	6.6E-02	1.8E-03	1.8E-04
ENDOSULFAN SULFATE	3.4E-04	3.4E-05	9.27E-06	9.27E-07	1.7E-02	1.7E-03	4.8E-05	4.8E-06
ENDRIN	3.1E-03	3.1E-04	6.71E-02	6.71E-03	2.1E+00	2.1E-01	3.3E+00	3.3E-01
ENDRIN ALDEHYDE	3.1E-05	3.1E-06	6.77E-04	6.77E-05	2.1E-02	2.1E-03	3.3E-02	3.3E-03
ENDRIN KETONE	4.3E-05	4.3E-06	9.34E-04	9.34E-05	2.9E-02	2.9E-03	4.5E-02	4.5E-03
GAMMA-BHC (LINDANE)	3.1E-06	3.1E-07	2.32E-05	2.32E-06	9.5E-04	9.5E-05	6.7E-04	6.7E-05
GAMMA-CHLORDANE	1.8E-06	9.1E-07	1.44E-05	2.87E-06	4.2E-03	2.1E-03	1.6E-03	3.2E-04
HEPTACHLOR EPOXIDE	1.1E-05	1.1E-06	NA	NA	1.5E-02	1.5E-03	NA	NA
TOTAL DDD/DDE/DDT	3.2E-03	8.3E-05	4.15E-03	3.49E-04	3.4E+00	9.0E-02	3.9E-01	3.3E-02
Petroleum Hydrocarbons								
DIESEL RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA

Cells are shaded if the value is greater than 1.0

NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
EEQ - Ecological Effects Quotient
NA = Value not able to be calculated

TABLE 7-11
TERRESTRIAL WILDLIFE MODEL NOAEL AND LOAEL EEQS
LESS CONSERVATIVE EXPOSURE ASSUMPTIONS - SEDIMENT 0-6 INCHES
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Piscivorous Receptors Receptors EEQs			
	Herring Gull		Raccoon	
	NOAEL	LOAEL	NOAEL	LOAEL
Metals				
ANTIMONY	NA	NA	3.9E-01	8.4E-03
ARSENIC	1.2E-02	6.1E-03	3.0E-02	6.8E-03
BARIUM	1.4E-02	6.9E-03	5.9E-03	3.7E-03
CADMIUM	2.4E-03	5.6E-04	5.0E-03	5.6E-04
CHROMIUM	2.3E-02	3.9E-03	2.9E-02	1.2E-03
COBALT	1.8E-02	7.6E-03	2.0E-02	7.9E-03
COPPER	7.9E-01	9.2E-02	5.9E-01	4.2E-02
IRON	5.1E+00	5.1E-01	1.1E+01	1.1E+00
LEAD	3.9E-01	1.4E-02	1.5E-01	3.9E-03
MANGANESE	3.2E-02	1.5E-02	1.2E-01	4.2E-02
NICKEL	3.0E-02	1.1E-02	1.3E-01	1.5E-02
SELENIUM	1.2E-02	6.2E-03	2.7E-02	1.6E-02
SILVER	1.3E-03	4.4E-05	4.7E-04	2.4E-05
ZINC	4.8E-02	1.8E-02	4.5E-02	1.1E-02
Semivolatile Organics				
ACENAPHTHENE	7.2E-03	7.2E-04	2.3E-04	4.3E-05
ANTHRACENE	7.8E-03	7.8E-04	2.5E-04	4.7E-05
BENZO(A)ANTHRACENE	2.3E-02	2.3E-03	8.0E-02	1.3E-03
BENZO(A)PYRENE	1.8E-02	1.8E-03	6.1E-02	9.8E-04
BENZO(B)FLUORANTHENE	1.8E-02	1.8E-03	6.2E-02	9.9E-04
BENZO(G,H,I)PERYLENE	2.7E-02	2.7E-03	9.2E-02	1.5E-03
BENZO(K)FLUORANTHENE	9.9E-03	9.9E-04	3.4E-02	5.5E-04
CHRYSENE	2.7E-02	2.7E-03	9.2E-02	1.5E-03
FLUORANTHENE	3.1E-02	3.1E-03	1.0E-03	1.9E-04
FLUORENE	5.3E-03	5.3E-04	1.7E-04	3.2E-05
INDENO(1,2,3-CD)PYRENE	4.0E-02	4.0E-03	1.4E-01	2.2E-03
PHENANTHRENE	2.1E-02	2.1E-03	6.7E-04	1.2E-04
PYRENE	3.1E-02	3.1E-03	1.1E-01	1.7E-03

Cells are shaded if the value is greater than 1.0

NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
EEQ - Ecological Effects Quotient
NA = Value not able to be calculated

TABLE 7-12
TERRESTRIAL WILDLIFE MODEL NOAEL AND LOAEL EEQS
LESS CONSERVATIVE EXPOSURE ASSUMPTIONS - >6 INCHES SEDIMENT
NMRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Piscivorous Receptors Receptors EEQs			
	Herring Gull		Raccoon	
	NOAEL	LOAEL	NOAEL	LOAEL
Metals				
ANTIMONY	NA	NA	5.8E-01	1.2E-02
ARSENIC	2.8E-02	1.4E-02	6.8E-02	1.5E-02
BARIUM	1.5E-02	7.4E-03	6.4E-03	4.0E-03
CADMIUM	2.4E-03	5.6E-04	5.0E-03	5.6E-04
CHROMIUM	2.3E-02	4.0E-03	2.9E-02	1.2E-03
COBALT	4.1E-02	1.7E-02	4.5E-02	1.8E-02
COPPER	3.2E-01	3.7E-02	2.4E-01	1.7E-02
IRON	8.5E+00	8.5E-01	1.8E+01	1.8E+00
LEAD	3.4E-01	1.2E-02	1.4E-01	3.4E-03
MANGANESE	1.6E-01	7.7E-02	6.0E-01	2.1E-01
NICKEL	7.3E-02	2.6E-02	3.1E-01	3.6E-02
SELENIUM	1.9E-02	9.6E-03	4.1E-02	2.5E-02
SILVER	9.6E-04	3.2E-05	3.4E-04	1.7E-05
ZINC	4.2E-02	1.6E-02	4.0E-02	1.0E-02
Semivolatile Organics				
ACENAPHTHENE	4.2E-03	4.2E-04	1.4E-04	2.5E-05
ANTHRACENE	6.1E-03	6.1E-04	2.0E-04	3.6E-05
BENZO(A)ANTHRACENE	1.5E-02	1.5E-03	5.2E-02	8.3E-04
BENZO(A)PYRENE	1.9E-02	1.9E-03	6.5E-02	1.0E-03
BENZO(B)FLUORANTHENE	1.9E-02	1.9E-03	6.7E-02	1.1E-03
BENZO(G,H,I)PERYLENE	1.8E-02	1.8E-03	6.2E-02	9.9E-04
BENZO(K)FLUORANTHENE	1.0E-02	1.0E-03	3.6E-02	5.7E-04
CHRYSENE	1.7E-02	1.7E-03	6.0E-02	9.6E-04
DIBENZO(A,H)ANTHRACENE	9.7E-03	9.7E-04	3.3E-02	5.4E-04
FLUORANTHENE	2.0E-02	2.0E-03	6.5E-04	1.2E-04
FLUORENE	2.6E-03	2.6E-04	8.3E-05	1.5E-05
INDENO(1,2,3-CD)PYRENE	1.8E-02	1.8E-03	6.3E-02	1.0E-03
PHENANTHRENE	2.2E-02	2.2E-03	7.2E-04	1.3E-04
PYRENE	2.0E-02	2.0E-03	6.8E-02	1.1E-03

Cells are shaded if the value is greater than 1.0

NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
EEQ - Ecological Effects Quotient
NA = Value not able to be calculated

FIGURES

GRAPHIC SCALE

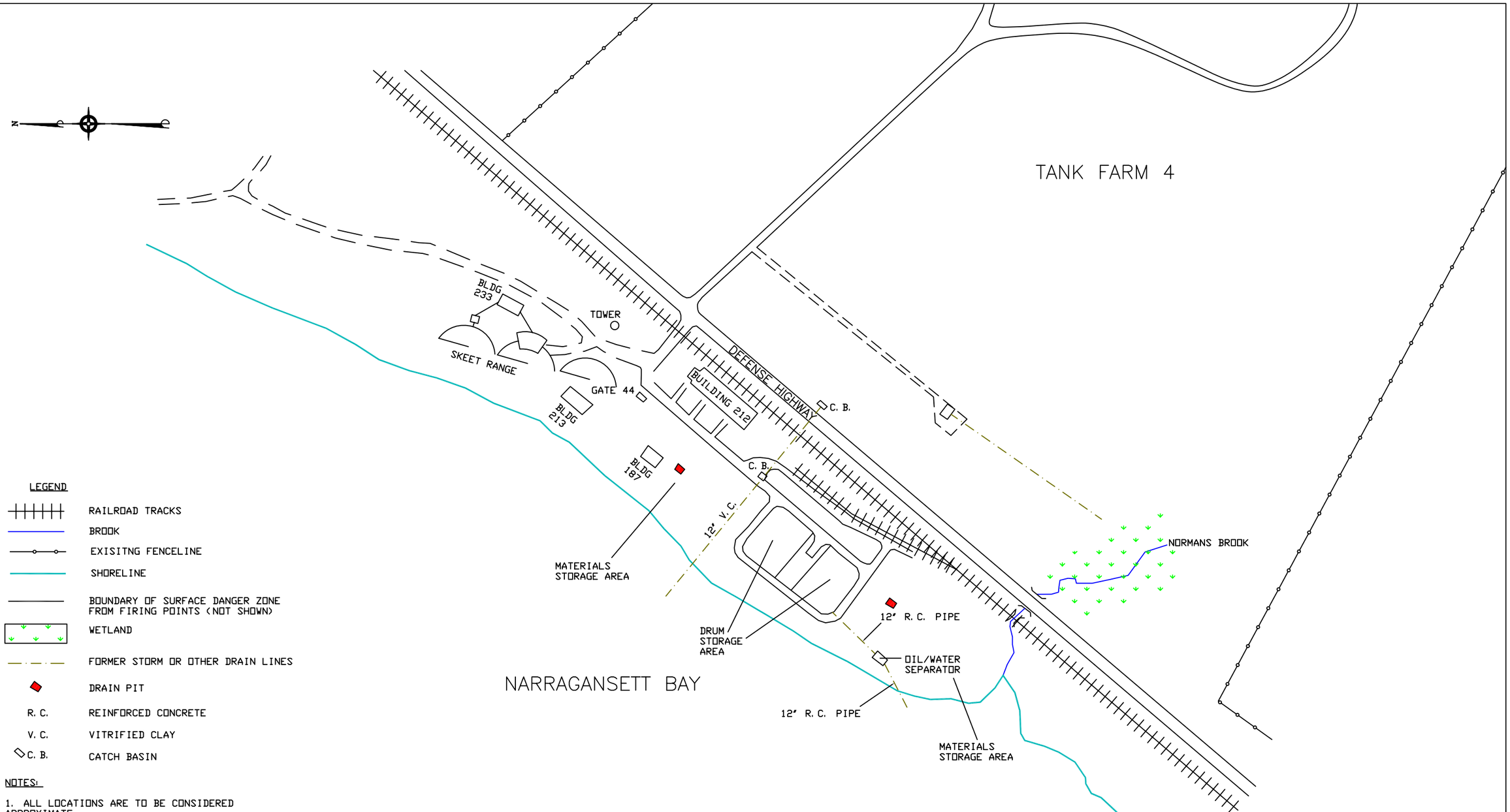
0' 1 MILE 2 MILES

NOTES:

1. BASE MAP IS A PORTION OF THE USGS PRUDENCE ISLAND QUADRANGLE MAP (7.5 X 15 MINUTES), DATED: 1955 (PHOTOREVISED 1970 & 1975).
2. ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.

SITE LOCUS	FIGURE 1–1
SITE INVESTIGATION REPORT	TETRA TECH NUS, INC.
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, RI	55 Jonspin Road Wilmington, MA 01887 (978)658–7899

DRAWN BY:	D.W. MACDOUGALL	REV.:	0
CHECKED BY:	S. PARKER	DATE:	OCTOBER 2, 2009
SCALE:	AS SHOWN	ACAD NAME:	\00870\0510\CP_LOCUS.DWG



LEGEND

	RAILROAD TRACKS
	BROOK
	EXISITNG FENCELINE
	SHORELINE
	BOUNDARY OF SURFACE DANGER ZONE FROM FIRING POINTS (NOT SHOWN)
	WETLAND
	FORMER STORM OR OTHER DRAIN LINES
	DRAIN PIT
R. C.	REINFORCED CONCRETE
V. C.	VITRIFIED CLAY
C. B.	CATCH BASIN

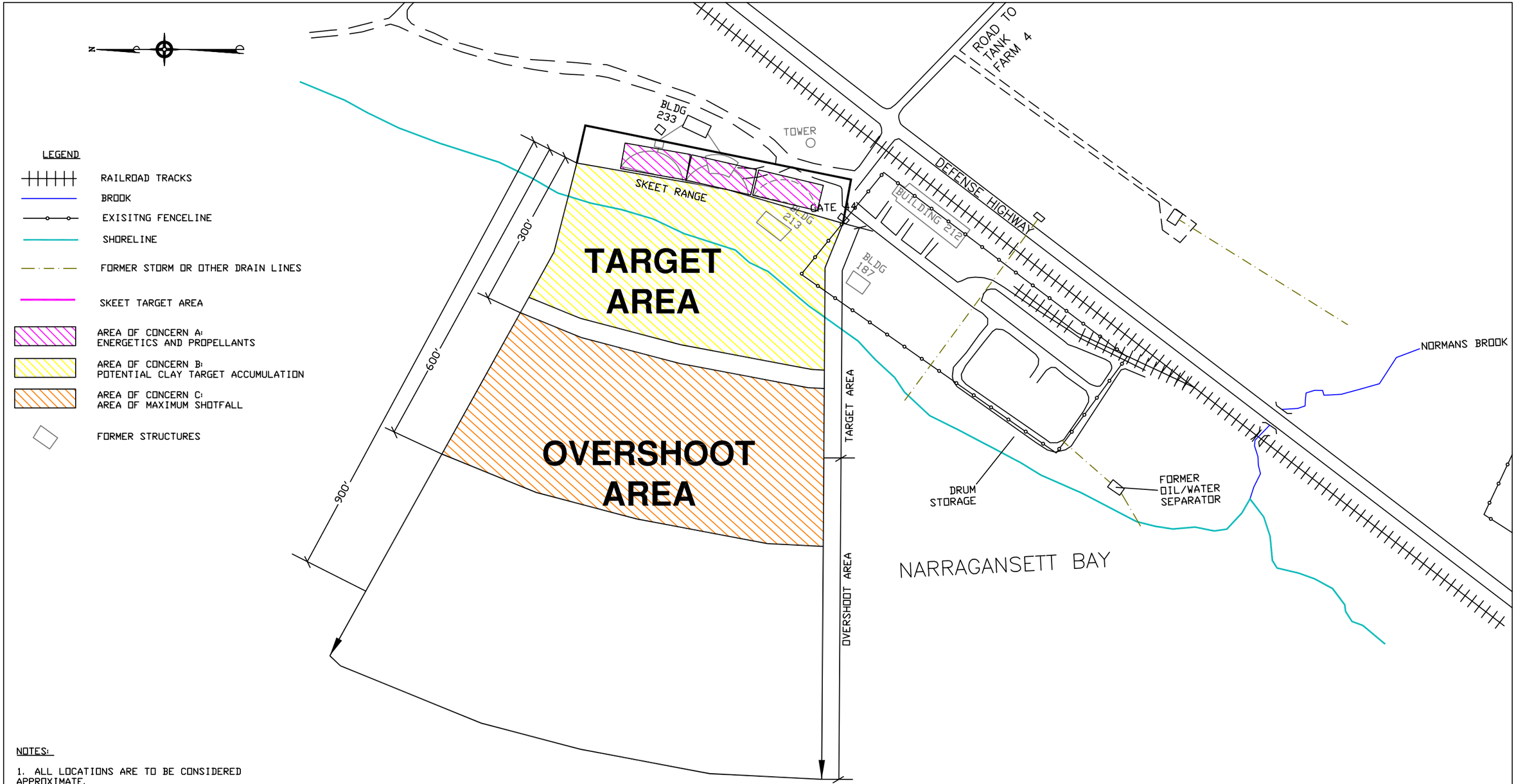
NOTES:

1. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.
2. PLAN NOT TO BE USED FOR DESIGN.
3. TOPOGRAPHIC INFORMATION TAKEN FROM THE FOLLOWING: WASTE AREA MUNITIONS STUDY, NAVSTA NEWPORT, RHODE ISLAND, MALCOM PIRNIE, OCTOBER 2005 AND TELEPHONE SYSTEM, CARRYING PLANT SYSTEM, MELVILLE SOUTH (1 OF 4), UTILITY ENGINEERS, INC.

GRAPHIC SCALE

0' 200' 400'

HISTORIC SITE FEATURES			FIGURE 1-2
SITE INVESTIGATION REPORT			TETRA TECH NUS, INC.
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, RHODE ISLAND			55 Jonspin Road Wilmington, MA 01887 (978)658-7899
DRAWN BY: D.W. MACDOUGALL	REV.: 0		
CHECKED BY: T. CAMPBELL	DATE: OCTOBER 2, 2009		
SCALE: AS NOTED	FILE NO.: \00870\0510\CP_HIST_FEATURES.DWG		



NOTES:

1. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.

2. PLAN NOT TO BE USED FOR DESIGN.

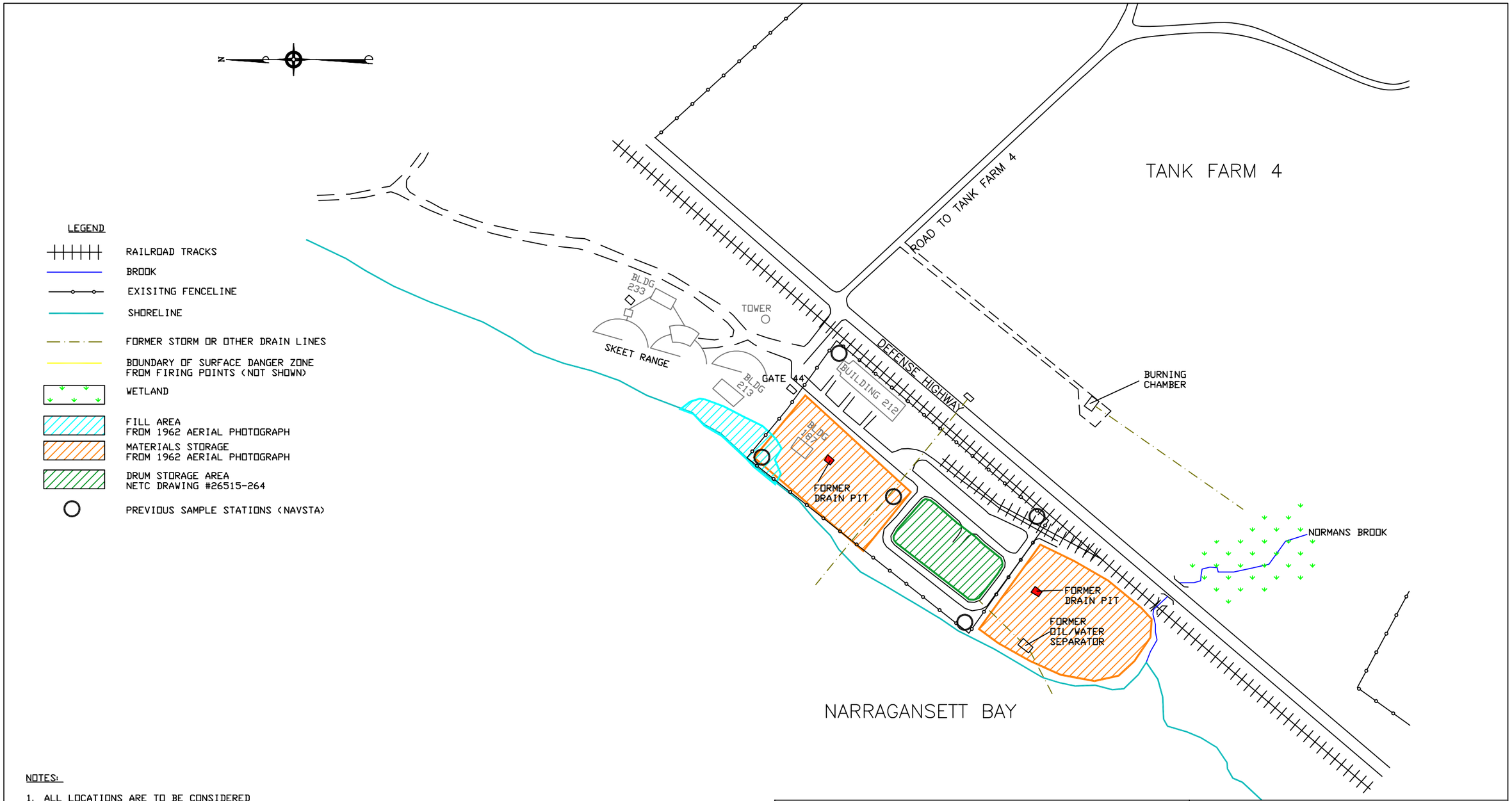
3. TOPOGRAPHIC INFORMATION TAKEN FROM THE FOLLOWING: WASTE AREA MUNITIONS STUDY, NAVSTA NEWPORT, RHODE ISLAND, MALCOM PIRNIE, OCTOBER 2005 AND TELEPHONE SYSTEM, CARRYING PLANT SYSTEM, MELVILLE SOUTH (1 OF 4), UTILITY ENGINEERS, INC.

4. SKEET RANGE ZONES AND DISTANCES TAKEN FROM FIG 3 - OTIS FISH AND GAME CLUB SKEET AND TRQAP RANGE, CAMP EDWARDS, MA, URS, INC.

GRAPHIC SCALE

0' 200' 400'

FIRING FAN			FIGURE 1-3
SITE INVESTIGATION REPORT			TETRA TECH NUS, INC.
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, RHODE ISLAND			55 Jonspin Road Wilmington, MA 01887 (978)658-7899
DRAWN BY:	D.W. MACDOUGALL	REV.: 0	
CHECKED BY:	S. PARKER	DATE: OCTOBER 2, 2009	
SCALE:	AS NOTED	FILE NO.: \00870\0510\CP_FIRING_FAN.DWG	



NOTES:

1. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.

2. PLAN NOT TO BE USED FOR DESIGN.

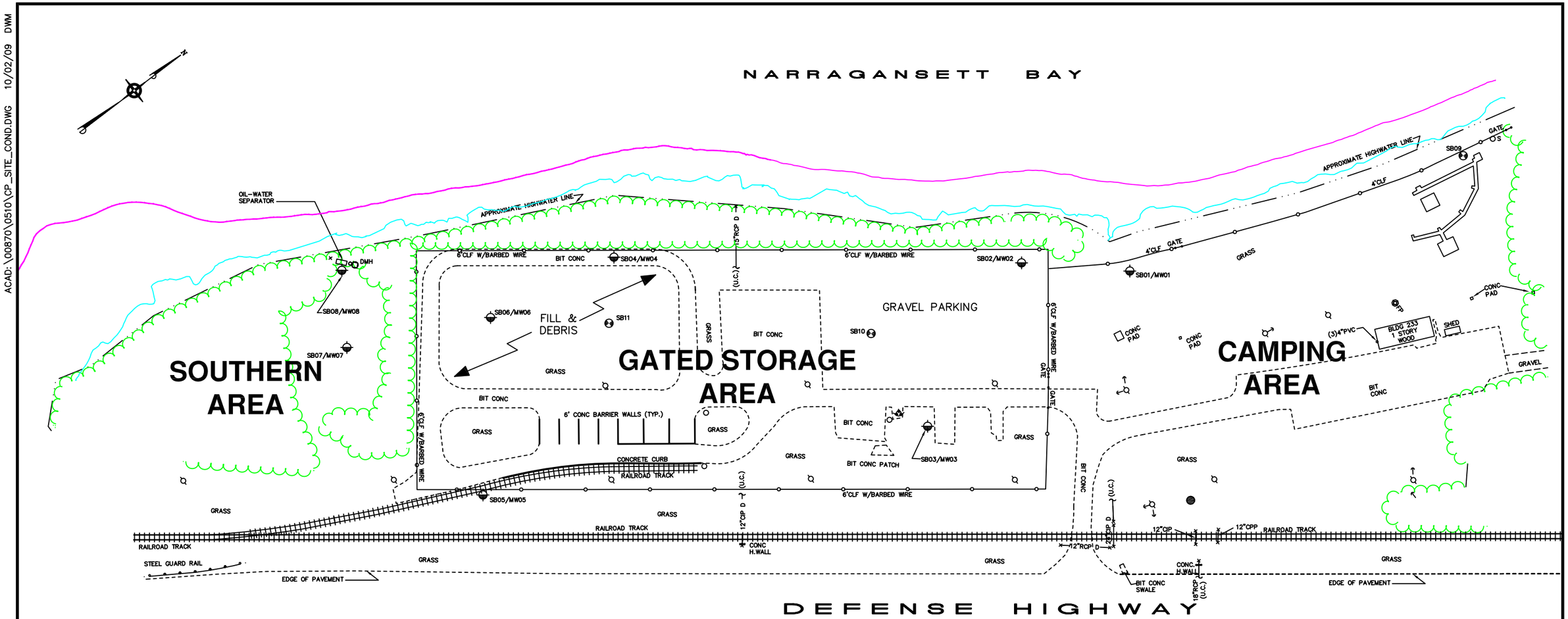
3. TOPOGRAPHIC INFORMATION TAKEN FROM THE FOLLOWING: WASTE AREA MUNITIONS STUDY, NAVSTA NEWPORT, RHODE ISLAND, MALCOM PIRNIE, OCTOBER 2005 AND TELEPHONE SYSTEM, CARRYING PLANT SYSTEM, MELVILLE SOUTH (1 OF 4), UTILITY ENGINEERS, INC.

GRAPHIC SCALE

0' 200' 400'

FILL AREAS			FIGURE 1-4
SITE INVESTIGATION REPORT			
MRP SITE 1, CARR POINT, NAVSTA NEWPORT, RHODE ISLAND			TETRA TECH NUS, INC.
DRAWN BY:	D.W. MACDOUGALL	REV.: 0	55 Jonspin Road Wilmington, MA 01887 (978)658-7899
CHECKED BY:	T. CAMPBELL	DATE: OCTOBER 2, 2009	
SCALE:	AS NOTED	FILE NO.: \00870\0510\CP_FILL_AREAS.DWG	

ACAD: \00870\0510\CP_SITE_COND.DWG 10/02/09 DWM



NOTES

1. COORDINATES, IN U.S. SURVEY FEET, ARE IN THE RHODE ISLAND COORDINATE SYSTEM, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983, CORS ADJUSTMENT (NAD 83/CORS), AS DETERMINED BY SMC'S G.P.S. OBSERVATIONS MADE JUNE 17, 2009 USING THE KeyNetGPS VIRTUAL REFERENCE SYSTEM (VRS).
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3. NO SUBSURFACE UTILITY LINES HAVE BEEN COMPILED FOR THIS PLAN, READILY VISIBLE DRAIN LINES WERE LOCATED AND SHOWN ON THIS PLAN. SMC ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES NOT SHOWN.
4. BEFORE DESIGNING FUTURE CONNECTIONS, THE APPROPRIATE UTILITIES MUST BE CONSULTED.
5. BEFORE CONSTRUCTION, ALL UTILITIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED (SEE RHODE ISLAND GENERAL LAWS, SECTION 39-1.2). CALL "DIG SAFE" 1-888-DIG-SAFE (888-344-7233).
6. NO PORTSMOUTH, RI, MAP AND PARCEL NUMBERS WERE OBTAINED FOR THIS SURVEY.

LEGEND

△	TRAVERSE STATION		APPROXIMATE LOW WATER LINE
•	PK. REBAR, NAIL, SPIKE		APPROXIMATE HIGH WATER LINE MARKED VIA GPS JUNE 2009
	GUARDRAIL		APPROXIMATE HIGH WATER LINE ESTIMATED BY SURVEYOR
	TREE LINE	RCP	REINFORCED CONCRETE PIPE
	CHAIN LINK FENCE	PVC	POLYVINYLCHLORIDE PIPE
CLF	CHAIN LINK FENCE	CPP	CORRUGATED PLASTIC PIPE
	CURBING(TYPE)	CIP	CAST IRON PIPE
BIT CONC	BITUMINOUS CONCRETE	MP	MARKER POST
GRAN	GRANITE	WP	WOOD POST
		GP	GUARD POST
←	GUY WIRE	H.WALL	HEAD WALL
-O-	UTILITY POLE OR LIGHT POLE	(TYP.)	TYPICAL
		FP	FLAGPOLE
DMH	DRAIN MAN HOLE	(U.C.)	UNDETERMINED CONNECTION
	HYD	SB#	BOREHOLE
R=	RIM	MW	MONITORING WELL
I=	INVERT		

GRAPHIC SCALE

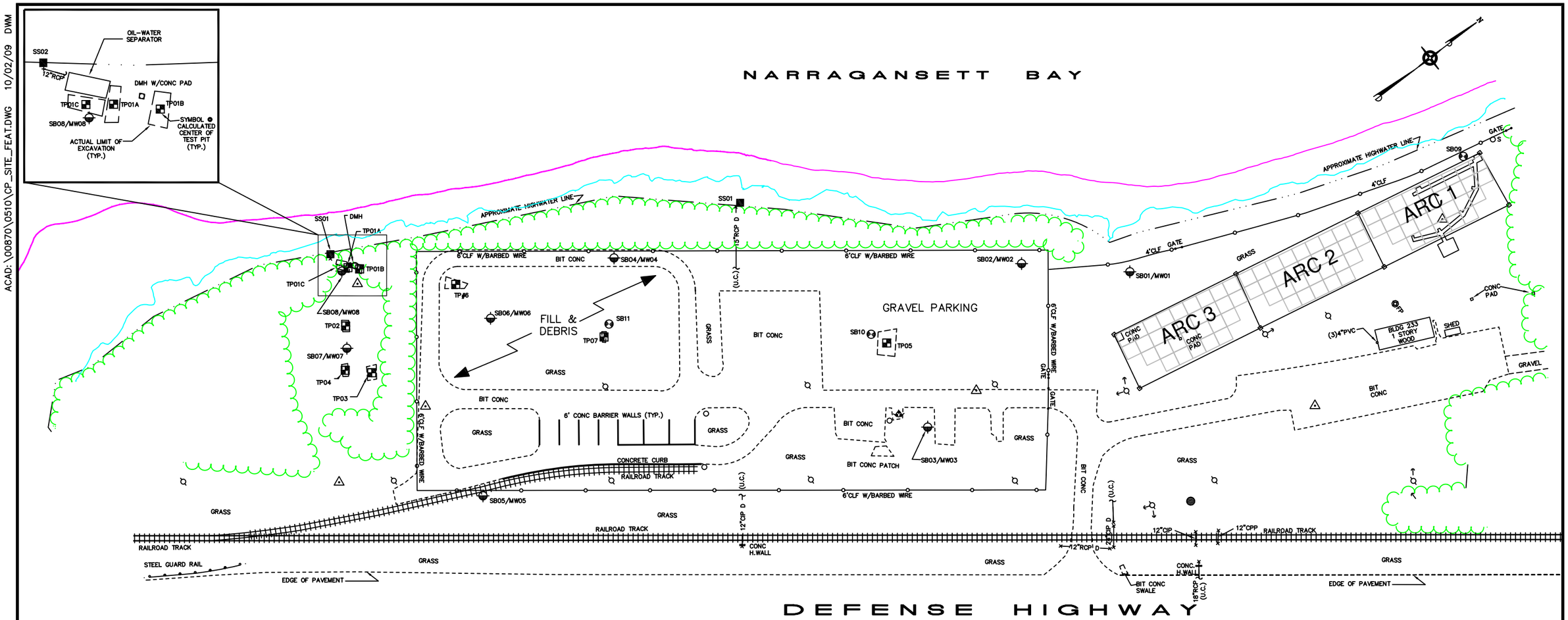
0' 100' 200'

TETRA TECH NUS, INC.

GENERAL SITE CONDITIONS
SITE INVESTIGATION REPORT
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, RHODE ISLAND

FILE	SCALE
\..\CP_SITE_COND.DWG	AS NOTED
FIGURE NUMBER 2-1	REV 0 / DATE 10/02/09

ACAD: \00870\0510\CP_SITE_FEAT.DWG 10/02/09 DWM



NOTES

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3. NO SUBSURFACE UTILITY LINES HAVE BEEN COMPILED FOR THIS PLAN, READILY VISIBLE DRAIN LINES WERE LOCATED AND SHOWN ON THIS PLAN. SMC ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES NOT SHOWN.
4. BEFORE DESIGNING FUTURE CONNECTIONS, THE APPROPRIATE UTILITIES MUST BE CONSULTED.
5. BEFORE CONSTRUCTION, ALL UTILITIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED (SEE RHODE ISLAND GENERAL LAWS, SECTION 39-1.2). CALL "DIG SAFE" 1-888-DIG-SAFE (888-344-7233).
6. NO PORTSMOUTH, RI, MAP AND PARCEL NUMBERS WERE OBTAINED FOR THIS SURVEY.

LEGEND

△	TRAVERSE STATION
•	PK. REBAR, NAIL, SPIKE
	GUARDRAIL
	TREE LINE
	CHAIN LINK FENCE
CLF	CHAIN LINK FENCE
	CURBING(TYPE)
BIT CONC	BITUMINOUS CONCRETE
GRAN	GRANITE
←	GUY WIRE
-O-	UTILITY POLE OR LIGHT POLE
○ DMH	DRAIN MAN HOLE
HYD	HYD
R=	RIM
I=	INVERT

	APPROXIMATE LOW WATER LINE
	APPROXIMATE HIGH WATER LINE MARKED VIA GPS JUNE 2009
	APPROXIMATE HIGH WATER LINE ESTIMATED BY SURVEYOR
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYLCHLORIDE PIPE
CPP	CORRUGATED PLASTIC PIPE
CIP	CAST IRON PIPE
MP	MARKER POST
WP	WOOD POST
GP	GUARD POST
H.WALL	HEAD WALL
(TYP.)	TYPICAL
FP	FLAGPOLE
(U.C.)	UNDETERMINED CONNECTION
SB#	BOREHOLE
TP#	TEST PIT
MW	MONITORING WELL
SS	SOIL SAMPLE AT OUTFALL

GRAPHIC SCALE

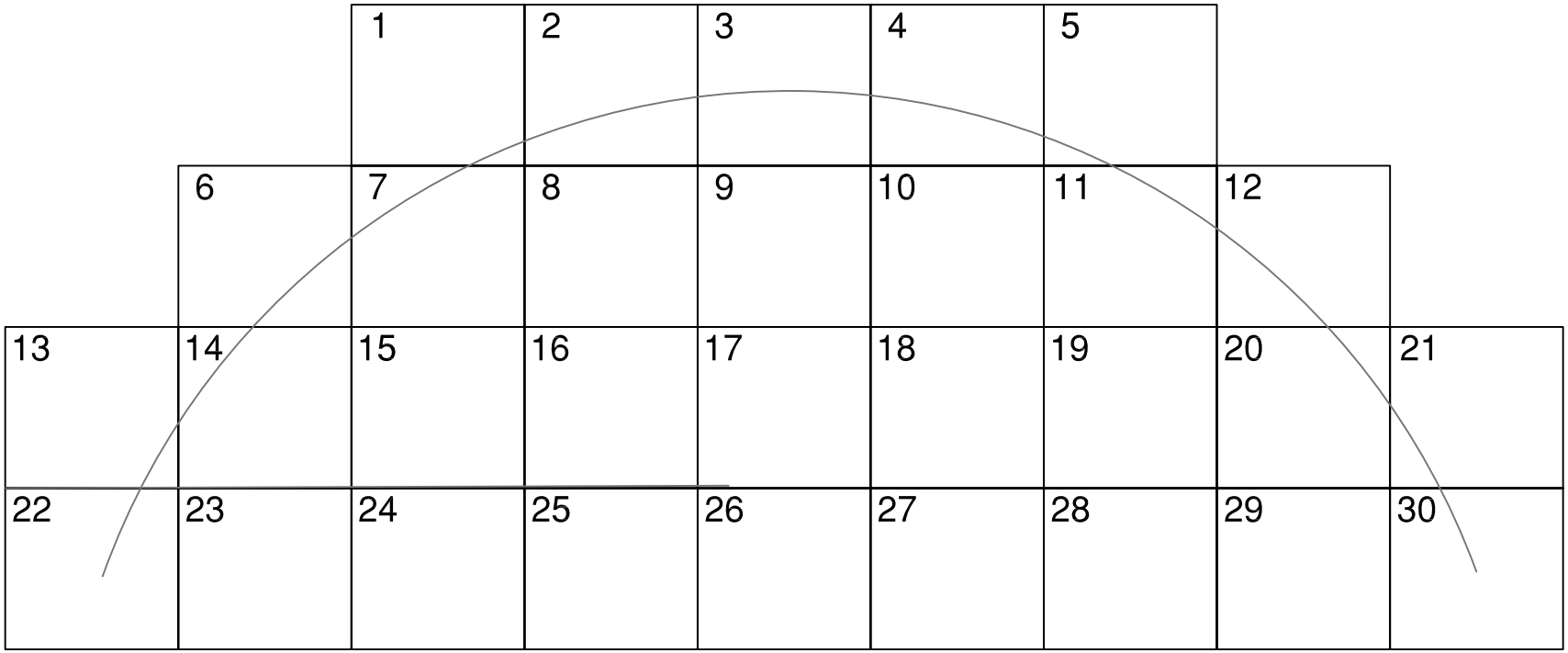
0' 100' 200'

TETRA TECH NUS, INC.

EXISTING SITE FEATURES
AND ON-SHORE SAMPLE STATIONS
SITE INVESTIGATION REPORT
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, RHODE ISLAND

FILE	SCALE
\..\CP_SITE_FEAT.DWG	AS NOTED
FIGURE NUMBER	**REV** / **DATE**
3-1	0 / 10/02/09

ACAD: \00870\0510\CP_GRID.DWG 09/03/09 DWM



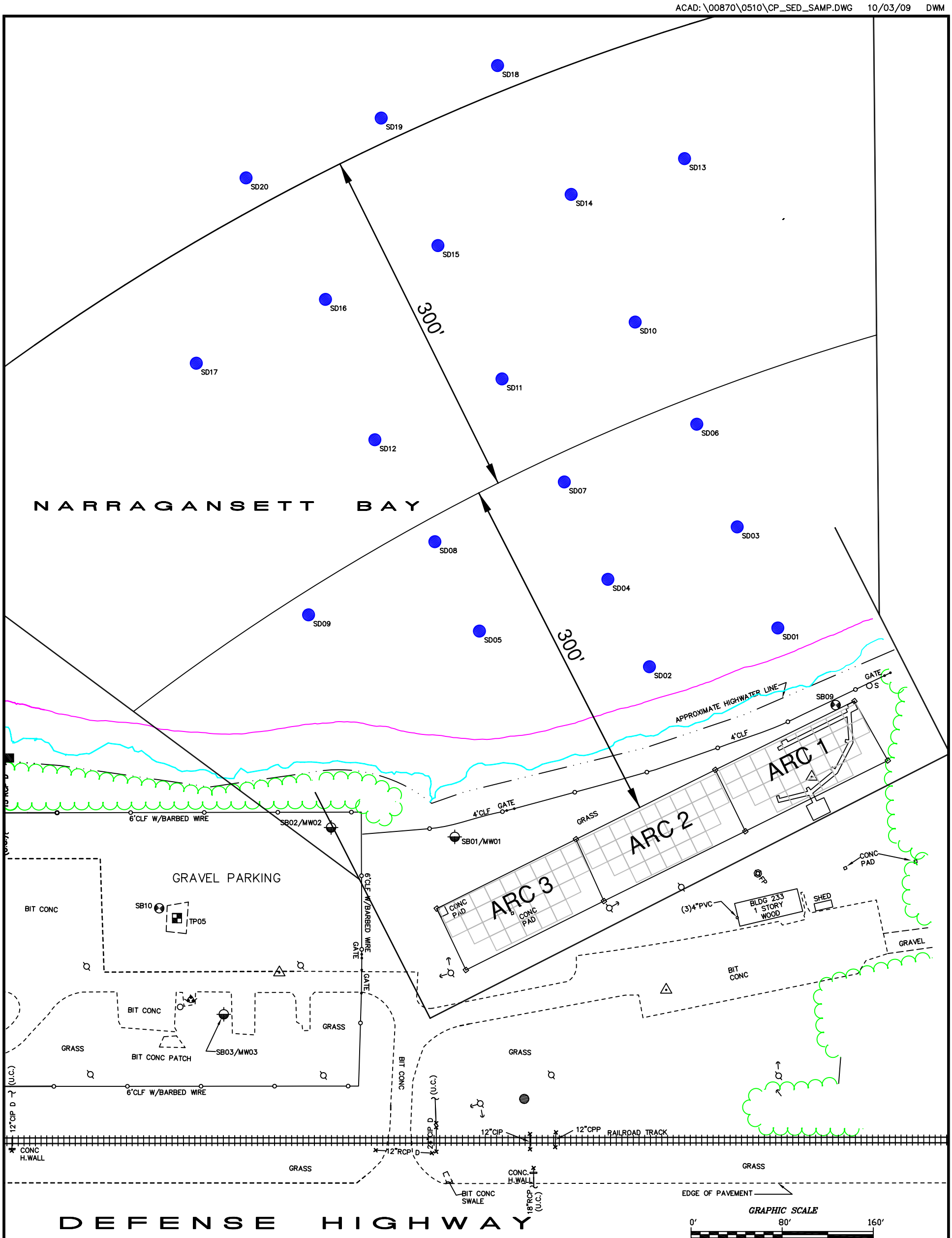
0′ 20′ 40′

TETRA TECH NUS, INC.

TYPICAL SAMPLING GRID LAYOUT AT SHOOTING ARC
SITE INVESTIGATION REPORT
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, RHODE ISLAND

SCALE	AS NOTED
FILE	\..\CP_GRID.DWG
REV	0
DATE	09/03/09
FIGURE NUMBER	3-2

ACAD:\00870\0510\CP_SED_SAMP.DWG 10/03/09 DWM



NOTES

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LEGEND

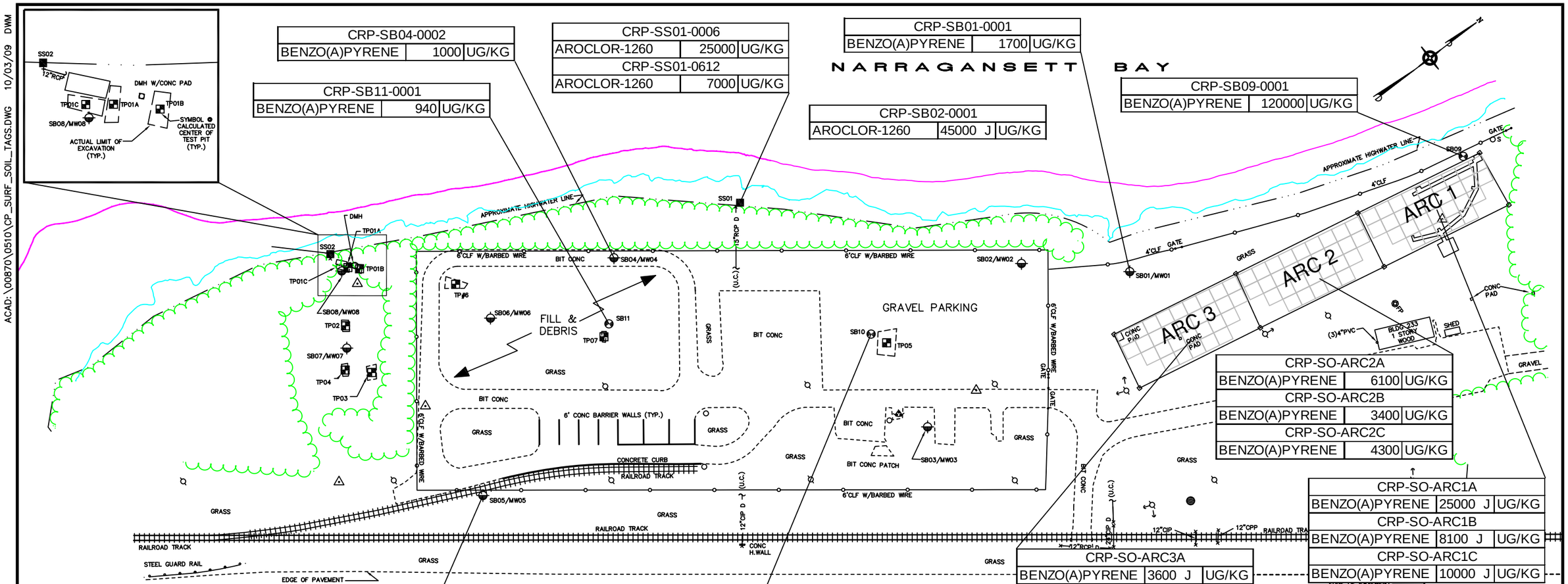
△	TRAVERSE STATION
•	PK. REBAR, NAIL, SPIKE
	GUARDRAIL
	TREE LINE
	CHAIN LINK FENCE
CLF	CHAIN LINK FENCE
	CURBING(TYPE)
BIT CONC	BITUMINOUS CONCRETE
GRAN	GRANITE
←	GUY WIRE
	UTILITY POLE OR LIGHT POLE
DMH	DRAIN MAN HOLE
	HYD
R=	RIM
I=	INVERT
(U.C.)	UNDETERMINED CONNECTION
	APPROXIMATE LOW WATER LINE
	APPROXIMATE HIGH WATER LINE MARKED VIA GPS JUNE 2009
	APPROXIMATE HIGH WATER LINE ESTIMATED BY SURVEYOR
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYLCHLORIDE PIPE
CPP	CORRUGATED PLASTIC PIPE
CIP	CAST IRON PIPE
MP	MARKER POST
WP	WOOD POST
GP	GUARD POST
H.WALL	HEAD WALL
(TYP.)	TYPICAL
FP	FLAGPOLE
SB#	BOREHOLE
TP#	TEST PIT
MW	MONITORING WELL
SS	SOIL SAMPLE AT OUTFALL
	SEDIMENT SAMPLE

TETRA TECH NUS, INC.

SEDIMENT SAMPLE STATIONS
SITE INVESTIGATION REPORT
MRP SITE 1, CARR POINT
PORTSMOUTH, RHODE ISLAND

FILE	SCALE
\..\CP_SED_SAMP.DWG	AS NOTED
FIGURE NUMBER 3-3	REV 0 / DATE 10/03/09

ACAD: \00870\0510\CP_SURF_SOIL_TAGS.DWG 10/03/09 DWM



CRP-SB04-0002		
BENZO(A)PYRENE	1000	UG/KG

CRP-SB11-0001		
BENZO(A)PYRENE	940	UG/KG

CRP-SS01-0006		
AROCLOR-1260	25000	UG/KG
CRP-SS01-0612		
AROCLOR-1260	7000	UG/KG

CRP-SB01-0001		
BENZO(A)PYRENE	1700	UG/KG

CRP-SB02-0001		
AROCLOR-1260	45000 J	UG/KG

CRP-SB09-0001		
BENZO(A)PYRENE	120000	UG/KG

CRP-SO-ARC2A		
BENZO(A)PYRENE	6100	UG/KG
CRP-SO-ARC2B		
BENZO(A)PYRENE	3400	UG/KG
CRP-SO-ARC2C		
BENZO(A)PYRENE	4300	UG/KG

CRP-SO-ARC1A		
BENZO(A)PYRENE	25000 J	UG/KG
CRP-SO-ARC1B		
BENZO(A)PYRENE	8100 J	UG/KG
CRP-SO-ARC1C		
BENZO(A)PYRENE	10000 J	UG/KG

CRP-SO-ARC3A		
BENZO(A)PYRENE	3600 J	UG/KG
CRP-SO-ARC3B		
BENZO(A)PYRENE	2100 J	UG/KG
CRP-SO-ARC3C		
BENZO(A)PYRENE	1300 J	UG/KG

CRP-SB05-0001		
BENZO(A)PYRENE	13000 J	UG/KG

CRP-SB10-0001		
AROCLOR-1260	1700	UG/KG
BENZO(A)PYRENE	74 J	UG/KG

NOTES

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6. NO PORTSMOUTH, RI, MAP AND PARCEL NUMBERS WERE OBTAINED FOR THIS SURVEY.

LEGEND

	TRAVERSE STATION
	PK. REBAR, NAIL, SPIKE
	GUARDRAIL
	TREE LINE
	CHAIN LINK FENCE
CLF	CHAIN LINK FENCE
	CURBING(TYPE)
BIT CONC	BITUMINOUS CONCRETE
GRAN	GRANITE
	GUY WIRE
	UTILITY POLE OR LIGHT POLE
DMH	DRAIN MAN HOLE
	HYD
R=	RIM
I=	INVERT

	APPROXIMATE LOW WATER LINE
	APPROXIMATE HIGH WATER LINE MARKED VIA GPS JUNE 2009
	APPROXIMATE HIGH WATER LINE ESTIMATED BY SURVEYOR
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYLCHLORIDE PIPE
CPP	CORRUGATED PLASTIC PIPE
CIP	CAST IRON PIPE
MP	MARKER POST
WP	WOOD POST
GP	GUARD POST
H.WALL	HEAD WALL
(TYP.)	TYPICAL
FP	FLAGPOLE
(U.C.)	UNDETERMINED CONNECTION
SB#	BOREHOLE
TP#	TEST PIT
MW	MONITORING WELL
SS	SOIL SAMPLE AT OUTFALL

GRAPHIC SCALE

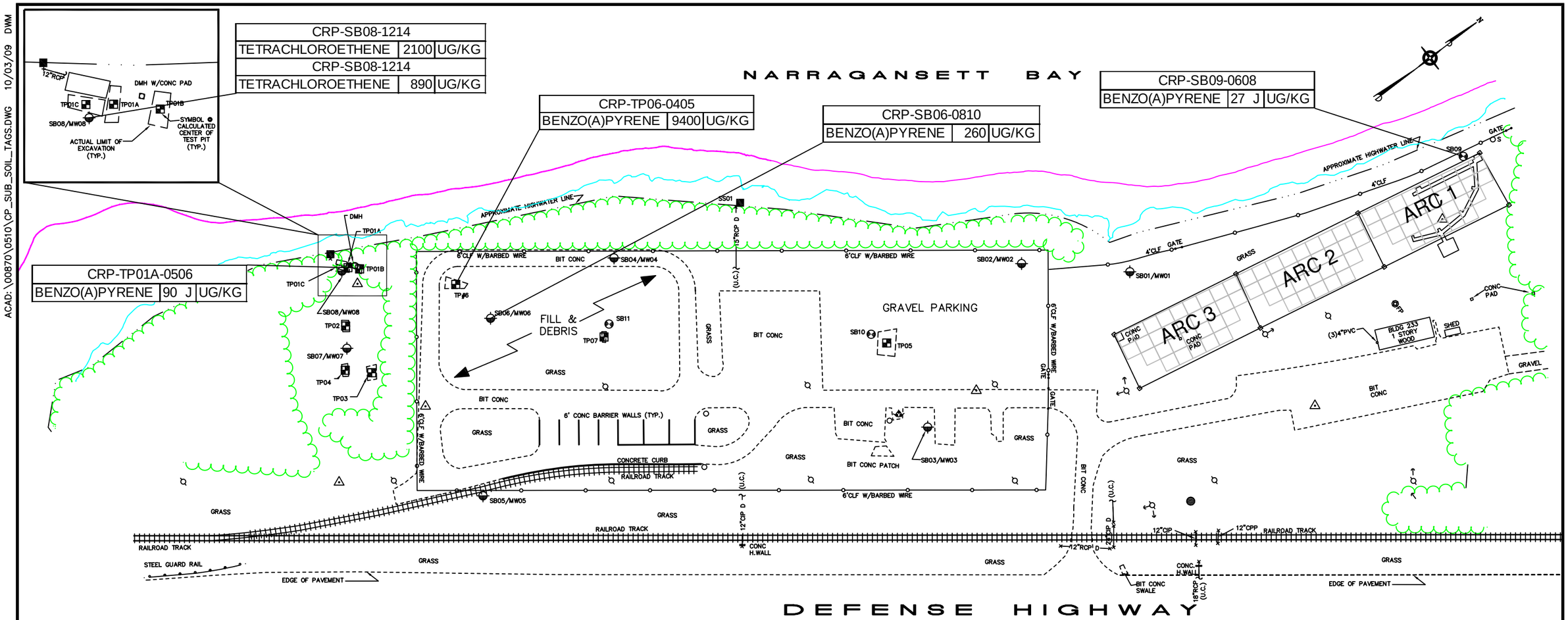
0' 100' 200'

TETRA TECH NUS, INC.

REPRESENTATIVE ANALYTES EXCEEDING PALs IN SURFACE SOIL
SITE INVESTIGATION REPORT
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, RHODE ISLAND

FILE	SCALE
\..\CP_SURF_SOIL_TAGS.DWG	AS NOTED
FIGURE NUMBER 4-1	REV 0 / DATE 10/03/09

ACAD: \00870\0510\CP_SUB_SOIL_TAGS.DWG 10/03/09 DWM



NOTES

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LEGEND

	TRAVERSE STATION
	PK. REBAR, NAIL, SPIKE
	GUARDRAIL
	TREE LINE
	CHAIN LINK FENCE
CLF	CHAIN LINK FENCE
	CURBING(TYPE)
BIT CONC	BITUMINOUS CONCRETE
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SB#	BOREHOLE
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MW	MONITORING WELL
SS	SOIL SAMPLE AT OUTFALL

GRAPHIC SCALE

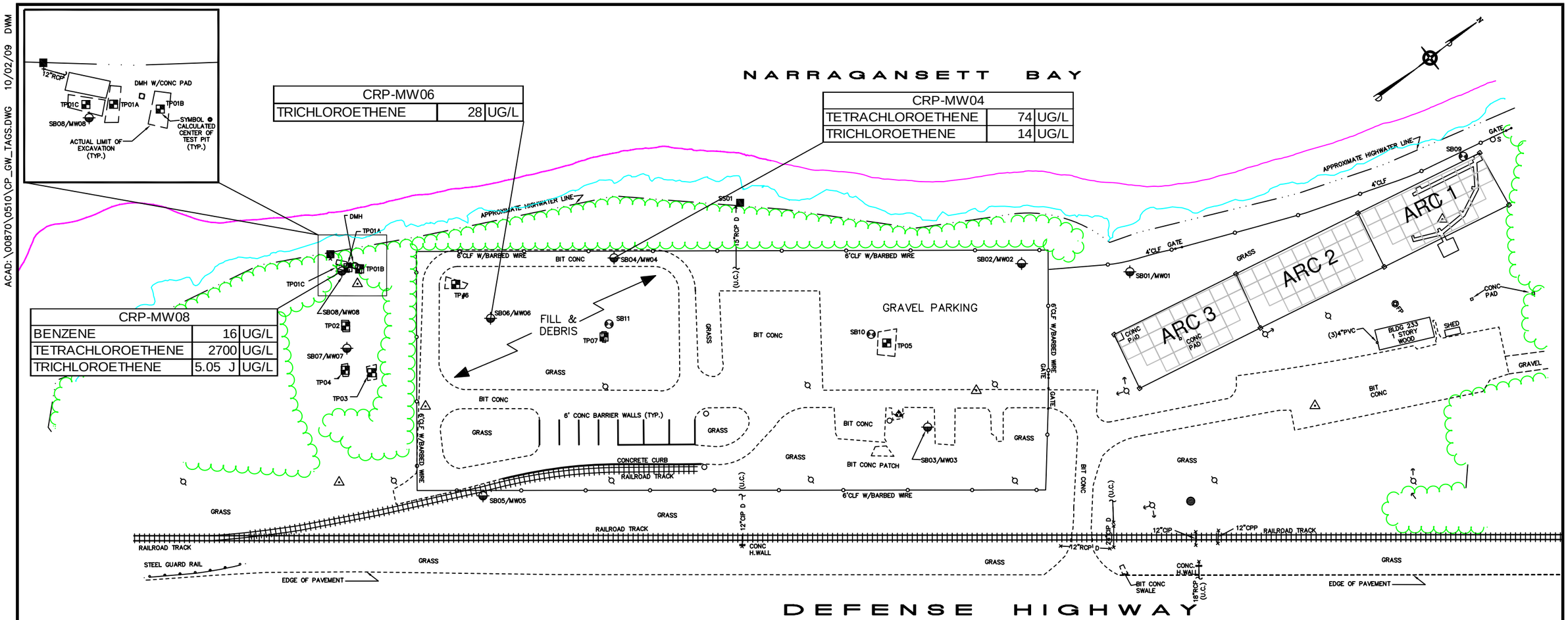
0' 100' 200'

TETRA TECH NUS, INC.

REPRESENTATIVE ANALYTES EXCEEDING PALs IN SUBSURFACE SOIL
SITE INVESTIGATION REPORT
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, RHODE ISLAND

FILE	SCALE
\..\CP_SUB_SOIL_TAGS.DWG	AS NOTED
FIGURE NUMBER 4-2	REV 0 / DATE 10/03/09

ACAD: \00870\0510\CP_GW_TAGS.DWG 10/02/09 DWM



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LEGEND

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	PK. REBAR, NAIL, SPIKE
	GUARDRAIL
	TREE LINE
	CHAIN LINK FENCE
CLF	CHAIN LINK FENCE
	CURBING(TYPE)
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	GUY WIRE
	UTILITY POLE OR LIGHT POLE
DMH	DRAIN MAN HOLE
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R=	RIM
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	APPROXIMATE LOW WATER LINE
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	APPROXIMATE HIGH WATER LINE ESTIMATED BY SURVEYOR
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYLCHLORIDE PIPE
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(TYP.)	TYPICAL
FP	FLAGPOLE
(U.C.)	UNDETERMINED CONNECTION
SB#	BOREHOLE
TP#	TEST PIT
MW	MONITORING WELL
SS	SOIL SAMPLE

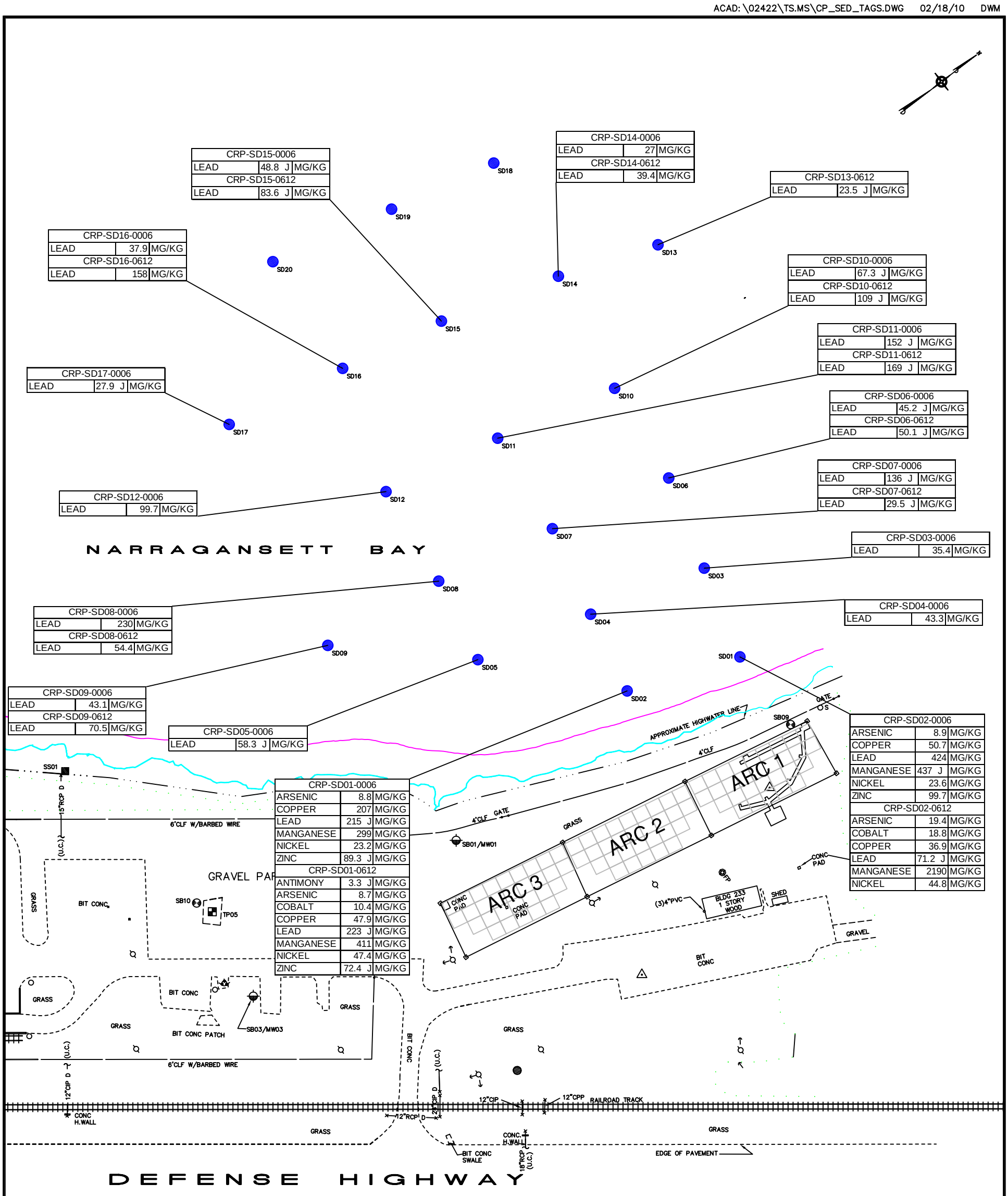
GRAPHIC SCALE

0' 100' 200'

TETRA TECH NUS, INC.

ANALYTES EXCEEDING PALs IN GROUNDWATER
SITE INVESTIGATION REPORT
MRP SITE 1, CARR POINT
NAVSTA NEWPORT, RHODE ISLAND

FILE	SCALE
\..\CP_GW_TAGS.DWG	AS NOTED
FIGURE NUMBER 4-3	REV 0 / DATE 10/02/09



CRP-SD15-0006		
LEAD	48.8 J	MG/KG
CRP-SD15-0612		
LEAD	83.6 J	MG/KG

CRP-SD14-0006		
LEAD	27	MG/KG
CRP-SD14-0612		
LEAD	39.4	MG/KG

CRP-SD13-0612		
LEAD	23.5 J	MG/KG

CRP-SD16-0006		
LEAD	37.9	MG/KG
CRP-SD16-0612		
LEAD	158	MG/KG

CRP-SD10-0006		
LEAD	67.3 J	MG/KG
CRP-SD10-0612		
LEAD	109 J	MG/KG

CRP-SD11-0006		
LEAD	152 J	MG/KG
CRP-SD11-0612		
LEAD	169 J	MG/KG

CRP-SD17-0006		
LEAD	27.9 J	MG/KG

CRP-SD06-0006		
LEAD	45.2 J	MG/KG
CRP-SD06-0612		
LEAD	50.1 J	MG/KG

CRP-SD07-0006		
LEAD	136 J	MG/KG
CRP-SD07-0612		
LEAD	29.5 J	MG/KG

CRP-SD12-0006		
LEAD	99.7	MG/KG

CRP-SD03-0006		
LEAD	35.4	MG/KG

CRP-SD08-0006		
LEAD	230	MG/KG
CRP-SD08-0612		
LEAD	54.4	MG/KG

CRP-SD04-0006		
LEAD	43.3	MG/KG

CRP-SD09-0006		
LEAD	43.1	MG/KG
CRP-SD09-0612		
LEAD	70.5	MG/KG

CRP-SD05-0006		
LEAD	58.3 J	MG/KG

CRP-SD02-0006		
ARSENIC	8.9	MG/KG
COPPER	50.7	MG/KG
LEAD	424	MG/KG
MANGANESE	437 J	MG/KG
NICKEL	23.6	MG/KG
ZINC	99.7	MG/KG
CRP-SD02-0612		
ARSENIC	19.4	MG/KG
COBALT	18.8	MG/KG
COPPER	36.9	MG/KG
LEAD	71.2 J	MG/KG
MANGANESE	2190	MG/KG
NICKEL	44.8	MG/KG

CRP-SD01-0006		
ARSENIC	8.8	MG/KG
COPPER	207	MG/KG
LEAD	215 J	MG/KG
MANGANESE	299	MG/KG
NICKEL	23.2	MG/KG
ZINC	89.3 J	MG/KG
CRP-SD01-0612		
ANTIMONY	3.3 J	MG/KG
ARSENIC	8.7	MG/KG
COBALT	10.4	MG/KG
COPPER	47.9	MG/KG
LEAD	223 J	MG/KG
MANGANESE	411	MG/KG
NICKEL	47.4	MG/KG
ZINC	72.4 J	MG/KG

GRAPHIC SCALE
0' 80' 160'

LEGEND

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	GUARDRAIL
	TREE LINE
	CHAIN LINK FENCE
CLF	CHAIN LINK FENCE
	CURBING(TYPE)
BIT CONC	BITUMINOUS CONCRETE
GRAN	GRANITE
	GUY WIRE
	UTILITY POLE OR LIGHT POLE
DMH	DRAIN MAN HOLE
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	APPROXIMATE HIGH WATER LINE MARKED VIA GPS JUNE 2009
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FP	FLAGPOLE
SB#	BOREHOLE
TP#	TEST PIT
MW	MONITORING WELL
SS	SOIL SAMPLE AT OUTFALL
	SEDIMENT SAMPLE

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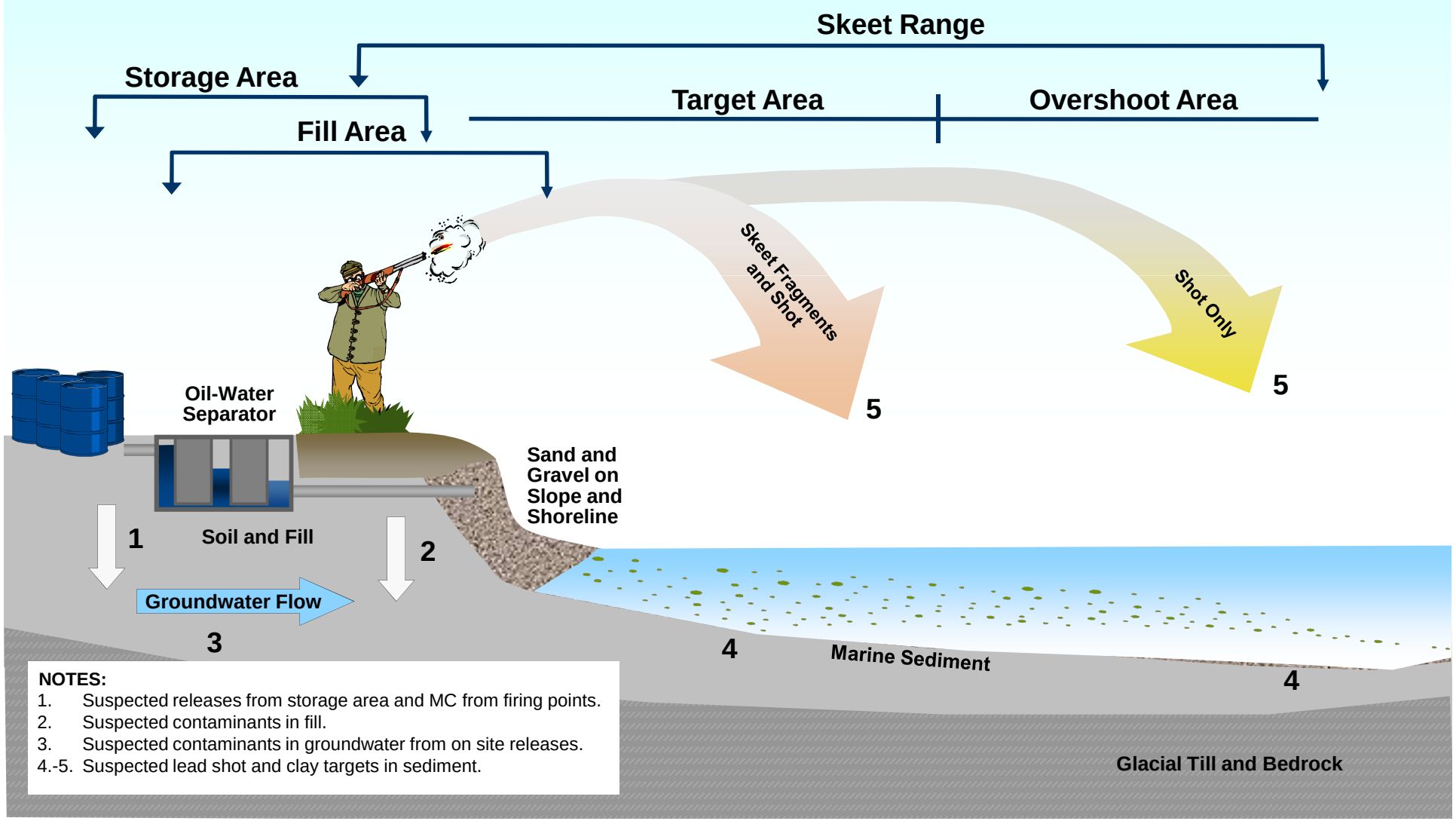
TETRA TECH NUS, INC.

ANALYTES EXCEEDING PALs IN SEDIMENT
SITE INVESTIGATION REPORT
MRP SITE 1, CARR POINT
PORTSMOUTH, RHODE ISLAND

FILE	SCALE
\..\CP_SED_TAGS.DWG	AS NOTED
FIGURE NUMBER 4-4	REV 0 / DATE 02/18/10

FIGURE 8-1

First Tier Conceptual Site Model – Historic Conditions
MRP Site 1 Carr Point
NAVSTA Newport
Middletown, Rhode Island



NOTES:

1. Suspected releases from storage area and MC from firing points.
2. Suspected contaminants in fill.
3. Suspected contaminants in groundwater from on site releases.

4.-5. Suspected lead shot and clay targets in sediment.

FIGURE 8-2a

Second Tier Conceptual Site Model
Existing Conditions, Former Firing Area
MRP Site 1 Carr Point

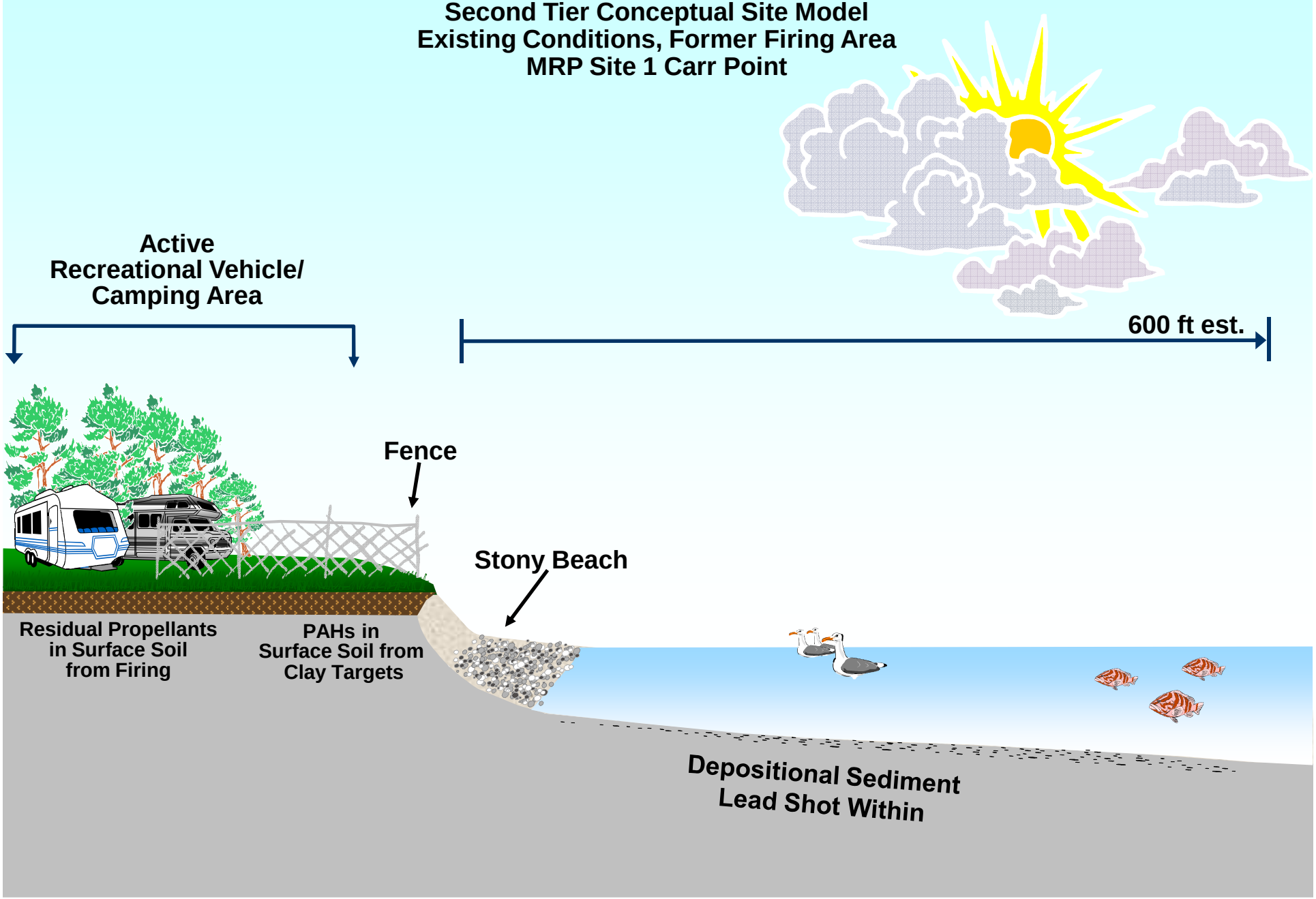


FIGURE 8-2b

Second Tier Conceptual Site Model
Existing Conditions, Storage Area
MRP Site 1 Carr Point

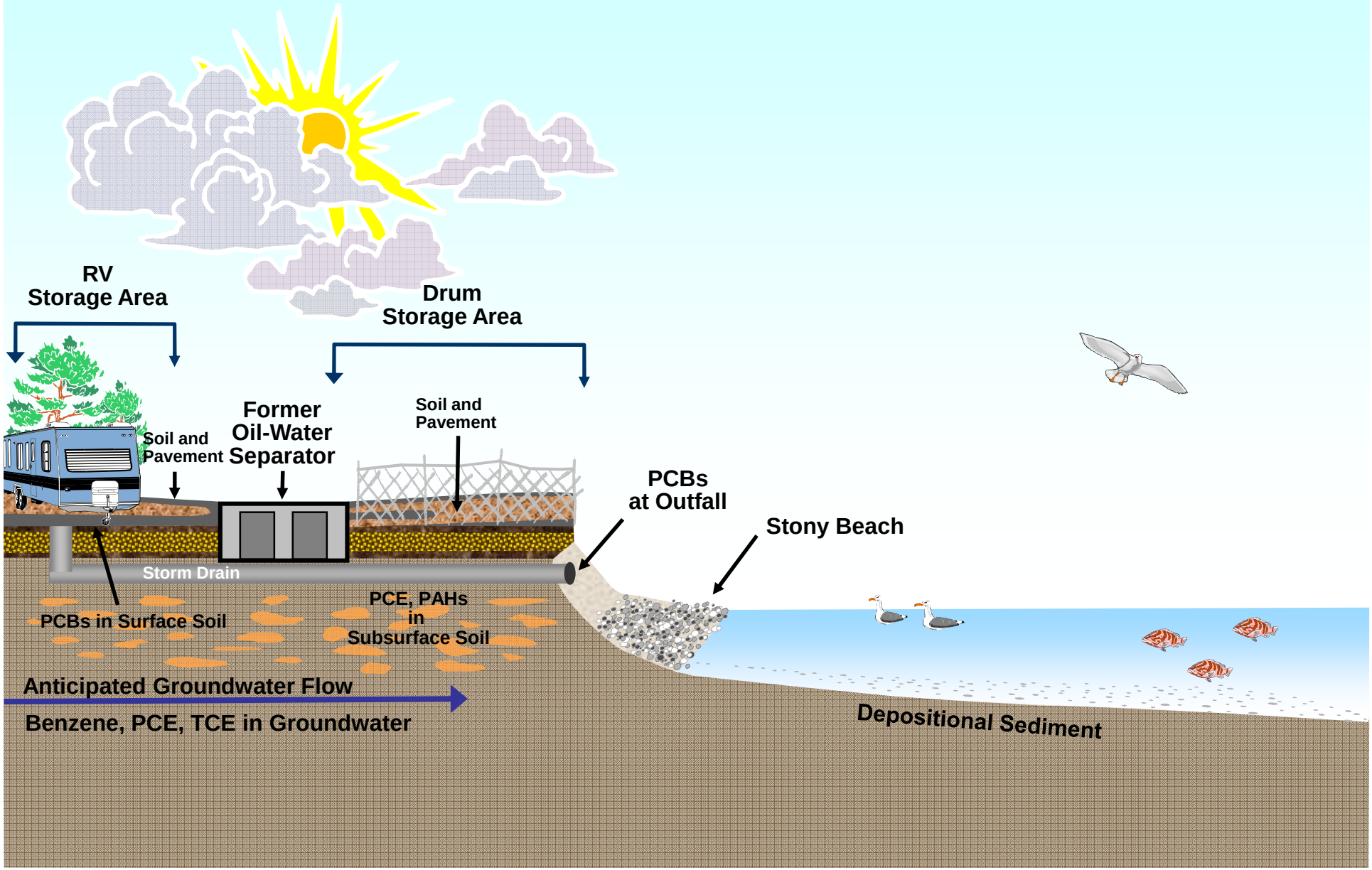
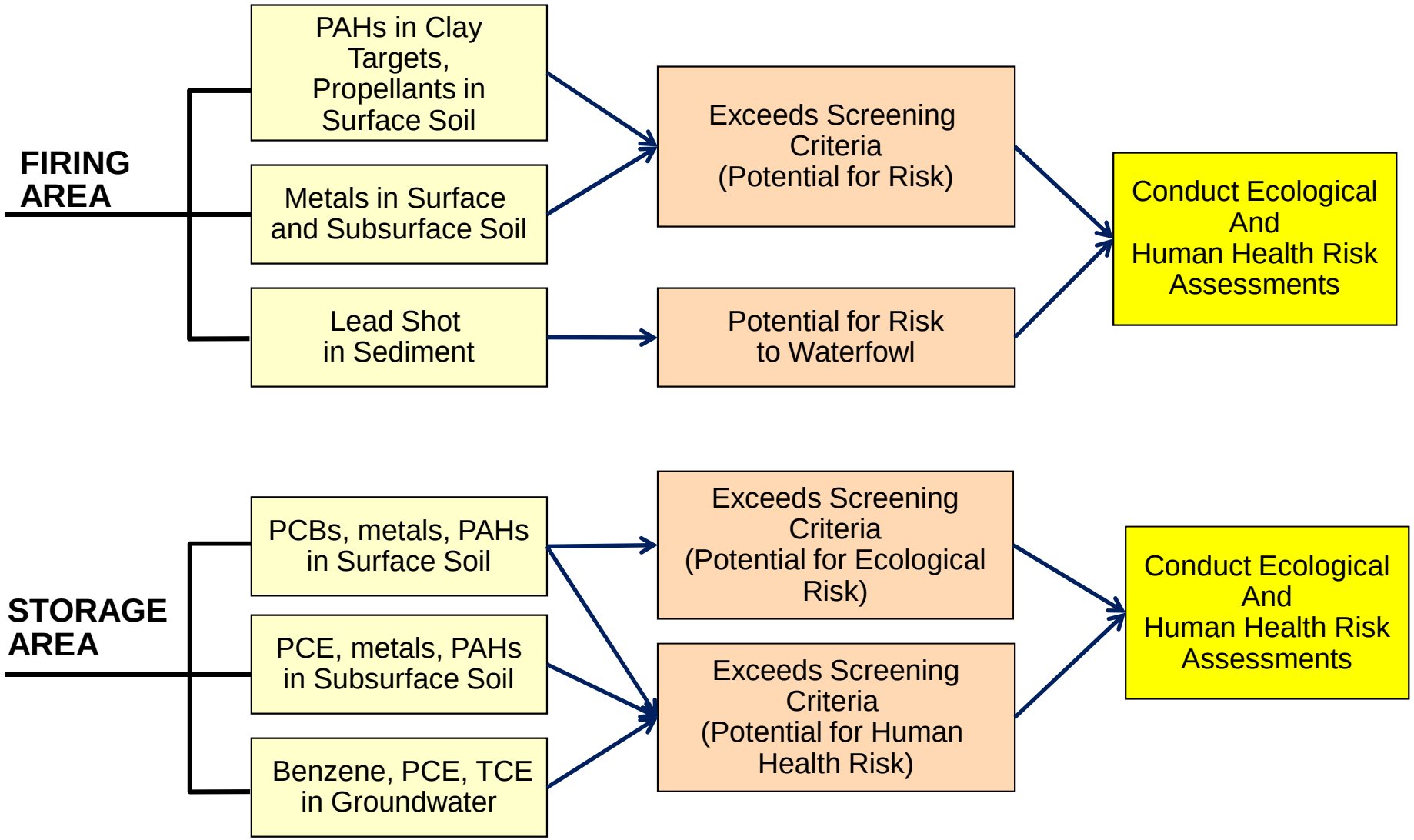


FIGURE 8-3
Third Tier Conceptual Site Model
MRP Site 1 – Carr Point
NAVSTA Newport
Middletown, Rhode Island



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APPENDIX A

RI ANALYTICAL DATA REPORT

R.I. ANALYTICAL
Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

Naval Station Newport
Attn: Ms. Cornelia Mueller
1 Simonpietri Drive
Newport, RI 02841

Date Received: 1/19/07
Date Reported: 1/30/07
P.O. #: 324116FEA12O
Work Order #: 0701-01113

DESCRIPTION: CARR POINT STORAGE AREA

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by U.S. EPA approved methodologies and all NELAC requirements were met. The specific methodologies are listed in the methods column of the Certificate Of Analysis.

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, NY-11726

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:

Mike Hobin
Data Reporting

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 001
SAMPLE DESCRIPTION: NE CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total cyanide	<11	11	mg/kg dry	SW-846 9010A	1/24/07	CB
TPH						
TPH GC/FID	20	11	mg/kg dry	SW846 8100M	1/25/07	CDC
Moisture	13		%	SM2540 G.	1/22/07	REA
Extraction date	Extracted			SW846 3545	1/23/07	EOO
Pesticides / PCB'S						
Aldrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Alpha-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Beta-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Delta-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Gamma-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Chlordane	<0.05	0.05	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDD	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDE	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDT	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Dieldrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan I	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan II	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan Sulfate	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endrin Aldehyde	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Heptachlor	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Heptachlor epoxide	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Methoxychlor	<0.05	0.05	mg/kg dry	SW-846 8080	1/25/07	MFT
Toxaphene	<0.5	0.5	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1016	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1221	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1232	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1242	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1248	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1254	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1260	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Moisture	13		%	SM2540 G.	1/22/07	REA
Surrogate			RANGE	SW-846 8080	1/25/07	MFT
Tetrachloro-m-xylene (TCMX)	69		30-150%	SW-846 8080	1/25/07	MFT
Decachlorobiphenyl	89		30-150%	SW-846 8080	1/25/07	MFT
Volatile Organic Compounds						
Benzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 001
SAMPLE DESCRIPTION: NE CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Bromochloromethane	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
Bromodichloromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromoform	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromomethane	<1.0	1.0	mg/kg dry	5035/8260B	1/25/07	ST
n-Butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Sec-butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
tert-Butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Carbon Tetrachloride	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chloroethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
Chloroform	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chloromethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
2-Chlorotoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
4-Chlorotoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dibromochloromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dibromo-3-Chloropropane	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dibromoethane(EDB)	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dibromomethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,4-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dichlorodifluoromethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
cis-1,2-Dichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
trans-1,2-Dichloroethylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
2,2-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloropropene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Ethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Hexachlorobutadiene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Isopropylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
p-Isopropyltoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Methylene Chloride	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
Naphthalene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
n-Propylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Styrene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,1,2-Tetrachloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,2,2-Tetrachloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Tetrachloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST

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Naval Station Newport
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Work Order #: 0701-01113

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Sample # 001
SAMPLE DESCRIPTION: NE CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Toluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,3-Trichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,4-Trichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,1-Trichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,2-Trichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Trichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Trichlorofluoromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,3-Trichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,4-Trimethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3,5-Trimethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Vinyl Chloride	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
o-Xylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
m,p-Xylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
MTBE	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
Moisture	13		%	SM2540 G.	1/22/07	REA
Surrogates			RANGE	5035/8260B	1/25/07	ST
Dibromofluoromethane	88		80-120%	5035/8260B	1/25/07	ST
Toluene-d8	98		81-117%	5035/8260B	1/25/07	ST
4-Bromofluorobenzene	90		74-121%	5035/8260B	1/25/07	ST
1,2 Dichloroethane-d4	103		80-120%	5035/8260B	1/25/07	ST
Semi-volatile organic compounds						
Acenaphthene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Acenaphthylene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Anthracene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzidine	<0.8	0.8	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(a)anthracene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(b)fluoranthene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(k)fluoranthene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(g,h,i)perylene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(a)pyrene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-chloroethyl)ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-Chloroethoxy)methane	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
bis(2-Chloroisopropyl)Ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-ethylhexyl)phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Bromophenyl phenyl ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Butylbenzyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Chloronaphthalene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Chlorophenyl phenyl ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Chrysene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Dibenzo(a,h)anthracene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Di-n-butyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP

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Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 001
SAMPLE DESCRIPTION: NE CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
1,2-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,3-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,4-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
3,3'-Dichlorobenzidine	<0.8	0.8	mg/kg dry	SW-846 8270C	1/25/07	KMP
Diethyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Dimethyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dinitrotoluene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,6-Dinitrotoluene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Di-n-octyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,2-Diphenylhydrazine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Fluoranthene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Fluorene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorobutadiene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorocyclopentadiene	<0.8	0.8	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachloroethane	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Indeno(1,2,3-cd)pyrene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Isophorone	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Naphthalene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Nitrobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodimethylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodiphenylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodi-n-propylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Phenanthrene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Pyrene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,2,4-Trichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Chloro-3-methylphenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Chlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dichlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dimethylphenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Methyl-4,6-dinitrophenol	<0.8	0.8	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dinitrophenol	<0.8	0.8	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Nitrophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Nitrophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Pentachlorophenol	<0.8	0.8	mg/kg dry	SW-846 8270C	1/25/07	KMP
Phenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4,6-Trichlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Moisture	13		%	SM2540 G.	1/22/07	REA
Surrogates			RANGE	SW-846 8270C	1/25/07	KMP
Phenol-d5	99		15-110%	SW-846 8270C	1/25/07	KMP
2-Fluorophenol	66		15-110%	SW-846 8270C	1/25/07	KMP
2,4,6-Tribromophenol	72		15-110%	SW-846 8270C	1/25/07	KMP

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CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 001
SAMPLE DESCRIPTION: NE CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Nitrobenzene-d5	58		30-130%	SW-846 8270C	1/25/07	KMP
2-Fluorobiphenyl	59		30-130%	SW-846 8270C	1/25/07	KMP
P-Terphenyl-d14	77		30-130%	SW-846 8270C	1/25/07	KMP
Extraction date	Extracted			SW846 3545	1/24/07	VMY
Total Metals						
Arsenic	<2.9	2.9	mg/kg dry	SW-846 6010	1/24/07	REA
Barium	12	0.57	mg/kg dry	SW-846 6010	1/24/07	REA
Cadmium	<0.29	0.29	mg/kg dry	SW-846 6010	1/24/07	REA
Chromium	4.6	1.7	mg/kg dry	SW-846 6010	1/24/07	REA
Lead	24	2.3	mg/kg dry	SW-846 6010	1/24/07	REA
Mercury	<0.13	0.13	mg/kg dry	SW-846 7471A	1/23/07	LW
Selenium	<11	11	mg/kg dry	SW-846 6010	1/24/07	REA
Silver	<1.1	1.1	mg/kg dry	SW-846 6010	1/24/07	REA

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CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 002
SAMPLE DESCRIPTION: NW CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:10

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total cyanide	<12	12	mg/kg dry	SW-846 9010A	1/24/07	CB
TPH						
TPH GC/FID	110	12	mg/kg dry	SW846 8100M	1/25/07	CDC
Moisture	20		%	SM2540 G.	1/22/07	REA
Extraction date	Extracted			SW846 3545	1/23/07	EOO
Pesticides / PCB'S						
Aldrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Alpha-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Beta-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Delta-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Gamma-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Chlordane	<0.05	0.05	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDD	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDE	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDT	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Dieldrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan I	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan II	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan Sulfate	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endrin Aldehyde	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Heptachlor	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Heptachlor epoxide	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Methoxychlor	<0.05	0.05	mg/kg dry	SW-846 8080	1/25/07	MFT
Toxaphene	<0.5	0.5	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1016	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1221	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1232	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1242	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1248	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1254	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1260	1.5	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Moisture	20		%	SM2540 G.	1/22/07	REA
Surrogate			RANGE	SW-846 8080	1/25/07	MFT
Tetrachloro-m-xylene (TCMX)	51		30-150%	SW-846 8080	1/25/07	MFT
Decachlorobiphenyl	67		30-150%	SW-846 8080	1/25/07	MFT
Volatile Organic Compounds						
Benzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST

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CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 002
SAMPLE DESCRIPTION: NW CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:10

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Bromochloromethane	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
Bromodichloromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromoform	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromomethane	<1.0	1.0	mg/kg dry	5035/8260B	1/25/07	ST
n-Butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Sec-butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
tert-Butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Carbon Tetrachloride	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chloroethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
Chloroform	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chloromethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
2-Chlorotoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
4-Chlorotoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dibromochloromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dibromo-3-Chloropropane	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dibromoethane(EDB)	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dibromomethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,4-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dichlorodifluoromethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
cis-1,2-Dichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
trans-1,2-Dichloroethylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
2,2-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloropropene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Ethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Hexachlorobutadiene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Isopropylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
p-Isopropyltoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Methylene Chloride	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
Naphthalene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
n-Propylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Styrene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,1,2-Tetrachloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,2,2-Tetrachloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Tetrachloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST

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CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 002
SAMPLE DESCRIPTION: NW CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:10

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Toluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,3-Trichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,4-Trichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,1-Trichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,2-Trichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Trichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Trichlorofluoromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,3-Trichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,4-Trimethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3,5-Trimethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Vinyl Chloride	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
o-Xylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
m,p-Xylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
MTBE	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
Moisture	20		%	SM2540 G.	1/22/07	REA
Surrogates			RANGE	5035/8260B	1/25/07	ST
Dibromofluoromethane	88		80-120%	5035/8260B	1/25/07	ST
Toluene-d8	96		81-117%	5035/8260B	1/25/07	ST
4-Bromofluorobenzene	92		74-121%	5035/8260B	1/25/07	ST
1,2 Dichloroethane-d4	103		80-120%	5035/8260B	1/25/07	ST
Semi-volatile organic compounds						
Acenaphthene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Acenaphthylene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Anthracene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzidine	<0.8	0.8	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(a)anthracene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(b)fluoranthene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(k)fluoranthene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(g,h,i)perylene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(a)pyrene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-chloroethyl)ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-Chloroethoxy)methane	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
bis(2-Chloroisopropyl)Ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-ethylhexyl)phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Bromophenyl phenyl ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Butylbenzyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Chloronaphthalene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Chlorophenyl phenyl ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Chrysene	0.5	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Dibenzo(a,h)anthracene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Di-n-butyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP

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CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 002
SAMPLE DESCRIPTION: NW CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:10

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
1,2-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,3-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,4-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
3,3'-Dichlorobenzidine	<0.8	0.8	mg/kg dry	SW-846 8270C	1/25/07	KMP
Diethyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Dimethyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dinitrotoluene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,6-Dinitrotoluene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Di-n-octyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,2-Diphenylhydrazine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Fluoranthene	0.6	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Fluorene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorobutadiene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorocyclopentadiene	<0.8	0.8	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachloroethane	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Indeno(1,2,3-cd)pyrene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Isophorone	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Naphthalene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Nitrobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodimethylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodiphenylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodi-n-propylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Phenanthrene	0.5	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Pyrene	0.8	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,2,4-Trichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Chloro-3-methylphenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Chlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dichlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dimethylphenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Methyl-4,6-dinitrophenol	<0.8	0.8	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dinitrophenol	<0.8	0.8	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Nitrophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Nitrophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Pentachlorophenol	<0.8	0.8	mg/kg dry	SW-846 8270C	1/25/07	KMP
Phenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4,6-Trichlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Moisture	20		%	SM2540 G.	1/22/07	REA
Surrogates			RANGE	SW-846 8270C	1/25/07	KMP
Phenol-d5	103		15-110%	SW-846 8270C	1/25/07	KMP
2-Fluorophenol	70		15-110%	SW-846 8270C	1/25/07	KMP
2,4,6-Tribromophenol	74		15-110%	SW-846 8270C	1/25/07	KMP

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 002
SAMPLE DESCRIPTION: NW CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:10

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Nitrobenzene-d5	60		30-130%	SW-846 8270C	1/25/07	KMP
2-Fluorobiphenyl	59		30-130%	SW-846 8270C	1/25/07	KMP
P-Terphenyl-d14	86		30-130%	SW-846 8270C	1/25/07	KMP
Extraction date	Extracted			SW846 3545	1/24/07	VMY
Total Metals						
Arsenic	6.9	3.1	mg/kg dry	SW-846 6010	1/24/07	REA
Barium	20	0.63	mg/kg dry	SW-846 6010	1/24/07	REA
Cadmium	<0.31	0.31	mg/kg dry	SW-846 6010	1/24/07	REA
Chromium	12	1.9	mg/kg dry	SW-846 6010	1/24/07	REA
Lead	510	2.5	mg/kg dry	SW-846 6010	1/24/07	REA
Mercury	<0.12	0.12	mg/kg dry	SW-846 7471A	1/23/07	LW
Selenium	<13	13	mg/kg dry	SW-846 6010	1/24/07	REA
Silver	<1.3	1.3	mg/kg dry	SW-846 6010	1/24/07	REA

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 003
SAMPLE DESCRIPTION: SE CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:35

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total cyanide	<11	11	mg/kg dry	SW-846 9010A	1/24/07	CB
TPH						
TPH GC/FID	1200	11	mg/kg dry	SW846 8100M	1/25/07	CDC
Moisture	9		%	SM2540 G.	1/22/07	REA
Extraction date	Extracted			SW846 3545	1/23/07	EOO
Pesticides / PCB'S						
Aldrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Alpha-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Beta-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Delta-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Gamma-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Chlordane	<0.05	0.05	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDD	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDE	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDT	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Dieldrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan I	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan II	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan Sulfate	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endrin Aldehyde	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Heptachlor	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Heptachlor epoxide	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Methoxychlor	<0.05	0.05	mg/kg dry	SW-846 8080	1/25/07	MFT
Toxaphene	<0.5	0.5	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1016	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1221	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1232	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1242	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1248	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1254	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1260	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Moisture	9		%	SM2540 G.	1/22/07	REA
Surrogate			RANGE	SW-846 8080	1/25/07	MFT
Tetrachloro-m-xylene (TCMX)	72		30-150%	SW-846 8080	1/25/07	MFT
Decachlorobiphenyl	70		30-150%	SW-846 8080	1/25/07	MFT
Volatile Organic Compounds						
Benzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 003
SAMPLE DESCRIPTION: SE CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:35

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Bromochloromethane	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
Bromodichloromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromoform	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromomethane	<1.0	1.0	mg/kg dry	5035/8260B	1/25/07	ST
n-Butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Sec-butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
tert-Butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Carbon Tetrachloride	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chloroethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
Chloroform	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chloromethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
2-Chlorotoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
4-Chlorotoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dibromochloromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dibromo-3-Chloropropane	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dibromoethane(EDB)	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dibromomethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,4-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dichlorodifluoromethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
cis-1,2-Dichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
trans-1,2-Dichloroethylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
2,2-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloropropene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Ethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Hexachlorobutadiene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Isopropylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
p-Isopropyltoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Methylene Chloride	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
Naphthalene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
n-Propylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Styrene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,1,2-Tetrachloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,2,2-Tetrachloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Tetrachloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 003
SAMPLE DESCRIPTION: SE CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:35

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Toluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,3-Trichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,4-Trichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,1-Trichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,2-Trichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Trichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Trichlorofluoromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,3-Trichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,4-Trimethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3,5-Trimethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Vinyl Chloride	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
o-Xylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
m,p-Xylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
MTBE	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
Moisture	3		%	SM2540 G.	1/22/07	REA
Surrogates			RANGE	5035/8260B	1/25/07	ST
Dibromofluoromethane	88		80-120%	5035/8260B	1/25/07	ST
Toluene-d8	97		81-117%	5035/8260B	1/25/07	ST
4-Bromofluorobenzene	88		74-121%	5035/8260B	1/25/07	ST
1,2 Dichloroethane-d4	103		80-120%	5035/8260B	1/25/07	ST
Semi-volatile organic compounds						
Acenaphthene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Acenaphthylene	2.0	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Anthracene	0.5	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzidine	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(a)anthracene	0.8	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(b)fluoranthene	2.9	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(k)fluoranthene	1.7	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(g,h,i)perylene	1.1	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(a)pyrene	1.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-chloroethyl)ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-Chloroethoxy)methane	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
bis(2-Chloroisopropyl)Ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-ethylhexyl)phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Bromophenyl phenyl ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Butylbenzyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Chloronaphthalene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Chlorophenyl phenyl ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Chrysene	1.6	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Dibenzo(a,h)anthracene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Di-n-butyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: Data Reporting

Sample # 003
SAMPLE DESCRIPTION: SE CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:35

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
1,2-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,3-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,4-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
3,3'-Dichlorobenzidine	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
Diethyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Dimethyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dinitrotoluene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,6-Dinitrotoluene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Di-n-octyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,2-Diphenylhydrazine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Fluoranthene	1.7	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Fluorene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorobutadiene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorocyclopentadiene	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachloroethane	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Indeno(1,2,3-cd)pyrene	0.9	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Isophorone	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Naphthalene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Nitrobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodimethylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodiphenylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodi-n-propylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Phenanthrene	1.0	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Pyrene	3.3	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,2,4-Trichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Chloro-3-methylphenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Chlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dichlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dimethylphenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Methyl-4,6-dinitrophenol	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dinitrophenol	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Nitrophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Nitrophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Pentachlorophenol	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
Phenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4,6-Trichlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Moisture	3		%	SM2540 G.	1/22/07	REA
Surrogates			RANGE	SW-846 8270C	1/25/07	KMP
Phenol-d5	109		15-110%	SW-846 8270C	1/25/07	KMP
2-Fluorophenol	74		15-110%	SW-846 8270C	1/25/07	KMP
2,4,6-Tribromophenol	87		15-110%	SW-846 8270C	1/25/07	KMP

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: Data Reporting

Sample # 003
SAMPLE DESCRIPTION: SE CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:35

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Nitrobenzene-d5	68		30-130%	SW-846 8270C	1/25/07	KMP
2-Fluorobiphenyl	70		30-130%	SW-846 8270C	1/25/07	KMP
P-Terphenyl-d14	128		30-130%	SW-846 8270C	1/25/07	KMP
Extraction date	Extracted			SW846 3545	1/24/07	VMY
Total Metals						
Arsenic	<2.7	2.7	mg/kg dry	SW-846 6010	1/24/07	REA
Barium	4.9	0.53	mg/kg dry	SW-846 6010	1/24/07	REA
Cadmium	<0.27	0.27	mg/kg dry	SW-846 6010	1/24/07	REA
Chromium	3.8	1.6	mg/kg dry	SW-846 6010	1/24/07	REA
Lead	33	2.1	mg/kg dry	SW-846 6010	1/24/07	REA
Mercury	<0.11	0.11	mg/kg dry	SW-846 7471A	1/23/07	LW
Selenium	<11	11	mg/kg dry	SW-846 6010	1/24/07	REA
Silver	<1.1	1.1	mg/kg dry	SW-846 6010	1/24/07	REA

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 004
SAMPLE DESCRIPTION: SW CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:50

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total cyanide	<10	10	mg/kg dry	SW-846 9010A	1/24/07	CB
TPH						
TPH GC/FID	1000	11	mg/kg dry	SW846 8100M	1/25/07	CDC
Moisture	8		%	SM2540 G.	1/22/07	REA
Extraction date	Extracted			SW846 3545	1/23/07	EOO
Pesticides / PCB'S						
Aldrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Alpha-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Beta-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Delta-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Gamma-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Chlordane	<0.05	0.05	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDD	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDE	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDT	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Dieldrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan I	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan II	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan Sulfate	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endrin Aldehyde	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Heptachlor	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Heptachlor epoxide	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Methoxychlor	<0.05	0.05	mg/kg dry	SW-846 8080	1/25/07	MFT
Toxaphene	<0.5	0.5	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1016	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1221	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1232	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1242	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1248	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1254	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1260	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Moisture	8		%	SM2540 G.	1/22/07	REA
Surrogate			RANGE	SW-846 8080	1/25/07	MFT
Tetrachloro-m-xylene (TCMX)	59		30-150%	SW-846 8080	1/25/07	MFT
Decachlorobiphenyl	117		30-150%	SW-846 8080	1/25/07	MFT
Volatile Organic Compounds						
Benzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 004
SAMPLE DESCRIPTION: SW CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:50

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Bromochloromethane	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
Bromodichloromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromoform	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromomethane	<1.0	1.0	mg/kg dry	5035/8260B	1/25/07	ST
n-Butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Sec-butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
tert-Butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Carbon Tetrachloride	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chloroethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
Chloroform	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chloromethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
2-Chlorotoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
4-Chlorotoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dibromochloromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dibromo-3-Chloropropane	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dibromoethane(EDB)	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dibromomethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,4-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dichlorodifluoromethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
cis-1,2-Dichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
trans-1,2-Dichloroethylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
2,2-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloropropene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Ethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Hexachlorobutadiene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Isopropylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
p-Isopropyltoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Methylene Chloride	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
Naphthalene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
n-Propylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Styrene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,1,2-Tetrachloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,2,2-Tetrachloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Tetrachloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 004
SAMPLE DESCRIPTION: SW CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:50

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Toluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,3-Trichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,4-Trichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,1-Trichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,2-Trichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Trichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Trichlorofluoromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,3-Trichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,4-Trimethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3,5-Trimethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Vinyl Chloride	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
o-Xylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
m,p-Xylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
MTBE	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
Moisture	8		%	SM2540 G.	1/22/07	REA
Surrogates			RANGE	5035/8260B	1/25/07	ST
Dibromofluoromethane	87		80-120%	5035/8260B	1/25/07	ST
Toluene-d8	96		81-117%	5035/8260B	1/25/07	ST
4-Bromofluorobenzene	90		74-121%	5035/8260B	1/25/07	ST
1,2 Dichloroethane-d4	102		80-120%	5035/8260B	1/25/07	ST
Semi-volatile organic compounds						
Acenaphthene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Acenaphthylene	8.7	4.0	mg/kg dry	SW-846 8270C	1/25/07	KMP
Anthracene	5.7	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzidine	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(a)anthracene	18	4.0	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(b)fluoranthene	27	4.0	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(k)fluoranthene	26	4.0	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(g,h,i)perylene	7.0	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(a)pyrene	20	4.0	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-chloroethyl)ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-Chloroethoxy)methane	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
bis(2-Chloroisopropyl)Ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-ethylhexyl)phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Bromophenyl phenyl ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Butylbenzyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Chloronaphthalene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Chlorophenyl phenyl ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Chrysene	23	4.0	mg/kg dry	SW-846 8270C	1/25/07	KMP
Dibenzo(a,h)anthracene	3.2	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Di-n-butyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 004
SAMPLE DESCRIPTION: SW CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:50

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
1,2-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,3-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,4-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
3,3'-Dichlorobenzidine	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
Diethyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Dimethyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dinitrotoluene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,6-Dinitrotoluene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Di-n-octyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,2-Diphenylhydrazine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Fluoranthene	26	4.0	mg/kg dry	SW-846 8270C	1/25/07	KMP
Fluorene	2.1	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorobutadiene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorocyclopentadiene	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachloroethane	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Indeno(1,2,3-cd)pyrene	6.6	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Isophorone	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Naphthalene	0.5	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Nitrobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodimethylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodiphenylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodi-n-propylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Phenanthrene	20	4.0	mg/kg dry	SW-846 8270C	1/25/07	KMP
Pyrene	58	4.0	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,2,4-Trichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Chloro-3-methylphenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Chlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dichlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dimethylphenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Methyl-4,6-dinitrophenol	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dinitrophenol	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Nitrophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Nitrophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Pentachlorophenol	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
Phenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4,6-Trichlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Moisture	8		%	SM2540 G.	1/22/07	REA
Surrogates			RANGE	SW-846 8270C	1/25/07	KMP
Phenol-d5	107		15-110%	SW-846 8270C	1/25/07	KMP
2-Fluorophenol	71		15-110%	SW-846 8270C	1/25/07	KMP
2,4,6-Tribromophenol	102		15-110%	SW-846 8270C	1/25/07	KMP

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: Data Reporting

Sample # 004
SAMPLE DESCRIPTION: SW CORNER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:50

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Nitrobenzene-d5	66		30-130%	SW-846 8270C	1/25/07	KMP
2-Fluorobiphenyl	68		30-130%	SW-846 8270C	1/25/07	KMP
P-Terphenyl-d14	173		30-130%	SW-846 8270C	1/25/07	KMP
Extraction date	Extracted			SW846 3545	1/24/07	VMY
Total Metals						
Arsenic	<2.7	2.7	mg/kg dry	SW-846 6010	1/24/07	REA
Barium	6.1	0.54	mg/kg dry	SW-846 6010	1/24/07	REA
Cadmium	<0.27	0.27	mg/kg dry	SW-846 6010	1/24/07	REA
Chromium	4.4	1.6	mg/kg dry	SW-846 6010	1/24/07	REA
Lead	59	2.2	mg/kg dry	SW-846 6010	1/24/07	REA
Mercury	<0.10	0.10	mg/kg dry	SW-846 7471A	1/23/07	LW
Selenium	<11	11	mg/kg dry	SW-846 6010	1/24/07	REA
Silver	<1.1	1.1	mg/kg dry	SW-846 6010	1/24/07	REA

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: Data Reporting

Sample # 005
SAMPLE DESCRIPTION: CENTER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:25

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total cyanide	<11	11	mg/kg dry	SW-846 9010A	1/24/07	CB
TPH						
TPH GC/FID	140	11	mg/kg dry	SW846 8100M	1/30/07	CDC
Moisture	10		%	SM2540 G.	1/22/07	REA
Extraction date	Extracted			SW846 3545	1/29/07	EOO
Pesticides / PCB'S						
Aldrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Alpha-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Beta-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Delta-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Gamma-BHC	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Chlordane	<0.05	0.05	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDD	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDE	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
4-4'-DDT	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Dieldrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan I	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan II	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endosulfan Sulfate	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endrin	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Endrin Aldehyde	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Heptachlor	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Heptachlor epoxide	<0.01	0.01	mg/kg dry	SW-846 8080	1/25/07	MFT
Methoxychlor	<0.05	0.05	mg/kg dry	SW-846 8080	1/25/07	MFT
Toxaphene	<0.5	0.5	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1016	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1221	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1232	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1242	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1248	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1254	<0.1	0.1	mg/kg dry	SW-846 8080	1/25/07	MFT
Aroclor-1260	2.4	0.5	mg/kg dry	SW-846 8080	1/25/07	MFT
Moisture	10		%	SM2540 G.	1/22/07	REA
Surrogate			RANGE	SW-846 8080	1/25/07	MFT
Tetrachloro-m-xylene (TCMX)	75		30-150%	SW-846 8080	1/25/07	MFT
Decachlorobiphenyl	83		30-150%	SW-846 8080	1/25/07	MFT
Volatile Organic Compounds						
Benzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 005
SAMPLE DESCRIPTION: CENTER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:25

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Bromochloromethane	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
Bromodichloromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromoform	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Bromomethane	<1.0	1.0	mg/kg dry	5035/8260B	1/25/07	ST
n-Butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Sec-butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
tert-Butylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Carbon Tetrachloride	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chloroethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
Chloroform	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Chloromethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
2-Chlorotoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
4-Chlorotoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dibromochloromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dibromo-3-Chloropropane	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dibromoethane(EDB)	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dibromomethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,4-Dichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Dichlorodifluoromethane	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
cis-1,2-Dichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
trans-1,2-Dichloroethylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
2,2-Dichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1-Dichloropropene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Ethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Hexachlorobutadiene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Isopropylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
p-Isopropyltoluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Methylene Chloride	<0.5	0.5	mg/kg dry	5035/8260B	1/25/07	ST
Naphthalene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
n-Propylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Styrene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,1,2-Tetrachloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,2,2-Tetrachloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Tetrachloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 005
SAMPLE DESCRIPTION: CENTER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:25

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Toluene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,3-Trichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,4-Trichlorobenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,1-Trichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,1,2-Trichloroethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Trichloroethene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Trichlorofluoromethane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,3-Trichloropropane	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,2,4-Trimethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
1,3,5-Trimethylbenzene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
Vinyl Chloride	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
o-Xylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
m,p-Xylene	<0.2	0.2	mg/kg dry	5035/8260B	1/25/07	ST
MTBE	<0.4	0.4	mg/kg dry	5035/8260B	1/25/07	ST
Moisture	10		%	SM2540 G.	1/22/07	REA
Surrogates			RANGE	5035/8260B	1/25/07	ST
Dibromofluoromethane	89		80-120%	5035/8260B	1/25/07	ST
Toluene-d8	98		81-117%	5035/8260B	1/25/07	ST
4-Bromofluorobenzene	90		74-121%	5035/8260B	1/25/07	ST
1,2 Dichloroethane-d4	103		80-120%	5035/8260B	1/25/07	ST
Semi-volatile organic compounds						
Acenaphthene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Acenaphthylene	1.2	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Anthracene	0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzidine	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(a)anthracene	1.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(b)fluoranthene	2.6	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(k)fluoranthene	2.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(g,h,i)perylene	0.7	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Benzo(a)pyrene	1.8	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-chloroethyl)ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-Chloroethoxy)methane	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
bis(2-Chloroisopropyl)Ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Bis(2-ethylhexyl)phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Bromophenyl phenyl ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Butylbenzyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Chloronaphthalene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Chlorophenyl phenyl ether	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Chrysene	2.3	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Dibenzo(a,h)anthracene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Di-n-butyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 005
SAMPLE DESCRIPTION: CENTER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:25

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
1,2-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,3-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,4-Dichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
3,3'-Dichlorobenzidine	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
Diethyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Dimethyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dinitrotoluene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,6-Dinitrotoluene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Di-n-octyl phthalate	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,2-Diphenylhydrazine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Fluoranthene	2.6	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Fluorene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorobutadiene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachlorocyclopentadiene	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
Hexachloroethane	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Indeno(1,2,3-cd)pyrene	0.6	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Isophorone	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Naphthalene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Nitrobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodimethylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodiphenylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
N-nitrosodi-n-propylamine	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Phenanthrene	1.6	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Pyrene	4.6	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
1,2,4-Trichlorobenzene	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Chloro-3-methylphenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Chlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dichlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dimethylphenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Methyl-4,6-dinitrophenol	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4-Dinitrophenol	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
2-Nitrophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
4-Nitrophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Pentachlorophenol	<0.7	0.7	mg/kg dry	SW-846 8270C	1/25/07	KMP
Phenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
2,4,6-Trichlorophenol	<0.4	0.4	mg/kg dry	SW-846 8270C	1/25/07	KMP
Moisture	10		%	SM2540 G.	1/22/07	REA
Surrogates			RANGE	SW-846 8270C	1/25/07	KMP
Phenol-d5	102		15-110%	SW-846 8270C	1/25/07	KMP
2-Fluorophenol	68		15-110%	SW-846 8270C	1/25/07	KMP
2,4,6-Tribromophenol	80		15-110%	SW-846 8270C	1/25/07	KMP

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Naval Station Newport
Date Received: 1/19/07
Work Order #: 0701-01113

Approved by: _____
Data Reporting

Sample # 005
SAMPLE DESCRIPTION: CENTER OF PAVED STORAGE AREA
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 1/19/2007 @ 10:25

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Nitrobenzene-d5	60		30-130%	SW-846 8270C	1/25/07	KMP
2-Fluorobiphenyl	64		30-130%	SW-846 8270C	1/25/07	KMP
P-Terphenyl-d14	100		30-130%	SW-846 8270C	1/25/07	KMP
Extraction date	Extracted			SW846 3545	1/24/07	VMY
Total Metals						
Arsenic	<5.2	5.2	mg/kg dry	SW-846 6010	1/24/07	REA
Barium	8.8	0.51	mg/kg dry	SW-846 6010	1/24/07	REA
Cadmium	<0.26	0.26	mg/kg dry	SW-846 6010	1/24/07	REA
Chromium	6.9	1.5	mg/kg dry	SW-846 6010	1/24/07	REA
Lead	340	2.0	mg/kg dry	SW-846 6010	1/24/07	REA
Mercury	<0.10.	0.10	mg/kg dry	SW-846 7471A	1/23/07	LW
Selenium	<10	10	mg/kg dry	SW-846 6010	1/24/07	REA
Silver	<1.0	1.0	mg/kg dry	SW-846 6010	1/24/07	REA

CHAIN OF CUSTODY RECORD

R.I. Analytical Laboratories, Inc.

41 Illinois Avenue
Warwick, RI 02888-3007
Tel: 800-937-2580
Fax: 401-738-1970

131 Coolidge St, Suite 105
Hudson, MA 01749-1331
Tel: 800-937-2580
Fax: 978-568-0078

01-17-07

Date Collected	Time Collected	Field Sample Identification	Grab or Composite	# of Containers & Type C	Preservation Code P	Matrix Code M	Total Cyanide (method 9010)	TPH (method 8100M)	Pesticides/PCB's (method 8080/8082)	SVOC's (method 8270)	Total RCRA 8 (methods 6010, 7471A)	VOC's (metod 5035)
1.19.07	1015	NE corner of paved storage area	G	1AG	NP	S	x	x	x	x	x	
			G	2V	M NP	S						x
	1010	NW corner of paved storage area	G	1AG	NP	S	x	x	x	x	x	
			G	2V	M NP	S						x
	1035	SE corner of paved storage area	G	1AG	NP	S	x	x	x	x	x	
			G	2V	M NP	S						x
	1050	SW corner of paved storage area	G	1AG	NP	S	x	x	x	x	x	
			G	2V	M NP	S						x
	1025	Center of paved storage area	G	1AG	NP	S	x	x	x	x	x	
			G	2V	M NP	S						x

Client Information			
Company Name:	Naval Station Newport		
Address:	1 Simonpietri Drive		
City / State / Zip:	Newport RI 02841		
Telephone:	401-841-7561	Fax:	401-841-7071
Contact Person:	Cornelia Mueller		

Project Information			
Project Name:	Carr Point Storage Area		
P.O. Number:		Project Number:	
Report To:	Cornelia Mueller	Phone: 401-841-7561	Fax: 401-841-7071
Sampled by:	Dave DeFrancesco	Email report to these addresses:	cornelia.mueller@navy.mil
Quote No:	NAV60907		

Relinquished By	Date	Time	Received By	Date	Time
D. DeFrancesco	1.19.07	1145	[illegible]	1/19/07	1145

Turn Around Time		
	Normal	EMAIL Report
X	3 Business days. Possible surcharge	
	Rush _____ (business days)	

Project Comments

Circle if applicable: GW-1, GW-2, GW-3, S-1, S-2, S-3 MCP Data Enhancement QC Package? Yes No

Temp. Upon Receipt °C

Lab Use Only	
	Sample Pick Up Only
X	RIAL sampled; attach field hours
✓	Shipped on ice
Workorder No:	0701-01113

Containers: P=Poly, G=Glass, AG=Amber Glass, V=Vial, St=Sterile Preservatives: A=Ascorbic Acid, NH4=NH_4Cl, H=HCl, M=MeOH, N=HNO_3, NP=None, S=H_2SO_4, SB=$NaHSO_4$, SH=NaOH, T=$Na_2S_2O_3$, Z=ZnOAc
Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, SL=Sludge, A=Air, B=Bulk/Solid, O=_____

APPENDIX B

FIELD DOCUMENTATION AND REPORTING, SEDIMENT SAMPLE COLLECTION – SITE INVESTIGATION, MRP SITE 1 CARR POINT (ECOTONES, 2009)

ECOTONES, INC.
ENVIRONMENTAL CONSULTANTS

1130 TEN ROD ROAD D-100
NORTH KINGSTOWN, RI 02852
PHONE/FAX 401 294-1155

Tom Campbell
Tetra Tech NUS, Inc.
55 Jonpsin Road
Wilmington, MA 01887

July 10, 2009
Project 09044

via email: thomas.campbell@tetratech.com

RE: Field Documentation and Reporting
SEDIMENT SAMPLE COLLECTION - SITE INVESTIGATION
MRP SITE 1 CARR POINT, NAVAL STATION NEWPORT, PORTSMOUTH, RI
CONTRACT NUMBER N62467-04-D-0055, CONTRACT TASK ORDER 406

Mr. Campbell:

All samples were collected between June 16 and 19, 2009. Average sample coordinates and the depth at each station are listed in TABLE 1a. Specific sampling dates, times, and GPS data for each subsample collected are listed in TABLE 1b. Samples were collected using AMS stainless steel multi-stage soil core sampler. The coring device was manually pushed into the sediment from the work boat or standing on shore (Stations 1 and 2). All equipment was decontaminated before use and between samples following the methods outlined in the technical specifications. At least 8 cores were collected at each sample station.

Although some locations required probing to collect the 0 to 6-inch deep samples, this sample interval was collected at all stations. Samples deeper than 6 inches were difficult to collect. In most locations refusal was encountered shallower than 12 inches. Refusal was presumed to be due to dense till or rocks larger than 2 inches in diameter. The western-most stations may have had thicker deposits of relatively finer sediment, but sampling depths appear to have been limited by the ability to manually insert the core without bending the push rod and/or moving the boat.

With the exception of Station 6, all samples were collected within 5 feet of the station coordinates provided by TTNUS (FIGURE 1). Station 6 samples were collected within 11 feet of the original coordinates. TTNUS staff determined the sample locations were sufficient and that re-sampling at Station 6 was not necessary. The average position and the depth at each station are listed in Table 1a. The location of each subsample and GPS data are depicted on FIGURE 1 and coordinates listed in TABLE 1.

TABLE 1a. Average Station Coordinates

Station	Easting[1]	Northing[1]	Bottom Elevation (MLLW)[2]
1	384032	176965	-0.2
2	383990	176855	-1.02
3	383940	176991	-3.4
4	383907	176873	-3.9
5	383874	176756	-2.8
6	383847	177018	-6.4
7	383816	176895	-6.5
8	383788	176773	-4.9
9	383771	176646	-3.1
10	383743	177030	-7.6
11	383711	176907	-7.4
12	383685	176786	-6.5
13	383656	177152	-7.9
14	383620	177054	-8.1
15	383584	176934	-8.7
16	383561	176827	-8.3
17	383536	176703	-6.6
18	383491	177072	-8.4
19	383465	176963	-8.6
20	383434	176837	-9.2

[1] RI State Plane NAD 1983 coordinates for the average values for all subsamples collected at each station (Table 1b).
[2] Elevation determined from GARMIN 300C depth sounder corrected for transducer offset & Mean Lower Low Water (MLLW) tide level at Newport Tide Gauge.
NOTE: All locations considered approximate and represent only a conceptual relationship of features.

TABLE 1b. Subsample Data

Sample	GPS Records					
	Easting[1]	Northing[1]	TIME (GMT)	DATE	PDOP	# SATS
1a-h	384032	176965	14:44	6/19/09	2.30	9
2a-h	383990	176855	16:33	6/19/09	4.40	3
3a	383939	176992	15:54	6/18/09	2.20	8
3b	383940	176992	16:03	6/18/09	2.20	8
3c	383940	176992	16:06	6/18/09	1.80	9
3d	383942	176993	16:10	6/18/09	1.80	9
3e	383941	176992	16:13	6/18/09	1.80	9
3f	383939	176989	16:16	6/18/09	1.80	9
3g	383943	176989	16:19	6/18/09	1.70	9
3h	383940	176989	16:23	6/18/09	1.80	8
4a	383903	176873	16:44	6/18/09	2.00	7
4b	383909	176874	16:47	6/18/09	2.00	7
4c	383908	176873	16:50	6/18/09	2.00	7
4d	383909	176874	16:56	6/18/09	2.00	7
4e	383904	176871	17:02	6/18/09	2.00	7
4f	383905	176873	17:11	6/18/09	2.60	6
4g	383906	176874	17:14	6/18/09	2.10	7
4h	383909	176875	17:18	6/18/09	2.00	7

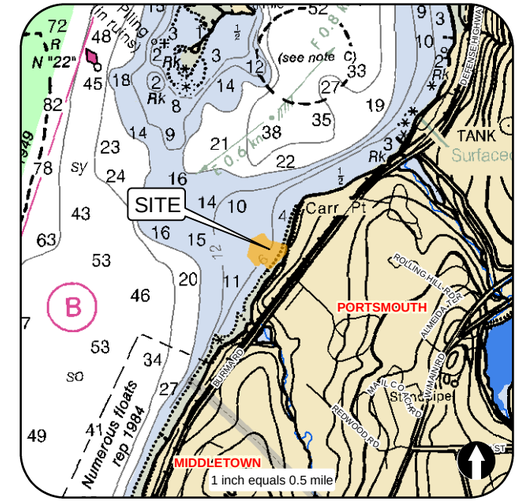
5a	383876	176753	17:45	6/15/09	1.90	7
5b	383870	176756	17:53	6/15/09	1.60	8
5c	383875	176758	17:59	6/15/09	1.50	9
5d	383875	176755	18:05	6/15/09	1.60	9
5e	383874	176756	18:10	6/15/09	1.60	9
5f	383873	176755	18:16	6/15/09	1.90	8
5g	383872	176757	18:21	6/15/09	2.00	8
5h	383877	176756	18:25	6/15/09	2.00	8
6a	383853	177026	14:06	6/15/09	1.90	9
6b	383842	177022	14:30	6/15/09	2.00	9
6c	383853	177018	14:42	6/15/09	2.50	9
6d	383851	177012	14:47	6/15/09	2.40	9
6e	383842	177019	14:53	6/15/09	2.40	9
6f	383845	177016	14:54	6/15/09	2.40	9
6g	383851	177011	14:58	6/15/09	2.30	9
6h	383836	177017	15:04	6/15/09	2.20	9
7a	383817	176891	15:50	6/15/09	1.90	9
7b	383818	176893	15:56	6/15/09	2.20	8
7c	383818	176894	16:03	6/15/09	2.20	8
7d	383817	176895	16:16	6/15/09	2.20	8
7e	383816	176898	16:21	6/15/09	1.80	9
7f	383814	176897	16:26	6/15/09	1.80	9
7g	383816	176896	16:30	6/15/09	1.70	9
7h	383816	176894	16:42	6/15/09	1.80	8
8a	383788	176771	13:15	6/19/09	1.70	10
8b	383788	176773	13:20	6/19/09	1.70	10
8c	383789	176773	13:22	6/19/09	1.60	10
8d	383787	176772	13:26	6/19/09	1.60	10
8e	383786	176774	13:29	6/19/09	1.90	9
8f	383790	176770	13:32	6/19/09	1.90	9
8g	383787	176774	13:36	6/19/09	1.90	9
8h	383787	176773	13:39	6/19/09	1.90	9
9a	383769	176650	18:00	6/19/09	2.00	7
9b	383772	176648	18:04	6/19/09	2.00	7
9c	383772	176646	18:07	6/19/09	2.00	7
9d	383771	176643	18:09	6/19/09	2.00	7
9e	383770	176645	18:13	6/19/09	2.30	6
9f	383772	176645	18:16	6/19/09	2.30	6
9g	383772	176647	18:17	6/19/09	2.40	6
9h	383769	176650	18:25	6/19/09	2.50	6
9i	383772	176645	18:27	6/19/09	2.50	6
10a	383743	177031	16:59	6/17/09	2.00	7
10b	383744	177029	17:02	6/17/09	2.00	7
10c	383745	177029	17:06	6/17/09	2.00	7
10d	383745	177029	17:09	6/17/09	1.90	7
10e	383743	177032	17:12	6/17/09	1.90	7
10f	383742	177031	17:15	6/17/09	2.70	6

10g	383742	177028	17:19	6/17/09	2.10	7
10h	383744	177030	17:22	6/17/09	2.00	7
11a	383711	176907	17:13	6/16/09	1.90	7
11b	383713	176907	17:17	6/16/09	2.70	6
11c	383712	176908	17:21	6/16/09	2.10	7
11d	383711	176908	17:26	6/16/09	2.00	7
11e	383708	176907	17:29	6/16/09	2.00	7
11f	383710	176908	17:33	6/16/09	2.00	7
11g	383712	176907	17:38	6/16/09	1.90	7
11h	383712	176907	17:54	6/16/09	1.50	9
12a	383686	176781	13:46	6/18/09	1.90	9
12b	383687	176787	13:51	6/18/09	1.90	9
12c	383685	176787	13:55	6/18/09	1.90	9
12d	383687	176788	14:00	6/18/09	1.80	10
12e	383685	176787	14:04	6/18/09	1.80	10
12f	383686	176786	14:09	6/18/09	1.90	9
12g	383684	176786	14:12	6/18/09	2.00	9
12h	383685	176787	14:18	6/18/09	2.00	9
13a	383657	177151	14:29	6/17/09	2.00	9
13b	383655	177155	14:36	6/17/09	2.50	9
13c	383653	177155	14:41	6/17/09	2.40	9
13d	383658	177150	14:50	6/17/09	2.30	9
13e	383657	177151	14:52	6/17/09	2.30	9
13f	383654	177152	14:56	6/17/09	2.20	9
13g	383656	177151	15:00	6/17/09	2.20	9
13h	383655	177154	15:03	6/17/09	2.10	9
14a	383621	177054	14:46	6/18/09	2.30	9
14b	383620	177053	14:49	6/18/09	2.30	9
14c	383621	177054	14:54	6/18/09	2.20	9
14d	383621	177055	14:57	6/18/09	2.10	9
14e	383621	177055	15:00	6/18/09	2.10	9
14f	383619	177053	15:04	6/18/09	1.80	10
14g	383619	177053	15:06	6/18/09	1.70	10
14h	383621	177056	15:12	6/18/09	1.80	9
15a	383585	176934	15:42	6/16/09	1.90	9
15b	383585	176934	15:47	6/16/09	1.90	9
15c	383584	176935	16:03	6/16/09	2.20	8
15d	383581	176935	16:09	6/16/09	2.20	8
15e	383585	176932	16:14	6/16/09	1.80	9
15f	383582	176934	16:20	6/16/09	1.80	9
15g	383580	176935	16:32	6/16/09	1.80	8
15h	383587	176931	16:33	6/16/09	1.80	8
16a	383562	176830	15:34	6/17/09	1.80	9
16b	383562	176830	15:39	6/17/09	1.90	9
16c	383561	176828	15:43	6/17/09	1.90	9
16d	383562	176824	15:47	6/17/09	2.20	8
16e	383559	176827	15:51	6/17/09	2.20	8

16f	383561	176826	15:55	6/17/09	2.20	8
16g	383560	176828	15:58	6/17/09	2.20	8
16h	383562	176825	16:01	6/17/09	2.20	8
17a	383536	176704	18:28	6/16/09	2.30	7
17b	383537	176702	18:32	6/16/09	2.30	7
17c	383536	176703	18:36	6/16/09	2.40	7
17d	383537	176703	18:40	6/16/09	1.90	8
17e	383537	176702	18:43	6/16/09	1.90	8
17f	383536	176703	18:48	6/16/09	2.00	8
17g	383535	176703	18:52	6/16/09	2.10	8
17h	383536	176703	18:56	6/16/09	2.20	8
18a	383492	177070	13:02	6/16/09	2.10	9
18b	383494	177074	13:10	6/16/09	1.80	10
18c	383489	177073	13:20	6/16/09	1.70	10
18d	383490	177072	13:28	6/16/09	1.70	10
18e	383490	177073	13:35	6/16/09	1.70	10
18f	383490	177073	13:55	6/16/09	1.90	9
18g	383496	177071	13:59	6/16/09	1.90	9
18h	383489	177073	14:06	6/16/09	1.80	10
19a	383464	176963	14:41	6/16/09	2.50	9
19b	383466	176961	14:46	6/16/09	2.40	9
19c	383466	176962	14:50	6/16/09	2.40	9
19d	383465	176963	14:54	6/16/09	2.30	9
19e	383465	176962	14:58	6/16/09	2.30	9
19f	383465	176963	15:02	6/16/09	2.20	9
19g	383465	176963	15:06	6/16/09	2.10	9
19h	383464	176963	15:10	6/16/09	1.80	10
20a	383430	176837	13:13	6/17/09	1.80	10
20b	383436	176836	13:18	6/17/09	1.70	10
20c	383435	176836	13:23	6/17/09	1.70	10
20d	383434	176837	13:27	6/17/09	1.70	10
20e	383431	176837	13:30	6/17/09	1.70	10
20f	383434	176836	13:34	6/17/09	1.60	10
20g	383434	176835	13:38	6/17/09	1.90	9
20h	383434	176839	13:41	6/17/09	1.90	9

[1] RI State Plane NAD 1983 as recorded using ESRI ArcPAD™ software and a Trimble DSM-232 GPS with OmniStar™ differential corrections. Time reported as Greenwich Mean Time (GMT). Local Daylight savings Time (LDT) = GMT – 4 hours.
NOTE: All locations considered approximate and represent only a conceptual relationship of features.

Equipment Specifications: A Trimble DSM-232 GPS using OMNISTAR™ real-time differential corrections combined with ESRI ArcPad™ software was used to navigate to sample stations and to record sample locations. Coordinates were recorded using ArcPad™ when the core hit the sediment surface. Per the manufacturer's and the differential correction provider's specifications, the GPS provides real-time, sub-meter accuracy.



All feature locations are approximate and represent only a conceptual relationship of depicted features. This data to be used solely for preliminary planning and graphic map display purposes only. Not suitable for navigation, engineering design, legal descriptions, or final determination of jurisdictional determinations.

Map compiled from:
1) NOAA RNC Chart No. 13221 NARRAGANSETT BAY RI-MA Ed. 57 Issue Date 2008-02-01 Update Date 2009-05-23 No. 56.
2) Tetra Tech NUS, Inc. station coordinates 5/21/2009.
3) RIGIS (2009) data.
4) Terraserver 10/1/2006 Aerial Photograph.

Subsample Core Locations
5-foot Radii

FIGURE 1. CARR POINT SAMPLING STATIONS

Burma Road
Portsmouth, RI

Project 09044 10 July 2009

ECOTONES, INC.
ENVIRONMENTAL CONSULTANTS
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Depth at each sample station was recorded with a GARMIN 300C depth sounder and then corrected for the transducer offset and tide stage at the Newport Tide Gauge (NOAA Station 8452660).

All locations and coordinates are considered approximate and represent only a conceptual relationship of features. Ecotones, Inc. provides no guarantees, certifications, or other statements regarding the absolute or authoritative accuracy of the equipment used or coordinates recorded.

A 2-inch diameter, 12-inch long, AMS stainless steel multi-stage soil core sampler with a 1.875-inch inside diameter plastic liner was used to collect all samples. Detailed equipment specifications for all equipment are provided in APPENDIX 1.

Weather: Generally overcast conditions with fog, southeast winds, and light rain were prevalent during the site work. A more detailed listing of weather conditions including tide stage and moon phase are summarized in TABLE 2a-c.

Table 2a. Tide Stage, Water Temperature, and Moon Phase

Date	Tide Level (Feet MLLW)[1]				Time (LDT)[1]		Water Temp (°F)[1]			Moon Phase
	Max	Min	Range	Ave	High	Low	Max	Min	Ave	
15-June	3.8	0.8	3.0	2.2	1:18 13:36	6:48 20:12	62.8	60.3	61.5	Last/3rd Quarter
16-June	3.7	0.7	3.8	2.0	2:06 14:30	7:12 21:06	62.8	60.7	61.9	Waning
17-June	3.7	0.5	3.2	2.0	3:06 15:30	8:18 21:54	64.6	61.3	62.7	Waning
18-June	4.1	0.6	3.5	2.2	4:12 16:30	9:24 22:48	64.4	61.8	62.9	Waning
19-June	4.5	0.6	3.9	2.3	4:54 17:24	10:48 23:42	62.3	60.7	61.3	Waning Crescent

[1]NOAA Station 8452660, Newport, RI http://tidesandcurrents.noaa.gov

Table 2b. Wind Data[1]

Date	Wind Speed (knots)			Wind Direction (°)			Wind Gust (knots)		
	Max	Min	Ave	Max	Min	Ave	Max	Min	Ave
15-June	10.3	1.3	4.9	354.7	2.0	99.3	13.2	2.3	7.1
16-June	10.6	0.2	5.9	258.9	8.6	102.1	13.9	0.9	8.4
17-June	8.5	0.0	4.5	358.6	0.0	159.7	9.9	0.0	5.7
18-June	17.2	3.5	9.8	177.7	123.0	152.1	22.4	4.9	14.1
19-June	15.0	0.0	6.9	333.5	4.8	183.2	23.6	0.0	9.4

[1]NOAA Station 8452660, Newport, RI http://tidesandcurrents.noaa.gov

Table 2c. Weather Conditions

Date	General Conditions[2]	Cloud Cover[2]	Air Temp (°F)[1]			Pressure (mbars)[1]			Precipitation[2]
			Max	Min	Ave	Max	Min	Ave	(inches)
15-June	Fog, Glaze or Rime	50%	66.0	55.4	59.6	1020.2	1016.0	1018.2	0
16-June	Fog	60%	65.0	54.8	58.8	1025.5	1020.1	1023.2	Trace
17-June	Fog & Fog with <1/4 mile visibility	0%	65.5	53.5	59.8	1024.5	1021.5	1024.0	0
18-June	Fog & Rain	30%	64.1	58.7	61.4	1021.5	1011.6	1017.1	0.56
19-June	Fog & Rain	80%	68.7	62.3	64.1	1011.5	1005.5	1007.6	0.63

[1]NOAA Station 8452660, Newport, RI http://tidesandcurrents.noaa.gov
[2]NWS Station Newport, RI (CF6PVD) http://www.erh.noaa.gov/box/displayF6.php?Month=06&Year=09&Location=UUU

Bottom Characteristics: Since the sampling was conducted from the surface, no detailed observations of bottom conditions, underwater visibility, or distribution of bottom habitats were recorded. To review the effectiveness of the coring device, a camera was attached to the coring device near Station 13 (PHOTO 1.) Video can be viewed at or downloaded from: http://www.ecotonesinc.com/09044CarrPointVideos/.

No evidence of eelgrass (*Zostera marina*) or other species of submerged aquatic vegetation was observed on the video or from the boat at shallow locations or retrieved on the boat anchor. Green and brown algae were frequently collected on the boat anchor upon retrieval and visible on the bottom video. Quahogs (*Mercenaria mercenaria*) were collected incidentally in some of the samples and on the boat anchor. Based upon the sampling, it

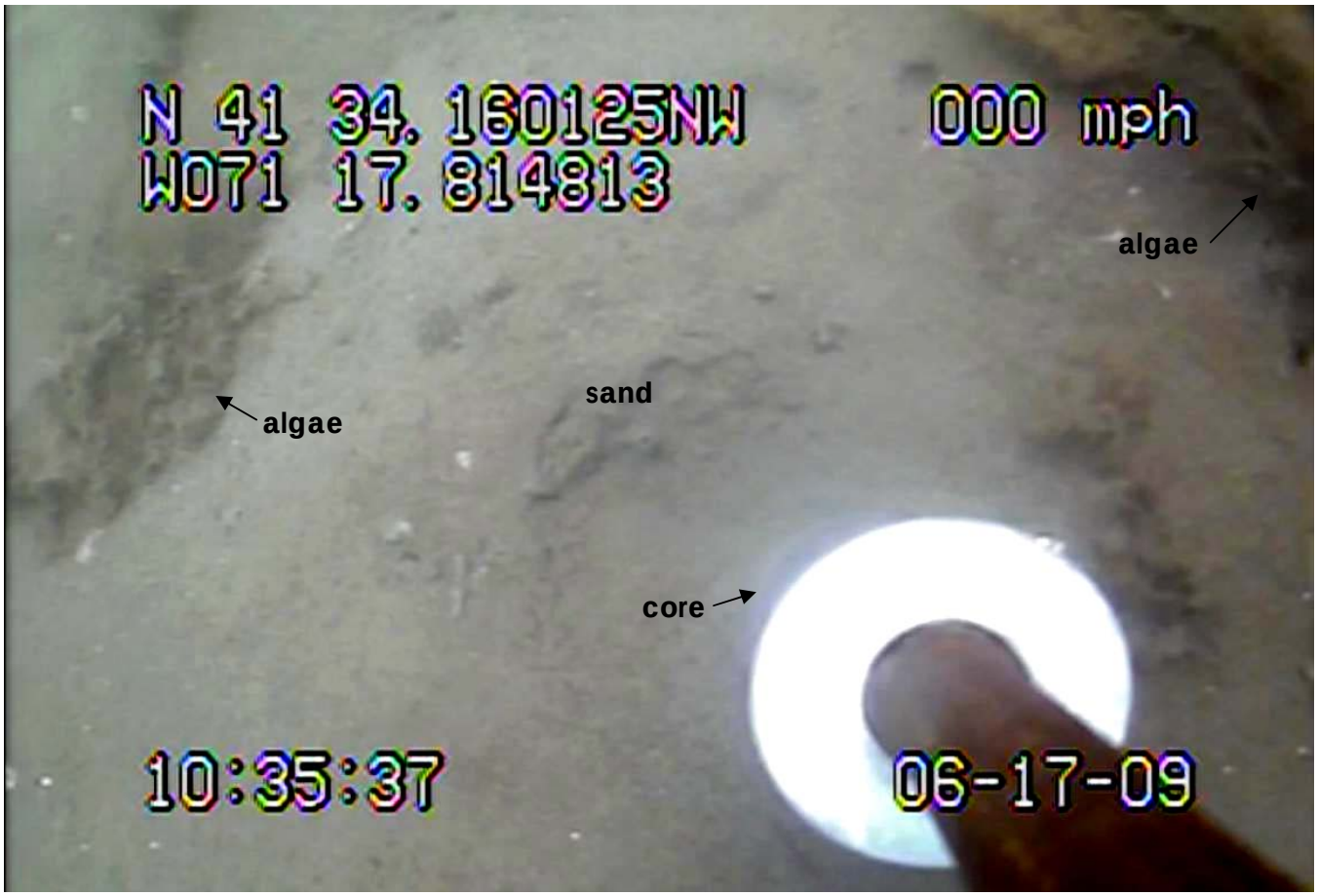
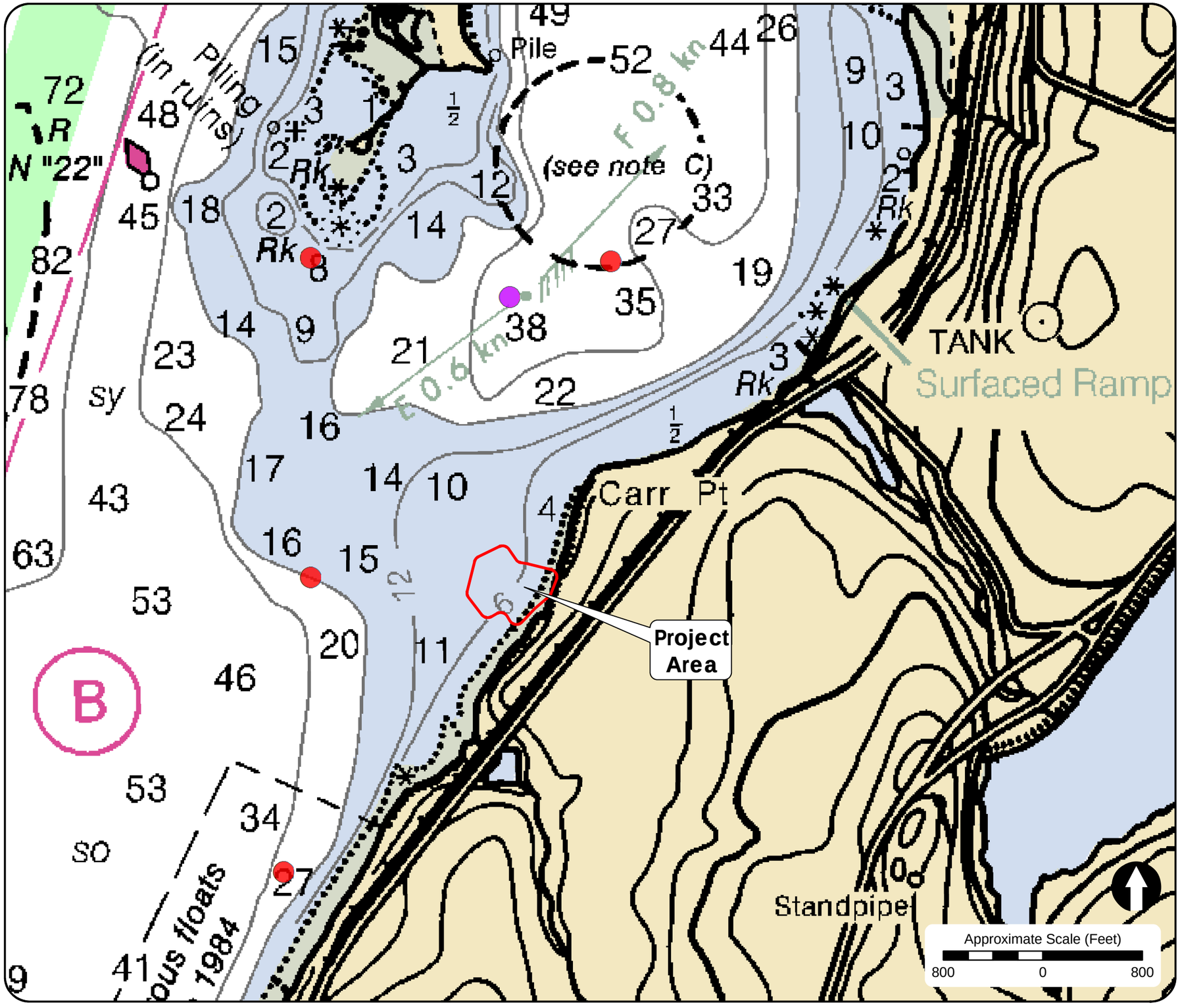


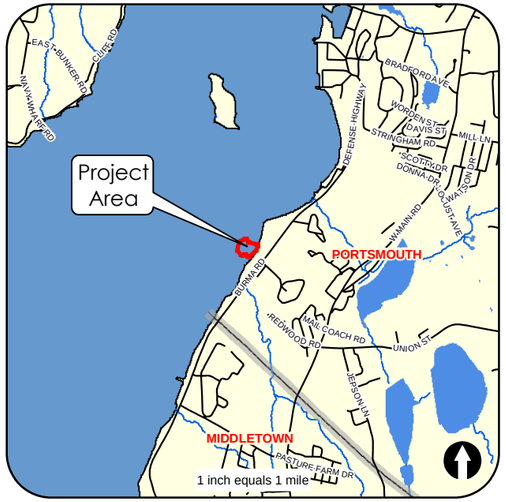
PHOTO 1. Bottom video image at Station 13. Coring device is visible in the lower right with a sand bottom and some algae in the upper left and upper right of the image.

appears that the area is generally sandy on the surface (PHOTO 1) with underlying dense till. Larger boulders and rocks were observed in the southern-most section of the project area and areas further south. There is a large boulder in close proximity to Station 17.

Currents: Currents in the project area appear to be primarily tidally-derived with additional forcing by winds. NOAA Nautical Chart 13221 (NOAA, 2006) reports an ebb tide current of 0.6 knots to the southwest and a flood tide current of 0.8 knots to the northeast. The NOAA current station is approximately 1,970 feet to the north of the project area.

Current speed is at maximum during mid-tide and at minimum at slack low or high tides. Results of current modeling by Spaulding and others (1990) revealed currents up to 0.6 knots in the vicinity of the project area. Flood currents are generally oriented to the northeast and





All feature locations are approximate and represent only a conceptual relationship of depicted features. This data to be used solely for preliminary planning and graphic map display purposes only. Not suitable for navigation, engineering design, legal descriptions, or final determination of jurisdictional determinations.

Map compiled from:
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2) Tetra Tech NUS, Inc. station coordinates 5/21/2009.
3) RIGIS (2009) data.

- Project Area
- Tides & Currents 3.5
- Spaulding & Others (1990)

FIGURE 2.
APPROXIMATE LOCATIONS
OF CURRENT STATIONS

Carr Point, Burma Road
Portsmouth, RI

Project 09044 01 July 2009

ECOTONES, INC.
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ebb currents generally oriented to the southwest. Data derived for 2009 from Nobeltec® Tides & Currents 3.5 software (Jeppesen Marine, Inc., 2006) estimate maximum currents of 0.8 to 0.9 knots. Similar to the NOAA chart and the Spaulding and others data (1990), the Tides and Currents data is generally oriented northeast during flood tide and southwest during ebb tide. The approximate location of all of the current station points area shown on FIGURE 2. A plot of tide stage and associated currents for the maximum tides for 2009 from the Tides & Currents software is shown in FIGURE 3. Plotted curves for the Spaulding and others data (1990) is also depicted for comparison.

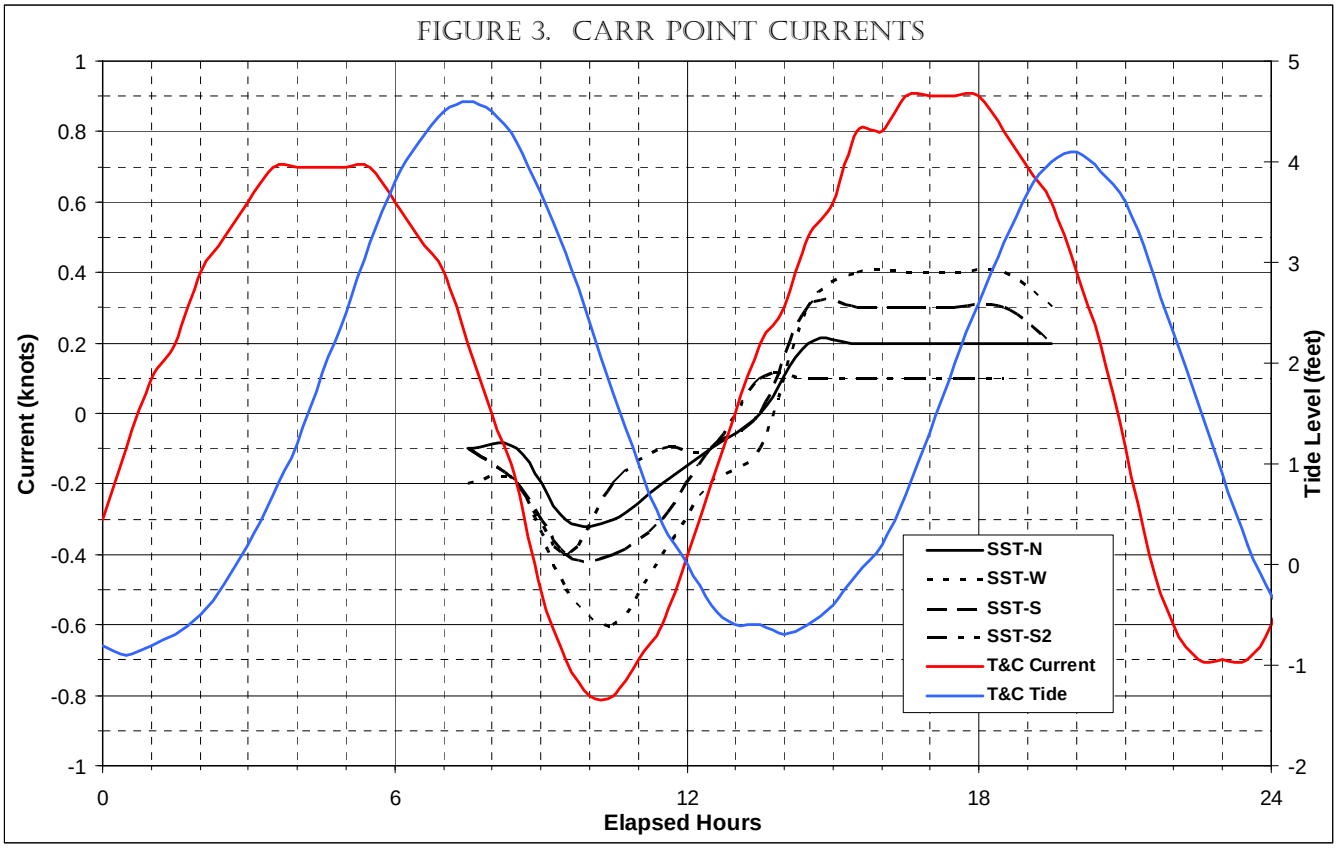

FIGURE 3. Tide level and associated current derived from the Tides & Currents (T&C) software depicted with Spaulding and others (1990) data (SST) for comparison. SST curves are for four separate data points North (N), West (W), and South (S & S2) of the project site.

Estimates of currents during mid-tide conditions were attempted by allowing the boat to drift free and record the start and finish points using the GPS, determining the velocity by dividing the distance traveled by the elapsed time. The attempt to estimate currents during a flood

tide resulted in a current velocity of 3.2 knots. It is important to note that there was a strong breeze from the south-southwest. As such this estimate is presumed to be a gross overestimate more a result of the boat "sailing" in the breeze rather than an actual estimate of the current velocity. An attempt to estimate the current during ebb tide was unsuccessful due to similar southwest winds. Although the tide was ebbing and flow observed to the southwest, the boat did not drift freely with the apparent current. The wind pushed the boat to the northeast against the ebb current.

If you have any questions or require additional information, please contact us at your convenience.

Sincerely,

Joe Klinger
Principal Environmental Scientist
jklinger@ecotonesinc.com

REFERENCES CITED

Spaulding. M., C. Swanson, and C. Turner. 1990. The New Tides & Currents of Narragansett Bay. University of Rhode Island Marine Technical Report No. 35. Second Revision. Rhode Island Sea Grant, Narragansett, RI.

Jeppesen Marine, Inc. 2006. Nobeltec® Tides & Currents Version 3.5.107.

NOAA. 2006. Raster Navigational Chart 13211. NARRAGANSETT BAY RI-MA. Edition 55. Edition Date: 2004-12-01. Issue Date: 2006-03-04. Latest Notice to Mariners 61. Cleared through date: 2006-03-04. US Dept. of Commerce. National Oceanic and Atmospheric Administration (NOAA). National Ocean Service. Coast Survey. Washington, DC.

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APPENDIX 1. EQUIPMENT SPECIFICATIONS

Item	Description
Differential position accuracy	***Horizontal less than 1 m (3.28 ft), if all of the following criteria are met:*** • At least 5 satellites • PDOP <4 • RTCM SC-104 corrections • Standard format broadcast from a Trimble MS750 or equivalent reference station
OmniSTAR HP speed accuracy	0.16 kph (0.1 mph)
OmniSTAR HP position accuracy	***Horizontal 10.0 cm (4.0 in) and vertical 15 cm (6.0 in) after convergence, if all the following criteria are met:*** • At least 5 satellites • PDOP <4 • OmniSTAR HP corrections Convergence time can vary, depending on the initialization method and the environment.
OmniSTAR XP position accuracy	***Horizontal 20 cm (8.0 in) and vertical 30 cm (12.0 in) after convergence, if all the following criteria are met:*** • At least 5 satellites • PDOP <4 • OmniSTAR XP corrections Convergence time can vary, depending on the initialization method and the environment.
Time to first fix	<30 seconds, typical
Multipath mitigation	EVEREST technology
Satellite differential compatibility	OmniSTAR, WAAS, and EGNOS
NMEA messages	GGA[1], GLL, GSA[1], GST, GSV, MSS, PTNLDG, PTNL PJK, PTNL PJT, PTNL VGK, PTNL VHD, PTNLEV, PTNLID, PTNLSM, RMC[1], VGK, VTG[1], ZDA

[1] By default, the receiver is configured to output GGA, GSA, RMC, and VTG messages at a 1 Hz (1 position per second) update rate.

What can I expect for accuracy?

Q. What accuracy can I expect?

A. Accuracy can only be predicted in statistical terms. In general, the accuracy depends on the quality of the GPS receiver used with OmniSTAR; that is, a "Recreational" class GPS will give poorer results than a "commercial quality" receiver. In this case, "poorer" means larger semi-random errors relative to the true position. While you may occasionally experience a small error with this type of receiver, a few minutes later or the next day may give you an error of many meters. The better "Commercial" GPS receivers can achieve horizontal errors of less than a half-meter 67 to 73% of the time, less than a meter 95 to 97% of the time and less than 1.5 meters 99% of the time. Vertical error will be 2 to 2.5 times greater than the horizontal error. OmniSTAR XP and HP horizontal accuracies are normally < +/- 15 cms and < +/- 10 cms respectively > 95% of the time.

APPENDIX

Specifications

Physical Specifications

- **Size:** 4½" H × 4½" W × 2⅜" D (11.43 cm × 11.43 cm × 6.03 cm)
- **Weight:** 9.7 oz. (275 grams), 12.9 oz. (365 grams) with bail mount
- **Display:** 3½" diagonal (8.89 cm), QVGA display with adjustable brightness, 320 × 240 pixels, capable of 4,096 colors
- **Case:** Fully gasketed, high-impact plastic alloy, waterproof to IEC 529 IPX7 standards
- **Temperature Range:** From 5ºF to 131ºF (from -15ºC to 55ºC)
- **Power Source:** 10–33 Vdc
- **Fuse:** AGC/3AG – 3.0 A

Sonar

- **Power:** 150 W (RMS), 1,200 W (peak-to-peak)
- **Sonar Voltage Range:** 10–20 Vdc
- **Frequency:** 80/200 kHz
- **Depth:** 900 feet (275 meters) (Depth capacity is dependent on water salinity, bottom type, and other water conditions.)

Multi-Stage Soil Core Sampler

Technical Data Sheet
page 1 of 2

APPLICATION:
Hand sampling soils and wastes directly from the surface to depths up to 3-ft. Sampling from greater depths is possible by using a pre-augered access hole.

DESCRIPTION:
This stainless steel sampler features a vented top cap, extendable body and coring and auger tip. AMS stainless steel extensions and slide hammer are used for deployment.

The stainless steel Top Cap upper surface is provided with a 5/8-in NC Threaded connection for Extension or Slide Hammer attachment. The lower end is male square threaded for attachment to the sampler body. The Top Cap is provided with a single vent.

The Multi-Stage Base Section is made from 2 3/8-in diameter 300 series stainless steel. Each end is internally square threaded. The 2-in internal diameter allows use of 2-in Liners.

The Multi-Stage Section is similar to the Base Section except that it is male square threaded on one end and female square threaded on the other. It is used to extend the length of the sampler.

The Core Tip is made from hardened 400 series stainless steel with external square threads for attachment to the Multi-Stage Base Section or the Multi-Stage Body Extension. An Auger Tip made from 300 series stainless steel is included in the kit. Alternative Tips are available separately including a Core Tip and Auger Tip each with a butterfly valve.

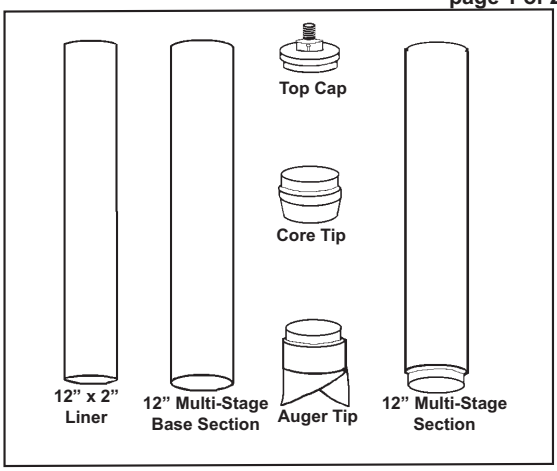
The Sampler is supplied with a single 12-in long x 2-in diameter stainless steel Liner and two Plastic End Caps. A Slip Wrench is also included. This may be used to secure the body while the Top Cap and Tip are being securely threaded.

This sampler is available as a kit including the basic items described above.

USE:
Assembly should always be done with clean sampler components. Take particular care to ensure that the threads are not contaminated. When necessary use sufficent PPE to protect the user from possible site contaminants; as may be specified in a site safety and sampling plan.

Thread the Core or Auger Tip onto the lower end of the Multi-Stage Base Section. Place the Liner inside the Multi-Stage Base Section. Attach the Top Cap to the upper end of the Section. Use the provided Slip Wrench to ensure that the Top Cap and selected Tip threads are tight. The Multi-stage Soil Core Sampler is now ready for deployment.

For collection of samples longer than the basic 12” length add additional Multi-Stage Sections to the Base Section. Use either a single Liner of suitable length or multiple shorter Liners if segmented samples are needed. In loose friable soils or saturated flowing materials an optional Basket Retainer (Core Catcher should be used. This is inserted into the lower end of the Liner before sampler assembly. Note it may be necessary to remove about an 1/8-in from the liner to accomodate the



Basket Retainer.

Drive the the sampler into the material to be sampled for the length of the sampler, using a Slide Hammer with an available Extension. Ensure that all threaded connections are tight, using available adjustable wrenches.

Recover the sampler by reverse hammering with the Slide Hammer. Keeping the sampler vertical remove the top cap using the slip wrench on the sampler body and an adjustable wrench on the Top Cap threaded Extension connection. Push the liner up for an inch or so and place one of the supplied Plastic Caps on the end. Remove the Liner from the sampler Body, then remove the Basket Retainer and attach a Plastic Cap to this end. Mark or label the sample, noting the orientation of the Liner on the Plastic Caps.

The sampler should be cleaned and decontaminated between sampling events. At a minimum it should be soaked in water with a suitable detergent and brushed to remove soil or waste particles. A second rinse in clean water should be done before drying and re-assembly. The Multi-Stage Soil Core Sampler is made entirely from stainless steel and may therefore be acid bathed for decontamination, if this is specified in the site sampling plan.

AVAILABILITY:
Multi-Stage Soil Core Samplers (MSCS) are available as a kit or individual components.

The kit includes a Top Cap,12” Multi-Stage Section, Coring and Auger Tips. A 12” x 2” stainless steel Liner, two plastic End Caps and Slip Wrench are also included. The Multi-Stage Soil Core Sampler is sized by the sampler OD of 2 3/8-in, Liners used are 3/8-in smaller.

Multi-Stage Soil Core Sampler Kit
2 3/8” x 12” Multi-stage Soil Core Sampler Kit #403.27

AMS
105 Harrison
American Falls
Idaho 83211, USA
1-800-635-7330
208-226-2017
fax: 208-226-7280
www.ams-samplers.com
email: ams@ams-samplers.com

Multi-Stage Soil Core Sampler

Components

Component	Part #
2 3/8" MSCS Top Cap 5/8" NC Thread	#403.22
2 3/8" MSCS Base Section	#403.24
2 3/8" MSCS Core Tip	#403.25
2 3/8" MSCS Auger Tip	#403.26
2" x 12" Stainless Steel Liner	#405.14
2" Plastic End Caps (2)	#418.10 (ea)
Slip Wrench	#421.29

Accessories

Component	Part #
2 3/8" MSCS Core Tip w/Valve	#403.28
2 3/8" MSCS Auger Tip w/Valve	#403.29
2 3/8" MSCS Section	#403.23
Slide Hammer 5/8" NC Thread	#400.99
2" White Basket Retainer	#404.90

Ancilliary Items

Component	4130 Steel	Stainless
5-ft Extension, 5/8" NC	#408.04	#409.10
4-ft Extension, 5/8" NC	#408.03	#409.09
3-ft Extension, 5/8" NC	#408.02	#409.08
2-ft Extension, 5/8" NC	#408.01	#409.07
1-ft Extension, 5/8" NC	#408.00	#409.06

Component	Part #
2" x 6" Stainless Liner	#404.31
2" x 12" Stainless Liner	#405.14
2" x 24" Stainless Liner	#406.68
2" x 36" Stainless Liner	#406.70
2" x 6" Brass Liner	#405.16
2" x 12" Brass Liner	#405.12
2" x 24" Brass Liner	#406.60
2" x 36" Brass Liner	#406.62
2" x 6" Plastic Liner	#404.21
2" x 12" Plastic Liner	#405.10
2" x 24" Plastic Liner	#425.20
2" x 36" Plastic Liner	#406.72
2" x 6" Aluminum Liner	#404.16
2" x 12" Aluminum Liner	#405.07
2" x 24" Aluminum Liner	#406.64
2" x 36" Aluminum Liner	#406.66

Fluoropolymer Liners are available in certain sizes only, call for details

Ancilliary Items Continued

Component	Part #
Compact Slide Hammer 5/8" NC Thread	#400.96
Heavy Duty Slide Hammer 5/8" NC Thread	#400.93
16" Rubber Coated Cross Handle	#406.04
12" Adjustable Wrench	#421.10
Fluoropolymer Swatches (50)	#418.17

Note: The Multi-Stage Core Sampler is not available with the Signature Series thread design.

AMS
105 Harrison
American Falls
Idaho 83211, USA

1-800-635-7330
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APPENDIX C

FIELD DOCUMENTATION FORMS

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Driler
DRILLING RIG: CME 55
BORING No.: SB01A
DATE: 5/19/09
GEOLOGIST: D. whalen
DRILLER: J. Fluet

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
S-1 @		5/3	15/		LOOSE	DK BRN	SILT		MOIST				
0747	2	3/3	/24				GRAVEL and SILTY SAND	GM		0	0	0	0
S-2 @		2/2	0/		V. LOOSE		SANDY SILT	SM					
0752	4	2/2	/24							–	0	0	0
S-3 @		3/2	12/				SILT, SOME SAND	ML SM					
0844	6	2/2	/24							0	0	0	0
S-4 @		2/1	14/				SILT TR. CLAY						
0846	8	2/6	/24			LT BRN			Decayed wood Fragment	0	0	0	0
S-5 @		5/6	16/		LOOSE	DK BRN	SANDY SILT SOME GRAVEL	SM	SATURATED				
0905	10	11/15	/24		M. DENSE		(F-C GRAVEL, Phyllite Fragments)	GM		0	0	0	0
S-6 @		23/25	18/				SANDY SILT	SM					
0917	12	25/23	/24				and Rock Fragments (weathered phyllite)	GM		0	0	0	0
S-7 @		20/17	16/				SILT	ML					
0920	14	16/20	/24			ORANGE				0	0	0	0

Sample CRP-SB01-0608

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Drive and wash, split barrel sampler 2" I.D.
140 lb. hammer
Lose water at 8'

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

-moved boring location at 14' b/c the driller was losing too much water and possibly hit too close to an abandoned pipe - moved 10' North - see next page for continued boring log

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Driley
DRILLING RIG: CME 55
BORING No.: SB01(B)
DATE: 5/15/09
GEOLOGIST: D. Whalen
DRILLER: J. Fluet

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0												
	2												
	4												
	6												
	8												
	10												
	12												
	14												
S-1 @		17/14	10/		M. DENSE	DK GRAY	SANDY SILT SOME GRAVEL	SM					
1057	16	16/47	/24		DENSE	↓	(F-C Gravel, Phyllite, sandstone clasts)			0	0	0	0
S-2 @		10/11	14/		M. DENSE	↓	SILT, some SAND SOME GRAVEL, TR. CLAY	SM					
1104	18	14/17	/24		↓	↓				0	0	0	0
S-3 @		38/27	11/		DENSE	↓	GRAVEL and SILTY SAND (F-C GRAVEL)	GM					
1132	20	15/14	/24		M. DENSE	↓	SILT, TR. CLAY	ML		0	0	0	0
S-4 @		18/18	19/		↓	↓	SANDY SILT	SM					
1137	22	23/37	/24		↓	↓	SILT, some GRAVEL (F-C GRAVEL	ML		0	0	0	0
S-5 @		17/18	22/		↓	↓	SILT and GRAVEL (WEATHERED PHYLLITE	GM					
1143	24	19/12	/24		↓	↓	FRAGMENTS)			0	0	0	0
S-6 @ 1322		26/23			↓	↓	V. WEATHERED SHALE/ PHYLLITE						

Sample CRP-SB01-20272

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Drive and Wash, split barrel sampler 2" I.D. 140 lb. hammer

Converted to Well: Yes ✓ No _____ Well I.D. #: MW01

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilly
DRILLING RIG: CME 55

BORING No.: SB01
DATE: 5/19/09
GEOLOGIST: D. Whalen
DRILLER: J. Flute

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
sample CRP-SB01-2028	26	22/37				DK. GRAY	WEATHERED PHYLLITE and SILT	GM		0	0	0	0
5-7 @		29/30	19/24		M. DENSE	↓	SANDY SILT to SILTY SAND SOME GRAVEL	↓					
1331	28	28/26			↓	↓	(PHYLLITE FRAGMENTS)	↓		0	0	0	0
5-8 @		100/3		W=11=11			PHYLLITE						
1348													

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ✓ No _____ Well I.D. #: MW01

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilex
DRILLING RIG: CME55
BORING No.: SB02
DATE: 5/20/09
GEOLOGIST: D. Whalen
DRILLER: J. Fluet

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
S-1 @		3/3	23/		V. LOOSE	DK BRN	SILT, TR SAND	ML	MOIST, NO ODOR				
0807	2	4/6	/24		LOOSE	BRN	SANDY SILT/ SILTY SAND	SM		0	0	0	0
S-2 @		7/8	11/				SANDY SILT and GRAVEL	SM/GM					
0810	4	6/8	/24				(F-C GRAVEL)			0	0	0	0
S-3 @	5	13/100/5	8/11			DK GRAY	SANDY SILT, SOME GRAVEL SANDSTONE FRAGMENT	SM/ML					
0847	6	~~35/67~~							NO ODOR	0	0	0	0
S-4 @		~~35/67~~	17/				GRAVEL, some SANDY SILT (PHYLLITE, SANDSTONE)	GM					
0921	8	40/40	/24			BRN + GRAY	GRAVEL in SILTY SAND (F-C Gravel)	GM		0	0	0	0
S-5 @		32/77	15/				F-C GRAVEL, SOME SANDY SILT						
0948	10	34/25	/24				(PHYLLITE, QUARTZ, SANDSTONE)			0	0	0	0
S-6 @		21/21	19/		M. DENSE		GRAVEL in SILTY SAND (F-C GRAVEL, F-C SAND)		NO ODOR				
0951	12	23/19	/24			DK				0	0	0	0
S-7 @		20/20	24/			GRAY	GRAVEL, SOME SANDY SILT						
1006	14	34/32	/24							0	0	0	0
S-8 @		20/8	12/				SILT, TR CLAY, SOME	ML					
1048	16	6/15	/24				GRAVEL (F-C) (densely packed)		NO ODOR	0	0	0	0
S-9 @		15/17	11/				SILTY SAND, SOME	SM					
1059	18	15/16	/24				GRAVEL			0	0	0	0
S-10 @		13/11	6/				SILTY SAND/SANDY SILT	SM					
1125	20	11/8	/24				SOME GRAVEL, TR. CLAY (PHYLLITE CHIPS)			0	0	0	0
S-11 @		10/12	18/						NO ODOR				
1128	22	13/12	/24							0	0	0	0
S-12 @		11/11	15/										
1132	24	8/15	/24				WEATHERED PHYLLITE			0	0	0	0
S-13 @ 1155		13/13	18/24				SILT, SOME SAND	ML					

Sample CRP-SB02-0810 (S-5 @ 0948)

Sample CRP-SB02-1048 (S-9 @ 1059)

Sample CRP-SB02-2426 (S-13 @ 1155)

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Drive and Wash, 2" split barrel sampler, 140lb. hammer.

Drilling Area Background (ppm): 0

Converted to Well: Yes ✓ No _____ Well I.D. #: MW 02

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Driler
DRILLING RIG: CME 55
BORING No.: SB02
DATE: 5/20/09
GEOLOGIST: D. Whalen
DRILLER: J. Fluet

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	26	16 / 100/5				DK GRAY	SILT, SOME SAND	ML		0	0	0	0
				11=11=11			PHYLLITE						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Drive and wash, 2" split barrel sampler, 140 lb. hammer

Converted to Well: Yes ✓ No _____ Well I.D. #: MW02

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilly
DRILLING RIG: CME 55
BORING No.: SB03
DATE: 5/21/09
GEOLOGIST: D. Whalen
DRILLER: J. Fluet

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
S-1 @	0	11/15	17/				GRAVEL, some SILTY SAND	GM	MOIST, NO ODOR				
1124	2	17/9	/24			BRN + GRY	SILT, TR SAND	ML		0	0	0	0
S-2 @		8/7	0/		LOOSE	—	—	—					
1127	4	8/9	/24			—	—	—					
S-3 @		7/5	15/			BRN	SILTY FINE SAND	SM					
1145	6	6/6	/24			DK GRAY	SILT, some GRAVEL	ML	NO ODOR	0	0	0	0
S-4 @		6/10	16/				TR. CLAY; TR. F SAND						
1147	8	11/18	/24		M. DENSE					0	0	0	0
S-5 @		16/14	15/				SANDY SILT, some GRAVEL	ML					
1214	10	14/16	/24				SANDY SILT / SILTY	SM		0	0	0	0
S-6 @		17/55	12/		DENSE		SAND TR. CLAY some GRAVEL		Air ODOR				
1219	12	100/4"	/16		DENSE		GRAVEL, some SILTY SAND	GM	Spoon Refusal Discolored, weathered GRAVEL	0	0	0	0
S-7 @		45/63	16/			DK GRAY, BRN.	GRAVEL and ROCK FRAGS. some SILTY SAND	GM	No ODOR				
1236	14	55/66	/24			YELLOW	(F-C GRAVEL, PHYLLITE Fragments			0	0	0	0
S-8 @		42/37	16/			BRN +	SILTY SAND some GRAVEL, some PHYLLITE	SM/GM					
1252	16	40/50	/24			GRAY	FRAGMENTS		NO ODOR	0	0	0	0
S-9 @		27/23	14/		M. DENSE		SANDY SILT / SILTY SAND some GRAVEL	SM					
1321	18	23/23	/24				(FINE SAND)			0	0	0	0
S-10 @		39/33	11/		DENSE	DK GRAY	SANDY SILT, some ROCK FRAGMENTS (Phyllite)	ML					
1344	20	29/23	/24							0	0	0	0
S-11 @		29/31	13/				~~SANDY~~ SILT and ROCK FRAGMENTS (Phyllite)	ML	NO ODOR				
1430	22	31/31	/24				TR. GRAVEL			0	0	0	0
S-12 @		31/31	17/										
1436	24	27/40	/24							0	0	0	0
S-13 @ 1521		25/40	15/24										

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Drive and Wash, 2" split barrel sampler, 140 lb. hammer

Drilling Area Background (ppm): 0

Converted to Well: Yes ✓ No _____ Well I.D. #: MW03

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilex
DRILLING RIG: CME 55
BORING No.: SB03
DATE: 5/21/09
GEOLOGIST: D. Wahler
DRILLER: J. Flurt

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	26	35/35				DK GRAY	SILT and rock FRAGS. (weathered Phyllite)	ML	NO ODOR	0	0	0	0
S-14 @	~~27~~ 30	33/34	16/			↓	↓	↓	↓				
1530	~~28~~ 28	37/58	/24				WEATHERED PHYLLITE			0	0	0	0
S-15 @	29	58/84	10/				SILT and WEATHERED						
1540	30	100/2	/14				Phyllite		SPOON REFUSAL @ 29'	0	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Drive and wash, 2" split barrel sampler, 140 lb. hammer

Converted to Well: Yes ✓ No _____ Well I.D. #: MW03

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilex
DRILLING RIG: CME 55
BORING No.: SB04
DATE: 5/28/09
GEOLOGIST: D. Whalen
DRILLER: J. Flint

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0												
S-1 @		5 / 9	16/		LOOSE	BLACK GRAY	ASPHALT PAVEMENT GRAVEL		Auger through asphalt				
1133	2	6 / 4	/24			DK. BRN	SANDY SILT SOME GRAVEL	SM	MOIST	0.8	0	0	0
S-2 @		5 / 4	10/		V. LOOSE	DK							
1137	4	3 / 2	/24			GRAY				5.3	0	0	0
S-3 @		3 / 2	14/			GRY-BRN	SILT, SOME CLAY, SOME GRAVEL	ML					
1148	6	2 / 3	/24			DK BRN	PEAT		SOME plant roots	15.2	0	0	0
S-4 @		3 / 3	15/				SILT, TR. CLAY						
1151	8	8 / 12	/24		M. DENSE	BRN-GRAY	SILTY SAND/SANDY SILT	SM	WET	0.9	0	0	0
S-5 @		19 / 21	17/										
1207	10	21 / 21	/24				SILT	ML		0	0	0	0
S-6 @		20 / 21	11/			DK BRN-GRAY	F SAND, TR. SILT	SP	SATURATED NO ODOR				
1211	12	24 / 19	/24				GRAVEL (F-M GRAVEL) GRAVEL and SANDY SILT	GM		0	0	0	0
S-7 @		12 / 15	11/				F-C SAND, TR. SILT	SW					
1217	14	20 / 29	/24				SILT, SOME CLAY, SOME GRAVEL	ML		0	0	0	0
S-8 @		32 / 39	17/		DENSE	BRN + GRAY	SILT, SOME CLAY						
1243	16	20 / 21	/24		M. DENSE		SOME WEATHERED PHYLLITE		NO ODOR	0	0	0	0
S-9 @		19 / 13	15/			DK. GRAY	WEATHERED PHYLLITE FRAGS						
1248	18	10 / 15	/24				SILT, TR. CLAY	ML		5.1	0	0	0
S-10 @		17 / 15	16/				SILT, SOME CLAY and ROCK FRAGS						
1307	20	15 / 17	/24				SILTY SAND (F-M SAND)	SM		0	0	0	0
S-11 @		16 / 20	16/				SILTY SAND (F-C SAND)		NO ODOR				
1313	22	32 / 37	/24		DENSE		SILT, SOME CLAY	ML		0	0	0	0
S-12 @		27 / 34	16/				SANDY SILT ~~SILTY SAND~~, SOME GRAVEL	SM					
1318	24	25 / 29	/24		M. DENSE		TR. CLAY (F-C GRAVEL)			0	0	0	0
S-13 @ 1339		15 / 17	16/24				SILT SOME ROCK FRAGS	ML					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Drive and Wash, 2" split barrel sampler, 140 lb. hammer

Converted to Well: Yes ✓ No _____ Well I.D. #: MW 04

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drillex
DRILLING RIG: CME 55
BORING No.: SB04
DATE: 5-28-09
GEOLOGIST: D. Whalen
DRILLER: J. Flvet

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	26	20/16			M. DENSE	Dk GRAY	SILT, TR. CLAY SOME ROCK FRAGMENTS	ML	NO ODOR	0	0	0	0
S-14 @		15/20	15/				SILT (Poorly Packed)						
1344	28	22/32	/24				SOME PHYLLITE FRAGS			0	0	0	0
S-15 @		10/12	15/				SILT and weathered phyllite FRAGMENTS						
1355	30	18/20	/24				TR. CLAY			0	0	0	0
S-16 @		18/20	15/						NO ODOR				
1402	32	23/28	/24							0	0	0	0
S-17 @		25/23	14/										
1407	34	24/22	/24							0	0	0	0
S-18 @		18/100/5	11/11				WEATHERED PHYLLITE						
	36												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Drive and wash, 2" split barrel sampler, 140 lb. hammer

Drilling Area Background (ppm): 0

Converted to Well: Yes ✓ No _____ Well I.D. #: MW04

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilex
DRILLING RIG: CME 55

BORING No.: SB05
DATE: 5/27/09
GEOLOGIST: D. whalen
DRILLER: J. Fiuet

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
S-1 @	0	5/13	18/24		LOOSE	DK BRN	SANDY SILT		MOIST, NO ODOR				
0803	2	14/5				BRN-GRY	SILTY SAND	SM		0	0	0	0
S-2 @		3/4	18/24				SILT	ML	slight petroleum odor 2.5'				
0810	4	8/10				LT. BRN	SILTY SAND (F SAND)	SM	NO ODOR	4.3	0	0	0
S-3 @		10/10	16/24			BRN	SILT ~~w/~~ SAND SOME	ML					
0812	6	11/14			M. DENSE				MOIST NO ODOR	0	0	0	0
S-4 @		14/14	14/24			BRN-GRAY	SILT, TR. CLAY						
0845	8	13/15								0	0	0	0
S-5 @		12/14	17/24			BRN GRAY							
0921	10	19/22							rock fabric visible	0	0	0	0
S-6 @		22/28	16/24			GRAY + ORANGE BRN	SILT, TR. CLAY SOME ROCK FRAGMENTS		MOIST NO ODOR				
0926	12	28/28					(densely packed)			0	0	0	0
S-7 @		31/27	16/24										
0935	14	30/37								0	0	0	0
S-8 @		10/10	12/24				SILT, TR. ~~CLAY~~ to SOME CLAY						
0948	16	12/15				GRAY			rock fabric visible NO ODOR	0	0	0	0
S-9 @		12/15	10/24				SOME WEATHERED PHYLLITE FRAGS						
0952	18	11/21								0	0	0	0
S-10 @		10/12	12/24										
1006	20	12/12								0	0	0	0
S-11 @		15/20	16/24						NO ODOR				
1012	22	20/36								0	0	0	0
S-12 @		27/27	18/24										
1019	24	24/22								0	0	0	0
S-13 @ 1023		14/18	15/24										

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Drive and Wash, 2" split barrel sampler, 140 lb. hammer

Converted to Well: Yes ✓ No _____ Well I.D. #: MW05

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilex
DRILLING RIG: CME 55

BORING No.: SB05
DATE: 5-27-09
GEOLOGIST: D. whalen
DRILLER: J. Flvet

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	26	17/21			M. DENSE	GRAY	SILT, TR. to SOME CLAY	ML	MOIST NO ODOR	0	0	0	0
S-14 @		18/30	16/24				Rock Fabric Visible						
1039	28	32/30								0	0	0	0
S-15 @		12/20	16/24										
1047	30	24/44			DENSE	ORANGE BRN				0	0	0	0
S-16 @	31	27/60				GRAY	weathered PHYLLITE			0	0	0	0
1140		120/3											

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Drive and wash, 2" split barrel sampler, 140 lb. hammer

Converted to Well: Yes ✓ No _____ Well I.D. #: MW05

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilex
DRILLING RIG: CME 55

BORING No.: SB06
DATE: 5-27-09
GEOLOGIST: D. Whalen
DRILLER: J. Fluet

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
S-1 @		3 / 2	17/		V. LOOSE	DK BRN	SILTY SAND	SM	MOIST, NO ODOR				
1355	2	3 / 43	/24			↓ GRAY-	SANDY SILT CONCRETE		Auger through concrete	0	0	0	0
S-2 @		15 / 15	8/		M. DENSE	BRN	SILTY SAND	SM	MOIST NO ODOR				
1409	4	15 / 15	/24							0	0	0	0
S-3 @		16 / 12	14/			Lt. BRN +	SILT	ML					
1451	6	14 / 17	/24			GRAY			NO ODOR	0	0	0	0
S-4 @		24 / 30	18/			Lt. BRN							
1456	8	25 / 17	/24			BRN	SANDY SILT, SOME GRAVEL			0	0	0	0
S-5 @		15 / 16	17/			+GRAY	SILT, SOME CLAY SOME ROCK FRAGMENTS		Mottled				
1521	10	24 / 24	/24						WET	0	0	0	0
S-6 @		20 / 26	17/						NO ODOR				
1528	12	23 / 30	/24			BRN	SILTY SAND/ SANDY SILT, SOME GRAVEL (F-C Gravel)	SM		0	0	0	0
S-7 @		31 / 46	16/										
1531	14	29 / 20	/24							0	0	0	0
5/28 S-8 @		21 / 25	12/			GRAY	SILT, SOME CLAY	ML					
0730	16	25 / 25	24				SOME ROCK FRAGMENTS (densely packed)		NO ODOR	0.5	0	0	0
S-9 @		19 / 18	23/										
0734	18	20 / 20	/24							4.1	0	0	0
S-10 @		18 / 21	18/			DK GRAY							
0809	20	19 / 21	/24				• WEATHERED PHYLLITE			0.7	0	0	0
S-11 @		20 / 20	15/				SILT, TR. CLAY SOME ROCK FRAGMENTS		NO ODOR				
0813	22	25 / 23	/24							4.2	0	0	0
S-12 @		20 / 25	18/										
0822	24	30 / 30	/24							13.8	0	0	0
S-13 @ 0837		100/6	6/6	refusal			WEATHERED PHYLLITE		BEDROCK	4.6	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Drive and Wash, 2" split barrel sampler, 140 lb. hammer

Converted to Well: Yes ✓ No _____ Well I.D. #: MW06

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carnpoint
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilex
DRILLING RIG: CME 55

BORING No.: SB07
DATE: 5-26-09
GEOLOGIST: D. whalen
DRILLER: J. Flute

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0												
S-1 @		4 / 8	16/		LOOSE	DK BRN	SANDY SILT, SOME GRAVEL	SM	MOIST, NO ODOR				
1308	2	11 / 11	/24		M. DENSE	GRAY-BRN	F SAND, TR. SILT	SM		0	0	0	0
S-2 @		17 / 24	16/			GRAY + BRN	GRAVEL and SILTY SAND (F-C GRAVEL)	GM					
1314	4	25 / 25	/24				ROCK FRAGMENTS			0	0	0	0
S-3 @		10 / 8	18/		LOOSE	BRN	SANDY SILT and GRAVEL	SM/GM	WET				
1324	6	8 / 10	/24				(F-C GRAVEL)		NO ODOR	0	0	0	0
S-4 @		15 / 16	7/		M. DENSE				~~SATURATED~~ WET				
1333	8	16 / 18	/24							0	0	0	0
S-5 @		10 / 15	18/			BRN	SILTY SAND, SOME GRAVEL (F-C GRAVEL)	SM	SATURATED				
1340	10	14 / 16	/24							0	0	0	0
S-6 @		28 / 43	19/		DENSE		SANDY SILT, SOME GRAVEL (F-C GRAVEL) (densely packed)		NO ODOR				
1356	12	43 / 65	/24		V. DENSE					0	0	0	0
S-7 @		26 / 29	18/		DENSE	DK. GRAY + BRN	ROCK FRAGMENTS (weathered PHYLLITE) and SANDY SILT						
1411	14	44 / 47	/24							0	0	0	0
S-8 @		23 / 38	18/			DK. GRAY	SILT	ML					
1430	16	43 / 47	/24			DK GRAY	WEATHERED PHYLLITE		NO ODOR	0	0	0	0
S-9 @ 1540	17	47 / 100/2	8/8										

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 4 1/4" I.D. Hollow Stem Auger, 2" split barrel sampler, 140 lb. hammer

Converted to Well: Yes ✓ No ____ Well I.D. #: MW 07

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilex
DRILLING RIG: CME 55
BORING No.: SB08
DATE: 5/26/09
GEOLOGIST: D. Whalen
DRILLER: J. Flurt

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
S-1 @		4/8	10/		LOOSE	DK BRN	SANDY SILT SOME GRAVEL		MOIST, NO ODOR				
0909	2	6/6	/24							0	0	0	0
S-2 @		5/7	0/			—	—	—					
0911	4	11/12	/24		M. DENSE	—	—	—		-	0	0	0
S-3 @		11/14	15/			BRN/ DK.	SILT, TR. to SOME SAND	ML					
0930	6	12/12	/24			GRAY			NO ODOR	0	0	0	0
S-4 @		14/17	15/			DK. BRN	SILTY SAND, SOME GRAVEL and ROCK FRAGMENTS (F SAND	SM					
0934	8	21/22	/24							0.5	0	0	0
S-5 @		23/22	17/				F-C GRAVEL)						
1005	10	20/20	/24				SILT	ML		0	0	0	0
S-6 @		20/30	14/			BRN	SANDY SILT / SILTY SAND SOME GRAVEL	SM	NO ODOR				
1011	12	40/42	/24		DENSE		(DENSELY PACKED) (F-C GRAVEL)			0	0	0	0
S-7 @		38/56	16/		V. DENSE	BRN + GRAY	SILT, SOME SAND (DENSELY PACKED)	ML					
1022	14	54/60	/24				SOME F-M GRAVEL			24	0	0	0
S-8 @		17/19	17/		M. DENSE								
1102	16	19/27	/24			BRN	SILTY SAND (F SAND) SILT	SM	NO ODOR	0.7	0	0	0
S-9 @		24/28	14/			DK.	SILT and ROCK FRAGS	ML					
1108	18	38/100/3	/24		DENSE	GRAY	(weathered PHYLLITE)			0	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Drive and Wash, 2" split barrel sampler, 140 lb. hammer

Drilling Area Background (ppm): 0

Converted to Well: Yes ✓ No _____ Well I.D. #: MW 08

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilex
DRILLING RIG: CME 55

BORING No.: SB09
DATE: 5-18-09
GEOLOGIST: D. whalen
DRILLER: J. Fivet

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
S-1		2/2	10/24		V. LOOSE	DK BRN	SILT, TR SAND	ML	MOIST				
@ 0927	2	2/2			↓	↓	↓	↓	↓				
S-2 @		3/5	21/24		↓								
0931	4	6/6			LOOSE		↓			0	0	0	0
S-3		1/2	12/24		↓		SILT, SOME FINE GRAVEL and Rock FRAGMENTS						
@ 0935	6	3/2			↓	↓				0	0	0	0
S-4 @		2/6	17/24		LOOSE	GRAY BRN	SILT, SOME SAND						
0939	8	8/9			↓	DK GRAY	SILT, TR. SAND SOME F-M GRAVEL	↓	↓	0	0	0	0
S-5 @		8/10	15/24		↓	DK GRAY	SANDY SILT, SOME F-M GRAVEL	ML/SM					
1021	10	12/18			M DENSE	↓				0	0	0	0
S-6 @		12/21	13/24		↓	↓	F-M GRAVEL and SILTY SAND	GM					
1025	12	16/20			↓	↓	↓			0.6	0	0	0
S-7 @		20/21	14/24		↓	BRN	SILTY SAND, SOME GRAVEL	SM					
1031	14	17/18			↓	DK GRAY				0.5	0	0	0
S-8 @		7/6	10/24		LOOSE	DK GRAY	ROCK FRAGMENTS	GM					
1100	16	5/5			↓	↓	SILTY CLAY			0	0	0	0
S-9 @		7/14	9/24		M DENSE	↓	F-M GRAVEL and SILTY SAND	GM					
1103	18	11/8			↓	↓	↓			0.5	0	0	0
S-10 @		7/7	9/24		LOOSE	↓	SILTY SAND, SOME GRAVEL and Rock FRAG (F-C SAND)	SM					
1122	20	7/7			↓	↓	↓			0	0	0	0
S-11 @		8/9	7/24		↓	↓	↓	SM					
1128	22	10/12			M. DENSE	↓	(SHALE FRAGMENTS)			0.1	0	0	0
S-12 @		12/15	12/24		↓	↓	SILTY SAND/SANDY SILT SOME GRAVEL	SM					
1131	24	15/17			↓	↓	F-C SAND			0	0	0	0
S-13 @ 1138		37/37	15/24		DENSE	↓	SANDY SILT and GRAVEL	SM					

Sample CRP-SB09-0608

Sample CRP-SB09-0214

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Drive and wash ; split barrel sampler 2" I.D 140lb. hammer

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Driley
DRILLING RIG: CME 55
BORING No.: SB09
DATE: 5/18/09
GEOLOGIST: D. Whalen
DRILLER: J. Fivet

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	26	36/24			DENSE	DK GRAY	(F-C GRAVEL)			0	0	0	0
S-14 @		18/17	17/				SILTY SAND to SANDY SILT	SM					
1208	28	20/24	/24							0	0	0	0
S-16 @		27/30	12/		M. DENSE		SILTY SAND/SANDY SILT, SOME GRAVEL	SM					
1232	30	40/25	/24				(F-C GRAVEL)			0	0	0	0
S-18 @		31/53	13/		DENSE		F-C GRAVEL and SILTY SAND	GM					
1241	32	32/27	/24				SILT	ML		0	0	0	0
S-19 @		32/31	24/				SILTY SAND	SM					
1250	34	35/34	/24		DENSE		SOME GRAVEL (F-C GRAVEL)			0	0	0	0
S-20 @		16/14	14/		M. DENSE		SANDY SILT / SILTY SAND, SOME GRAVEL						
1325	36	16/19	/24							0	0	0	0
S-21 @		19/32	20/										
1335	38	53/44	/24		DENSE					0.6	0	0	0
S-22 @		22/86	14/		V. DENSE		SILT	ML					
1415	40	100/2	/14						WEATHERED PHYLLITE BEDROCK	0	0	0	0

Sample CRP-SB09-3540 DUP 02

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Drive and wash; split barrel sampler, 2" I.D. 140 lb. hammer

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilex
DRILLING RIG: CME 55

BORING No.: SB10
DATE: 5/20, 5/21/09
GEOLOGIST: D. Whalen
DRILLER: J. Fluet

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0												
S-1 @		13/9	7/		LOOSE	DK BRN	SANDY SILT, SOME GRAVEL		MOIST, NO ODOR				
1359	2	6/4	/24				CF-C GRAVEL						
S-2 @		3/4	10/				SILT, SOME SAND SOME GRAVEL						
1402	4	5/7	/24			DK GRAY				0	0	0	0
S-3 @		8/5	16/			BRN	SILT, SOME SAND TR. CLAY, SOME GRAVEL						
1424	6	6/8	/24						NO ODOR	0	0	0	0
S-4 @		15/17	14/		M. DENSE		SANDY SILT, SOME GRAVEL						
1428	8	19/23	/24							0	0	0	0
5/21 S-5 @		26/36	16/			DK GRAY	PHYLLITE FRAGMENTS, SOME SILTY SAND						
0750	10	32/32	/24			+ DK BRN				0	0	0	0
S-6 @		30/32	16/		DENSE		SILTY SAND, SOME GRAVEL (F-C SAND)	SM/GM	NO ODOR				
0755	12	44/39	24				and Phyllitic Fragments			0	0	0	0
S-7 @		20/11	15/		M. DENSE								
0759	14	20/21	/24			DK. GRAY	SILT, SOME GRAVEL	ML		0	0	0	0
S-8 @		18/18	12/				SILTY SAND, SOME GRAVEL (F SAND)	SM					
0836	16	15/23	/24						NO ODOR	0	0	0	0
S-9 @		21/18	17/				SILT, TR. SAND	ML					
0847	18	16/100/4	/24				PHYLLITE FRAGMENTS			0	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Drive and wash, 2" split barrel sampler, 140 lb. hammer

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Carr Point
PROJECT NUMBER: 00870
DRILLING COMPANY: Drilex
DRILLING RIG: CME 55
BORING No.: SB11
DATE: 5/22/09
GEOLOGIST: D. Whalen
DRILLER: J. Fiver

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
S-1 @	0	9/9	21/24		LOOSE	DK BRN	SILTY SAND, SOME GRAVEL	SM	MOIST, NO ODOR				
0739	2	8/9											
S-2 @		9/14	14/24							0	0	0	0
0743	4	18/14				Black	Asphalt Fragments						
S-3 @		14/8	16/24			BRN	SILT, tr. to some SAND	ML		0	0	0	0
0821	6	5/6							NO ODOR				
S-4 @		6/9	9/24			BRN, GRAY, TAN	SANDY SILT, ~~some~~ and GRAVEL (F-C Gravel)	GM		0.1	0	0	0
0823	8	10/19			M. DENSE								
S-5 @		31/26	11/24							0	0	0	0
0848	10	22/21					~~SAND, some SILT~~						
S-6 @		10/9	14/24		LOOSE	DK BRN	SAND, ~~some~~ SILT TRACE (F-M SAND)	SM	NO ODOR	0	0	0	0
0854	12	8/9											
S-7 @		14/14	24/24							0	0	0	0
0858	14	20/26			M. DENSE	BRN-GRAY	SILT, some SAND	ML					
S-8 @		35/22	17/24			BRN	SILTY SAND	SM		0	0	0	0
0930	16	16/20				DK GRAY	SILT, TR. CLAY (densely packed)	ML	NO ODOR				
S-9 @		28/28	15/24							0	0	0	0
0936	18	22/50			DENSE		ROCK FRAGMENTS, some SILT, TR CLAY (PHYLLITE fragments)						
S-10 @ 0944	19	50/99	10/12		V. DENSE					0	0	0	0
S-11 @	20	53/58	11/17			DK. GRAY							
1000	2.5	100/5		EOB			WEATHERED PHYLLITE						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Drive and Wash, 2" split barrel sampler, 140 lb. hammer

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

TETRA TECH NUS, INC.

PURGE DATA SHEET - "LOW STRESS" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: CRP-~~Gw~~ MW01 - 0609

Tetra Tech NUS Charge No. 112G00870
QC: _____ (If applicable)

Sample Method: Low Stress (flow) with Bladder Pump
Depth Sampled: 14 ft bgs Screen Int. Depth 5-15 ft bgs
Sample Date & Time: 6 / 1 /2009 1510 hours ____ (Dup Time)
Sampler(s): L. Anderson
Data Recorded By: L. Anderson Signature: L. Anderson
Well Diameter/Total Depth 2" (ft below TOR); Stickup NA;
Visual Evidence of Sheen (Yes/No) ____;
Olfactory Evidence of Odor (Yes/No) ____;
Weather: sunny, windy, 70s

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group A/B/C/D
Pre-tubing insertion WL ____ ft btor; Post tubing insertion WL 12.03 ft btor

Lab Analyses (Circle Applicable):
1. VOC/GRO 2. SVOC/DRO 3. Pesticides/PCBs
4. Metals (total) 5. Metals (dissolved)

BZ=Breathing Zone, W=Well, PW=Purge Water

Clock Time 24hr	Water Depth (ft below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP mV	Salinity (ppth)	Turbitity (NTU)	Comments
1340	12.03	CPM4, 10/5										
1350	12.52	CPM4, 11/4	180		14.23	535	2.01	6.46	-226.0	0.25	141	
1405	12.80	↓	50		12.26	341	1.98	6.45	-133.8	0.16	140	
1410	12.75	CPM4, 8/7	100		13.01	322	2.45	6.41	-97.2	0.15	114	
1415	12.75		100		12.56	299	3.38	6.43	-52.6	0.14	52.9	
1425	12.76		100		12.55	296	3.43	6.42	-52.5	0.14	18.7	
1430	12.79		100	~1 gal	12.09 → ~~12.55~~	243	5.55	6.29	18.0	0.12	8.73	
1440	12.81		100		12.02	239	5.87	6.34	19.9	0.11	7.29	
1445	12.84		100		12.01	237	5.99	6.33	24.4	0.11	4.63	
1450	12.86		100		11.98	236	6.16 ~~6.33~~	6.33	26.5	0.11	4.86	
1455	12.87		100	~2.5	12.03	235	6.18	6.33	26.0	0.11	5.67	
End Purge, Stabilization Achieved in accordance with QAPP												

TtNUS Form 0009 (modified)

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot.

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

18.20'

TETRA TECH NUS, INC.

PURGE DATA SHEET - "LOW STRESS" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: ~~MW02~~ CRP-MW02-0609

Tetra Tech NUS Charge No. 112G00870 Page 1 of
QC: N/A (If applicable)

Sample Method: Low Stress (flow) with Bladder Pump
Depth Sampled: 17' ft bgs Screen Int. Depth 8-18 ft bgs
Sample Date & Time: 6 / 2 /2009 1355 hours N/A (Dup Time)
Sampler(s): M. Horton
Data Recorded By: M. Horton Signature: M Horton
Well Diameter/Total Depth 2" 18.20 (ft below TOR); Stickup -0.23; Stick Down
Visual Evidence of Sheen (Yes/No) ;
Olfactory Evidence of Odor (Yes/No) ;
Weather: Cloudy 65°

PID BZ=0.0 / W= / PW= PPM. Field Instrument Group A/B/C/D
Pre-tubing insertion WL 11.24 ft btor; Post tubing insertion WL 11.18 ft btor
Total Depth 18.20'

Lab Analyses (Circle Applicable):
1. VOC/GRO 2. SVOC/DRO 3. Pesticides/PCBs
4. Metals (total) 5. Metals (dissolved)

BZ=Breathing Zone, W=Well, PW=Purge Water

Clock Time 24hr	Water Depth (ft below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP mV	Salinity (ppth)	Turbitity (NTU)	Comments
1229	11.45	CPM 4 A/3	90		12.90	307	3.39	6.55	-35.3	0.15	1018	
1239	11.49	30' 20psi	90		12.40	301	1.53	6.39	-72.7	0.14	179	
1244	11.53				12.14	296	1.28	6.36	-77.9	0.14	159	
1249	11.59			1	11.95	293	1.11	6.34	-77.1	0.14	112	
1254	11.50		80		12.18	291	1.00	6.35	-81.3	0.14	112	
1259	11.50				12.31	291	0.94	6.34	-77.6	0.14	105.3	
1304	11.50				12.19	289	0.90	6.32	-67.8	0.14	85.0	
1309	11.52			2	12.15	286	0.89	6.30	-66.1	0.14	77.2	
1314	11.60				11.96	285	0.88	6.29	-66.4	0.14	68.6	
1319	11.61				11.92	283	0.88	6.29	-62.2	0.14	55.5	
1324	11.57		90		12.16	281	0.81	6.30	-59.5	0.13	47.2	
1329	11.57				12.08	281	0.84	6.27	-59.3	0.13	56.0	
1334	11.55				12.03	280	0.90	6.26	-58.2	0.13	41.4	
1339	11.56				12.04	280	0.96	6.25	-60.8	0.13	40.7	

TtNUS Form 0009 (modified)

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot.

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

SAMPLE LOG SHEET - "LOW FLOW" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: _____

Tetra Tech NUS Charge No. 112G00870
QC: _____ (If applicable)

Clock Time 24hr	Water Depth (feet below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP (mV)	Salinity (ppth)	Turbidity NTU	Comments
1344	11.55			3	12.00	278	1.01	6.24	-58.3	0.13	39.2	
- End Purge Stabilization achieved in accordance w/ work plan												

TtNUS Form 0009 (modified)

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

PURGE DATA SHEET - "LOW STRESS" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: CRP-MW03-0609

Tetra Tech NUS Charge No. 112G00870
QC: _____ (If applicable)
Page 1 of 1

Sample Method: Low Stress (flow) with Bladder Pump
Depth Sampled: ~19 ft bgs Screen Int. Depth 10-20 ft bgs
Sample Date & Time: 6/2/2009 1415 hours ____ (Dup Time)
Sampler(s): L. Anderson
Data Recorded By: L. Anderson Signature: L. Anderson
Well Diameter/Total Depth 2" (ft below TOR); Stickup -0.28;
Visual Evidence of Sheen (Yes/No) ____;
Olfactory Evidence of Odor (Yes/No) ____;
Weather: cloudy, sprinkles off and on, 60s

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group A/B/C/D
Pre-tubing insertion WL 10.16 ft btor; Post tubing insertion WL 10.10 ft btor

Lab Analyses (Circle Applicable):
1. VOC/GRO 2. SVOC/DRO 3. Pesticides/PCBs
4. Metals (total) 5. Metals (dissolved)

BZ=Breathing Zone, W=Well, PW=Purge Water

Clock Time 24hr	Water Depth (ft below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP mV	Salinity (ppth)	Turbitity (NTU)	Comments
1200	10.10											
1215	10.20	cpm 4, 8/7	50		13.89	260	1.87	6.23	-1.8	0.12	165	
1220	10.45	↓	140		12.34	253	0.77	6.26	-122.8	0.12	158	
1230	10.25	↓	75		13.71	252	0.88	6.30	-120.7	0.12	134	
1240	10.40	cpm 4, 7/8	120		12.49	248	0.61	6.31	-147.8	0.12	120	
1250	10.46	↓	100		12.35	245	0.53	6.32	-161.6	0.12	107.3	
1315	10.44	↓	125		12.37	240	0.52	6.33	-155.0	0.11	76.1	
1325	10.46	↓	125		12.14	239	0.57	6.40	-153.1	0.11	52.7	
1335	10.46	↓	100		12.35	238	0.55	6.37	-151.6	0.11	45.2	
1340	10.44	↓	100		12.28	237	0.51	6.41	-157.2	0.11	32.3	
1345	10.44	↓	100		12.27	237	0.45	6.40	-159.0	0.11	26.5	
1350	10.46	↓	110		12.23	236	0.49	6.41	-160.8	0.11	22.9	
1355	10.45	↓	100		12.22	236	0.43	6.39	-161.1	0.11	17.1	
1400	10.44	↓	100	~4	12.34	236	0.43	6.37	-160.8	0.11	20.0	

TtNUS Form 0009 (modified)

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot.

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

SAMPLE LOG SHEET - "LOW FLOW" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: _____.

Tetra Tech NUS Charge No. 112G00870
QC: _____ (If applicable)

Clock Time 24hr	Water Depth (feet below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP (mV)	Salinity (ppth)	Turbidity NTU	Comments
End of purge, 2hr Time Limit reached												

TtNUS Form 0009 (modified)

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

PURGE DATA SHEET - "LOW STRESS" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: CRP-MW04-0609

Tetra Tech NUS Charge No. 112G00870
QC: _____ (If applicable)

Sample Method: Low Stress (flow) with Bladder Pump
Depth Sampled: 17 ft bgs Screen Int. Depth 8-18 ft bgs
Sample Date & Time: 6/4/2009 1010 hours ____ (Dup Time)
Sampler(s): L. Anderson
Data Recorded By: L. Anderson Signature: L. Anderson
Well Diameter/Total Depth 2" _____ (ft below TOR); Stickup 0.26;
Visual Evidence of Sheen (Yes/No) _____;
Olfactory Evidence of Odor (Yes/No) _____;
Weather: raining, cloudy, 60s

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group A/B/C/D
Pre-tubing insertion WL 10.63 ft btor; Post tubing insertion WL 10.43 ft btor

Lab Analyses (Circle Applicable):
1. VOC/GRO 2. SVOC/DRO 3. Pesticides/PCBs
4. Metals (total) 5. Metals (dissolved)

LNAPL signal, 0.01 ft. thick

BZ=Breathing Zone, W=Well, PW=Purge Water

Clock Time 24hr	Water Depth (ft below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP mV	Salinity (ppth)	Turbitity (NTU)	Comments
0800	10.43	10/5										
0805	10.65											
0810	11.26		~~Hz~~ 6/4/09 ft. 50		12.61	298	5.99	6.53	-2.7	0.14	1072	
0815	11.21		75		12.05	302	4.34	6.56	-75.6	0.14	708	
0825	11.41		75		11.78	304	3.74	6.62	-88.8	0.15	1507	
0835	11.50		100		11.66	302	2.51	6.64	-89.6	0.14	1818	
0845	11.48		90		11.68	298	2.24	6.61	-84.2	0.14	1275	
0855	11.35	11/4	75		11.91	291	2.38	6.62	-78.8	0.14	708	
0905	11.30		75		12.00	289	2.07	6.60	-76.2	0.14	178	
0915	11.30		75		12.04	284	2.05	6.51	-67.5	0.14	152	
0920	11.27		75		12.05	280	1.92	6.57	-67.6	0.13	150	
0925	11.25		75		12.13	278	1.32	6.56	-64.0	0.13	142	
0930	11.24		75		12.23	274	0.59	6.55	-61.0	0.13	144	
0940	11.22		75		12.46	271	0.35	6.55	-57.6	0.13	93.2	

TtNUS Form 0009 (modified)

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot.

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

SAMPLE LOG SHEET - "LOW FLOW" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: CRP-MW04-0609

Tetra Tech NUS Charge No. 112G00870
QC: _____ (If applicable)

p 2 of 2

Clock Time 24hr	Water Depth (feet below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP (mV)	Salinity (ppth)	Turbidity NTU	Comments
0945	11.20	11/4	75		12.46	271	0.39	6.55	-56.9	0.13	63.8	
0950	11.21	↓	75		12.51	270	0.65	6.55	-54.7	0.13	89.1	
0955	11.20		75		12.56	269	1.00	6.55	-52.3	0.13	55.7	
1000	11.18	↓	75	~3	12.56	267	0.77	6.55	-49.7	0.13	69.4	
End Purge, 2 hr time limit reached												

TtNUS Form 0009 (modified)

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

PURGE DATA SHEET - "LOW STRESS" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: CRP-MW05-0609

Tetra Tech NUS Charge No. 112G00870 Page 1 of
QC: N/A (If applicable)

Sample Method: Low Stress (flow) with Bladder Pump
Depth Sampled: 1' Above bottom ft bgs Screen Int. Depth 21-31 ft bgs
Sample Date & Time: 6 / 3 /2009 1500 hours N/A (Dup Time)
Sampler(s): M. Horton
Data Recorded By: M. Horton Signature: [signature]
Well Diameter/Total Depth 2" (ft below TOR); Stickup ____;
Visual Evidence of Sheen (Yes/No) ____;
Olfactory Evidence of Odor (Yes/No) ____;
Weather: Sunny 75°

PID BZ= 0.0 / W= 0.0 / PW= 0.0 PPM. Field Instrument Group A/B/C/D
Pre-tubing insertion WL 6.95 ft btor; Post tubing insertion WL 6.75 ft btor

Lab Analyses (Circle Applicable):
1. VOC/GRO **2.** SVOC/DRO **3.** Pesticides/PCBs
4. Metals (total) **5.** Metals (dissolved)

BZ=Breathing Zone, W=Well, PW=Purge Water

Clock Time 24hr	Water Depth (ft below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP mV	Salinity (ppth)	Turbitity (NTU)	Comments
1259	7.31	CPM 4 1/4	125		16.42	176	3.69	5.80	50.8	0.08	350	
1309	7.60		125		14.02	170	1.66	5.79	53.1	0.08	160	
1314	7.77				13.73	167	1.43	5.80	52.1	0.08	123	
1319	7.67				14.28	169	1.21	5.80	50.1	0.08	150	
1324	7.69				14.56	168	1.11	5.73	52.8	0.08	182	
1329	7.52			1 gal	14.77	169	1.06	5.73	53.3	0.08	103.3	
1334	7.50		90		15.54	168	0.96	5.72	50.4	0.08	66.4	
1339	7.45				15.39	167	0.91	5.71	49.2	0.08	58.7	
1344	7.79				14.05	167	0.84	5.66	48.8	0.08	42.5	
1349	7.89				13.75	168	0.72	5.62	51.6	0.08	38.2	
1355	8.10			2 gal	13.12	167	0.64	5.50	53.6	0.08	33.7	
1359	8.15				13.22	167	0.58	5.64	47.5	0.08	46.8	
1404	8.35				12.74	167	0.59	5.70	55.1	0.08	22.2	
1409	8.25				13.18	166	0.65	5.88	53.8	0.08	20.7	

TtNUS Form 0009 (modified)

Saturated Screen Volume (gallons)____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot.

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

SAMPLE LOG SHEET - "LOW FLOW" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: _____

Tetra Tech NUS Charge No. 112G00870
QC: _____ (If applicable)

Clock Time 24hr	Water Depth (feet below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP (mV)	Salinity (ppth)	Turbidity NTU	Comments
1414	8.02				12.96	166	0.76	6.05	44.7	0.08	49.7	Fixed Bladder
1432	7.50				13.98	169	1.80	6.27	18.9	0.08	325	Pump 15 min Stopped
1437	8.32		210		12.63	167	1.38	6.11	44.9	0.08	242	
1442	8.81				12.44	166	1.11	6.11	47.1	0.08	195	
1447	8.79				12.46	166	1.07	6.11	47.5	0.08	166	
1452	8.70				12.52	166	1.07	6.11	47.6	0.08	166	
1457	8.65			5 gal	12.53	166	0.82	6.23	23.4	0.08	148	
End Purge - 2hr time Limit - Bladder Pump Not working correctly - Sample 1500												

TtNUS Form 0009 (modified)

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

PURGE DATA SHEET - "LOW STRESS" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: CRP-MW06-0609

Tetra Tech NUS Charge No. 112G00870 Page 1 of 1
QC: _____ (If applicable)

Sample Method: Low Stress (flow) with Bladder Pump
Depth Sampled: 17 ft bgs Screen Int. Depth 8-18 ft bgs
Sample Date & Time: 6/3/2009 1410 hours ____ (Dup Time)
Sampler(s): L. Anderson
Data Recorded By: L. Anderson Signature: L. Anderson
Well Diameter/Total Depth 2" (ft below TOR); Stickup ____;
Visual Evidence of Sheen (Yes/No) ____;
Olfactory Evidence of Odor (Yes/No) ____;
Weather: cloudy, 70s, breezy, some breaks in the clouds

PID* BZ= 1.8 *W= 5.5 *PW= 1.8 PPM. Field Instrument Group A/B/C/D
Pre-tubing insertion WL 9.47 ft btor; Post tubing insertion WL ____ ft btor
*PID = 1.8 in fresh air

Lab Analyses (Circle Applicable):
1. VOC/GRO 2. SVOC/DRO 3. Pesticides/PCBs
4. Metals (total) 5. Metals (dissolved)

BZ=Breathing Zone, W=Well, PW=Purge Water

Clock Time 24hr	Water Depth (ft below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP mV	Salinity (ppth)	Turbitity (NTU)	Comments
1300	8.98											
1310	9.83	10/5	30		18.85	248	6.51	5.99	-5.3	0.12	172	
1320	10.16	7/8	75		16.57	244	6.13	6.08	-22.5	0.12	163	
1330	10.36	↓	75		14.85	236	6.11	6.12	-19.9	0.11	100.7	
1340	10.48		75		14.53	227	6.01	6.12	-9.7	0.11	67.8	
1350	10.45		50		14.87	223	5.86	6.13	-5.0	0.11	50.0	
1355	10.45		60		14.82	223	5.81	6.13	-4.0	0.11	47.2	
1400	10.43		75		14.83	222	5.75	6.13	-5.7	0.11	44.0	

TtNUS Form 0009 (modified)

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot.

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

SAMPLE LOG SHEET - "LOW FLOW" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: _____

Tetra Tech NUS Charge No. 112G00870
QC: _____ (If applicable)

Clock Time 24hr	Water Depth (feet below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP (mV)	Salinity (ppth)	Turbidity NTU	Comments

TtNUS Form 0009 (modified)

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

PURGE DATA SHEET - "LOW STRESS" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: CRP-MW07-0609

Tetra Tech NUS Charge No. 112G00870
QC: MS/MSD
Page 1 of
(If applicable)

Sample Method: Low Stress (flow) with Bladder Pump
Depth Sampled: 14 ft bgs Screen Int. Depth 5-15 ft bgs
Sample Date & Time: 6 / 3 /2009 0940 hours N/A (Dup Time)
Sampler(s): M. Horton
Data Recorded By: M. Horton Signature: [signature]
Well Diameter/Total Depth 2" 18.20' (ft below TOR); Stickup ____;
Visual Evidence of Sheen (Yes/No) ____;
Olfactory Evidence of Odor (Yes/No) ____;
Weather: Sunny 70°

PID BZ=0.0 / W=0.0 / PW=0.0 PPM. Field Instrument Group A/B/C/D
Pre-tubing insertion WL ____ ft btor; Post tubing insertion WL 8.52 ft btor

Lab Analyses (Circle Applicable):
1. VOC/GRO **2.** SVOC/DRO **3.** Pesticides/PCBs
4. Metals (total) **5.** Metals (dissolved)

BZ=Breathing Zone, W=Well, PW=Purge Water

Clock Time 24hr	Water Depth (ft below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP mV	Salinity (ppth)	Turbitity (NTU)	Comments
0845	8.69	CPM4	125		12.88	138	7.90	5.67	202.7	0.06	25.6	
0850	8.68	12.5/2.5			12.46	135	6.78	5.58	205.8	0.06	17.1	
0855	8.69				12.59	133	6.28	5.64	205.8	0.06	13.0	
0905	8.72				12.40	132	5.16	5.67	209.5	0.06	20.8	
0910	8.78		190		11.72	133	5.02	5.58	217.5	0.06	8.85	
0915	8.82				11.52	131	5.64	5.49	225.8	0.06	7.41	
0920	8.82			1	11.67	129	5.60	5.45	235.0	0.06	4.38	
0925	8.83				11.62	128	5.82	5.41	244.4	0.06	4.38	
0930	8.85			2	11.83	127	5.56	5.42	251.5	0.06	4.19	
- Purge Complete, stabilization achieved in accordance with QAPP												

TtNUS Form 0009 (modified)

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot.

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

SAMPLE LOG SHEET - "LOW FLOW" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: _____.

Tetra Tech NUS Charge No. 112G00870
QC: _____ (If applicable)

Clock Time 24hr	Water Depth (feet below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP (mV)	Salinity (ppth)	Turbidity NTU	Comments

TtNUS Form 0009 (modified)

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

PURGE DATA SHEET - "LOW STRESS" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: CRP-MW08-0609

Tetra Tech NUS Charge No. 112G00870 Page 1 of
QC: (If applicable)

Sample Method: Low Stress (flow) with Bladder Pump
Depth Sampled: _____ ft bgs Screen Int. Depth _____ ft bgs
Sample Date & Time: 6/3 /2009 0955 hours DUP01 (Dup Time) DUP-01
Sampler(s): L. Anderson
Data Recorded By: L. Anderson Signature: L. Anderson
Well Diameter/Total Depth _____ (ft below TOR); Stickup _____;
Visual Evidence of Sheen (Yes/No) _____;
Olfactory Evidence of Odor (Yes/No) _____;
Weather: sunny, 70s, breezy

PID BZ= ~~0.1~~ (1.1) ~~2.6~~ (3.6) (1.3) / W= ~~1.0~~ / PW= ~~1.0~~ PPM. Field Instrument Group A/B/C/D
Pre-tubing insertion WL _____ ft btor; Post tubing insertion WL 11.18 ft btor

Lab Analyses (Circle Applicable):
1. VOC/GRO **2.** SVOC/DRO **3.** Pesticides/PCBs
4. Metals (total) **5.** Metals (dissolved)

BZ=Breathing Zone, W=Well, PW=Purge Water

Clock Time 24hr	Water Depth (ft below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP mV	Salinity (ppth)	Turbitity (NTU)	Comments
0830	11.18											
0840	11.45	12/3	40		17.35	* 0	5.81	5.99	117.0	*0.00	728	*probe not fully submerged, so readings were 0.
0850	12.02	9/6	125		12.08	144	4.97	5.80	47.2	0.07	122	
0900	12.16	11/4	60		11.99	138	4.50	5.85	51.2	0.07	93.0	
0910	12.22	10/5	60		12.65	137	4.54	5.87	53.1	0.06	57.3	
0920	12.24	9/6	60		13.36	136	4.51	5.88	57.6	0.06	54.9	
0925	12.28	7/8	50		13.27	137	4.52	5.89	57.0	0.06	33.0	
0930	12.38	~~10/5~~ 5/10	80		13.01	135	4.43	5.90	54.0	0.06	34.4	
0935	12.44	5/10	75		12.82	135	4.43	5.90	53.1	0.06	26.2	
0940	12.43	↓	75		12.75	135	4.42	5.90	52.8	0.06	25.9	
0945	12.45	↓	75	~2	12.93	135	4.40	5.91	54.7	0.06	25.5	

TtNUS Form 0009 (modified)

Saturated Screen Volume (gallons)_____. 2in Screen Volume = 0.163 gal/ft or 616 ml per foot.

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

TETRA TECH NUS, INC.

SAMPLE LOG SHEET - "LOW FLOW" GROUNDWATER

Site Name: MRP Site 01, Carr Point
Sample ID: _____.

Tetra Tech NUS Charge No. 112G00870
QC: _____ (If applicable)

Clock Time 24hr	Water Depth (feet below TOR)	Pump Dial 1	Purge Rate ml/min	Cum. Volume Purged Gals.	Temp °C	S. Cond. 2 mS/cm	DO mg/L	pH (S.U.)	ORP (mV)	Salinity (ppth)	Turbidity NTU	Comments

TtNUS Form 0009 (modified)

1. Pump dial setting (for example: hertz, cycle/min, etc.)
2. Siemens per cm (same as umhos/cm) at 25 °C.
3. Oxidation reduction potential (stand in for Eh).

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SO-ARC1A-B-C
Sample Location: ARC 1
Sampled By: M.H & LA
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/14/09 Time: See Below Method: 2" Sample Ring (MTS) Monitor Reading (ppm): NA	0-2"	Brown	Topsoil - sample collected from lawn areas and Parking areas

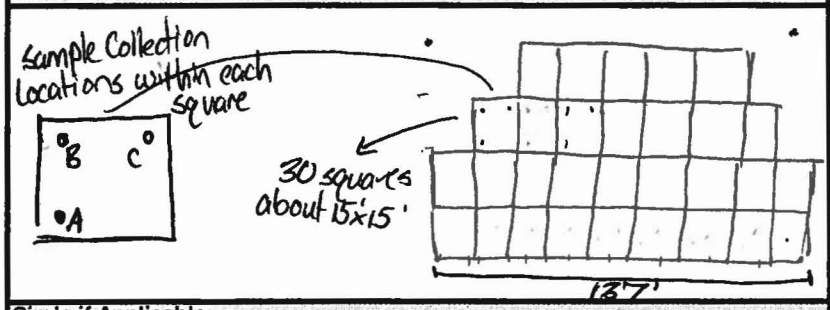
COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / ~~DRO~~	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:



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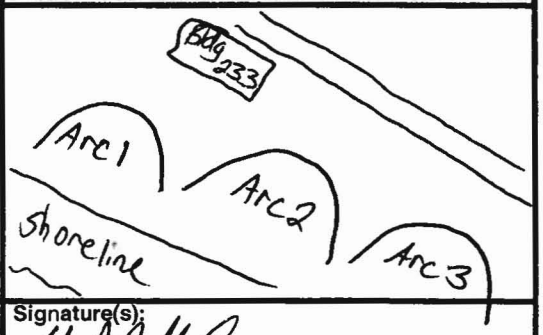


Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s): [signature]

Sample ID	Time
CRP-SO-ARC1A	1430
CRP-SO-ARC1B	1545
CRP-SO-ARC1C	1635

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SO-ARC2A-B-C
Sample Location: ARC 2
Sampled By: MH IA
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/14/09 Time: See Below Method: 2" Sample Ring (MTS) Monitor Reading (ppm): NA	0-2"	Brown	Sample collected from lawn area and peagravel parking area

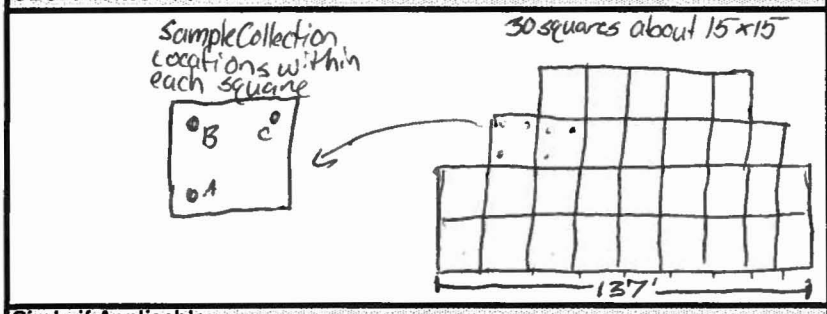
COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's ~~LDRO~~	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:



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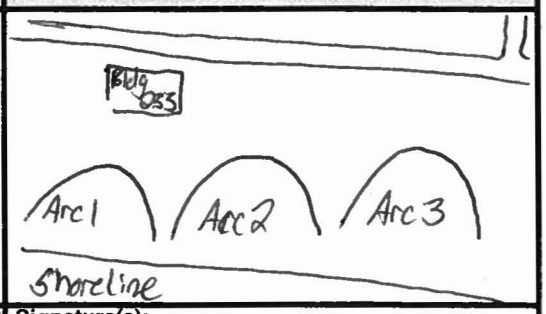


Circle if Applicable:

MS/MSD	Duplicate ID No.:
NA	N/A

Signature(s):

SAMPLE ID

CRP-SO-ARC2A 1220
CRP-SO-ARC2B 1230
CRP-SO-ARC2C 1435

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-50-ARC3A-B-C
Sample Location: ARC 3
Sampled By: MH LA
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/14/09 Time: See Below Method: 2" Sample Ring (MIG) Monitor Reading (ppm):	0-2"	Brown	Sample collected from lawn area and pea gravel parking area - Topsoil & Base Material

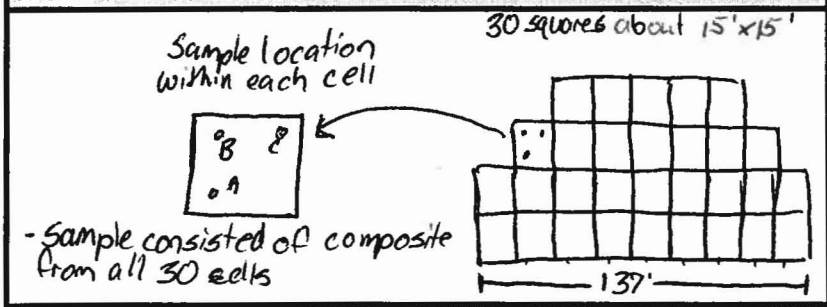
COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

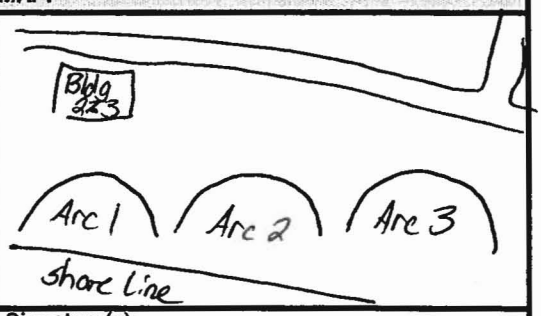
Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's ~~/DRO~~	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:



- Sample consisted of composite from all 30 cells

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
NA	NA

Signature(s): [signature]

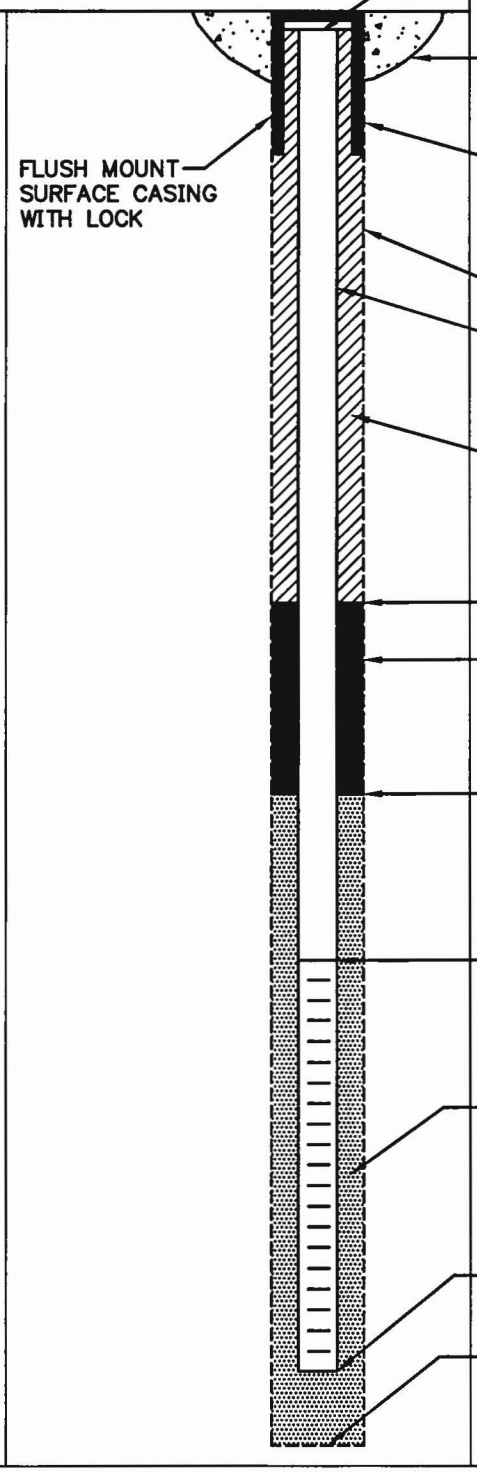
Sample ID	Time
CRP-50-ARC3A	1000
CRP-50-ARC3B	0900
CRP-50-ARC3C	1035

WELL NO.: MW 01

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET FLUSH - MOUNT

PROJECT Carr Point	LOCATION SB01	DRILLER J. Fluet
PROJECT NO. 00870	BORING SB01	DRILLING METHOD Drive and Wash
DATE BEGUN 5/19/09	DATE COMPLETED 5/20/09	
FIELD GEOLOGIST D. Whalen		DEVELOPMENT METHOD Pump & Surge Waterra
GROUND ELEVATION 16.9	DATUM 1983 RI STATE PLANE	



ELEVATION TOP OF RISER: 16.71

TYPE OF SURFACE SEAL: Concrete

TYPE OF PROTECTIVE CASING: 8" STEEL

I.D. OF PROTECTIVE CASING: 8"

DIAMETER OF HOLE: 4"

TYPE OF RISER PIPE: sch. 40

RISER PIPE I.D.: 2"

TYPE OF BACKFILL/SEAL: Bentonite Chips

ELEVATION/DEPTH TOP OF SEAL: 14.9 / 2'

TYPE OF SEAL: Bentonite chips

ELEVATION/DEPTH TOP OF SAND: 12.9 / 4'

ELEVATION/DEPTH TOP OF SCREEN: 11.9 / 5'

TYPE OF SCREEN: sch. 40 PVC

SLOT SIZE x LENGTH: 0.01" x 10'

TYPE OF SAND PACK: No. 0

DIAMETER OF HOLE IN BEDROCK: 4"

ELEVATION / DEPTH BOTTOM OF SCREEN: 1.9 / 15'

ELEVATION / DEPTH BOTTOM OF SAND: -0.1 / 17'

ELEVATION/DEPTH BOTTOM OF HOLE: -11.1 / 28'

BACKFILL MATERIAL BELOW SAND: Bentonite chips

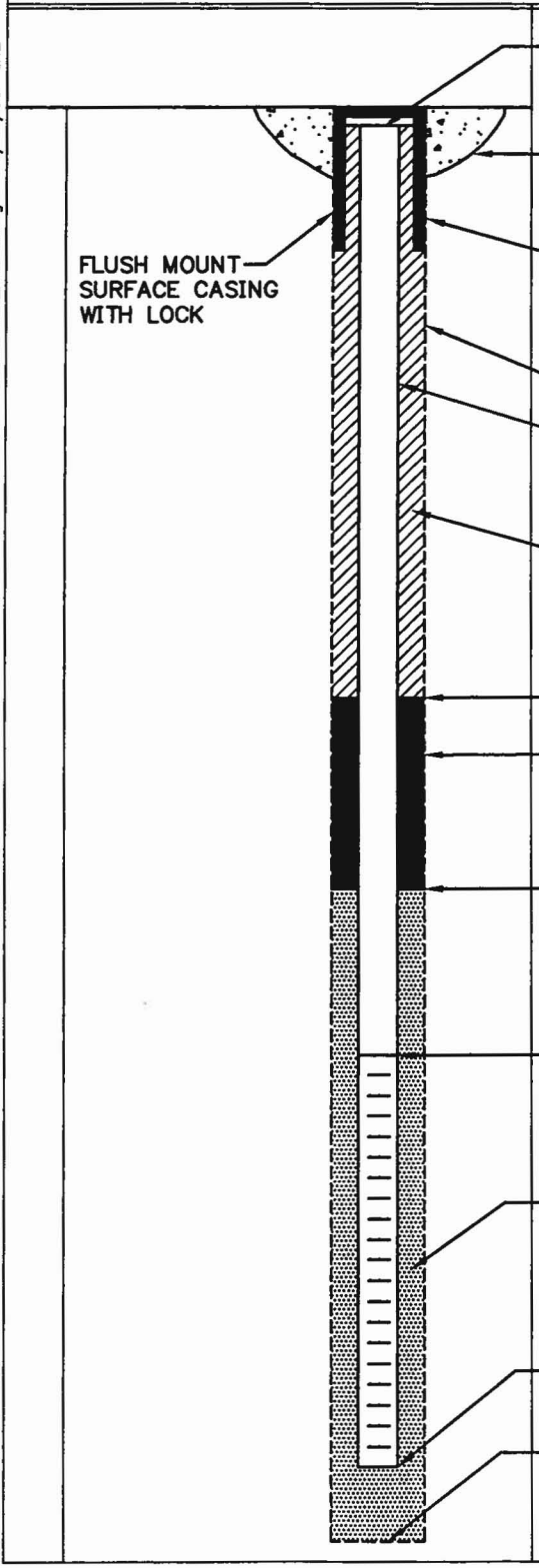
ACAD: FORM_MWFM.dwg 07/20/99 INL

WELL NO.: MW02

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET FLUSH - MOUNT

PROJECT Carr Point	LOCATION SB02	DRILLER J. Flvet
PROJECT NO. 00870	BORING SB02	DRILLING METHOD Drive and Wash
DATE BEGUN 5/20/09	DATE COMPLETED 5/20/09	
FIELD GEOLOGIST D. Whalen		DEVELOPMENT METHOD Pump & Surge Waterra
GROUND ELEVATION 15.4	DATUM 1983 RI STATE PLANE	



ELEVATION TOP OF RISER: 15.22

TYPE OF SURFACE SEAL: Concrete

TYPE OF PROTECTIVE CASING: Steel

I.D. OF PROTECTIVE CASING:

DIAMETER OF HOLE: 4"

TYPE OF RISER PIPE: Sch. 40 PVC

RISER PIPE I.D.: 2"

TYPE OF BACKFILL/SEAL: SAND

ELEVATION/DEPTH TOP OF SEAL: 12'

TYPE OF SEAL: Bentonite Chips

ELEVATION/DEPTH TOP OF SAND: 16'

ELEVATION/DEPTH TOP OF SCREEN: 18'

TYPE OF SCREEN: Sch. 40 PVC

SLOT SIZE x LENGTH: 0.01" X 10'

TYPE OF SAND PACK: No. 0

DIAMETER OF HOLE IN BEDROCK: 4"

ELEVATION / DEPTH BOTTOM OF SCREEN: 18'

ELEVATION / DEPTH BOTTOM OF SAND: 19'

ELEVATION/DEPTH BOTTOM OF HOLE: 26

BACKFILL MATERIAL BELOW SAND: Bentonite Chips

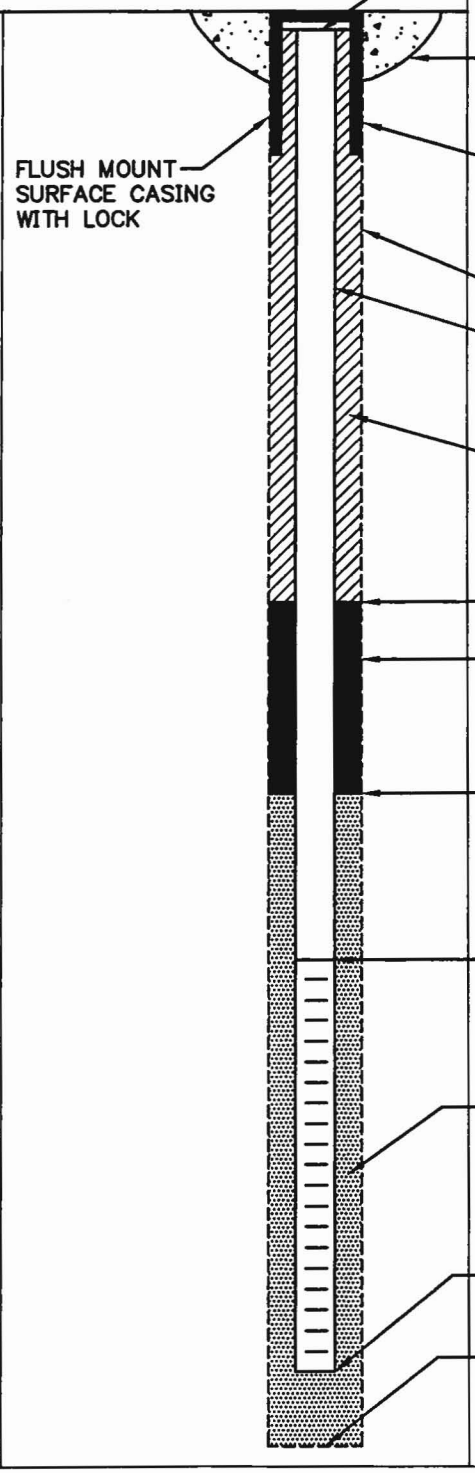
ACAD:FORM_MWFM.dwg 07/20/99 INL

WELL NO.: MW03

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET FLUSH - MOUNT

PROJECT Carr Point	LOCATION SB03	DRILLER J. Fluet
PROJECT NO. 00870	BORING SB03	DRILLING METHOD Drive and wash
DATE BEGUN 5/21/09	DATE COMPLETED 5/22/09	
FIELD GEOLOGIST D. Whalen		DEVELOPMENT METHOD Pump & Surge Watering
GROUND ELEVATION 21.2	DATUM 1983 RI STATE PLANE	



ELEVATION TOP OF RISER: 20.98

TYPE OF SURFACE SEAL: Concrete

TYPE OF PROTECTIVE CASING: STEEL

I.D. OF PROTECTIVE CASING:

DIAMETER OF HOLE: 4"

TYPE OF RISER PIPE: sch. 40 PVC

RISER PIPE I.D.: 2"

TYPE OF BACKFILL/SEAL: Bentonite chips

ELEVATION/DEPTH TOP OF SEAL: 12

TYPE OF SEAL: Bentonite chips

ELEVATION/DEPTH TOP OF SAND: 18

ELEVATION/DEPTH TOP OF SCREEN: 110

TYPE OF SCREEN: Sch. 40 PVC

SLOT SIZE x LENGTH: 0.01" x 10'

TYPE OF SAND PACK: No. 0

DIAMETER OF HOLE IN BEDROCK: NA

ELEVATION / DEPTH BOTTOM OF SCREEN: 120

ELEVATION / DEPTH BOTTOM OF SAND: 122

ELEVATION/DEPTH BOTTOM OF HOLE: 129

BACKFILL MATERIAL BELOW SAND: Bentonite chips

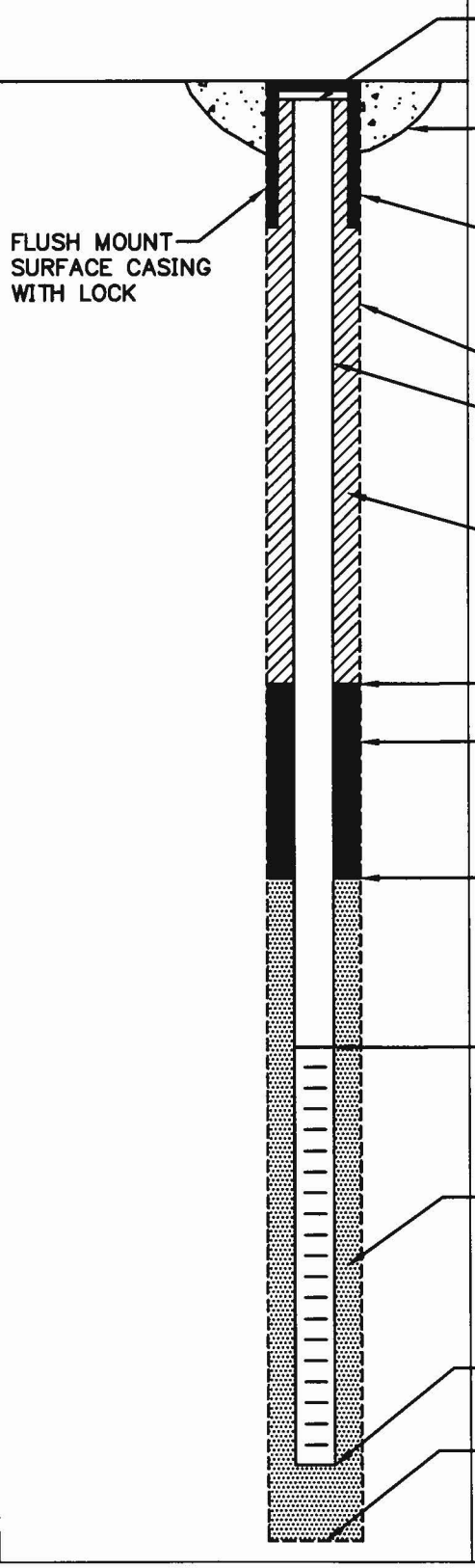
ACAD:FORM_MWFM.dwg 07/20/99 INL

WELL NO.: MW04

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET FLUSH - MOUNT

PROJECT: Carr Point	LOCATION: SB04	DRILLER: J. Flute
PROJECT NO.: 00870	BORING: SB04	DRILLING METHOD: Drive and wash
DATE BEGUN: 5/28/09	DATE COMPLETED: 5/29/09	
FIELD GEOLOGIST: D. Whalen		DEVELOPMENT METHOD: Pump & Surge Water
GROUND ELEVATION: 17.5	DATUM: 1983 RI STATE PLANE	



ELEVATION TOP OF RISER: 17.16

TYPE OF SURFACE SEAL: Concrete

TYPE OF PROTECTIVE CASING: STEEL

I.D. OF PROTECTIVE CASING:

DIAMETER OF HOLE: 4"

TYPE OF RISER PIPE: Sch. 40 PVC

RISER PIPE I.D.: 2"

TYPE OF BACKFILL/SEAL: sand

ELEVATION/DEPTH TOP OF SEAL: 13'

TYPE OF SEAL: Bentonite chips

ELEVATION/DEPTH TOP OF SAND: 16'

ELEVATION/DEPTH TOP OF SCREEN: 18'

TYPE OF SCREEN: Sch. 40 PVC

SLOT SIZE x LENGTH: 0.01" X10

TYPE OF SAND PACK: No. 0

DIAMETER OF HOLE IN BEDROCK: NA

ELEVATION / DEPTH BOTTOM OF SCREEN: 18'

ELEVATION / DEPTH BOTTOM OF SAND: 20'

ELEVATION/DEPTH BOTTOM OF HOLE: 35'

BACKFILL MATERIAL BELOW SAND: Bentonite chips

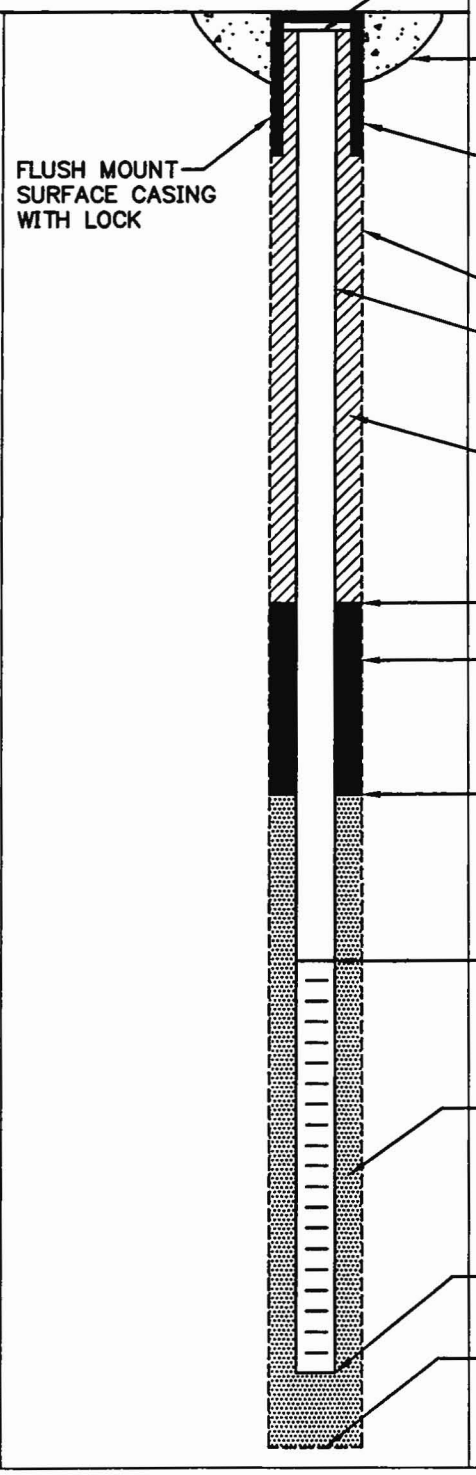
ACAD: FORM_MWFM.dwg 07/20/99 INL

WELL NO.: MW05

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET FLUSH - MOUNT

PROJECT Carr Point	LOCATION SB05	DRILLER J. Fluet
PROJECT NO. 00870	BORING SB05	DRILLING METHOD Drive and Wash
DATE BEGUN 5/27/09	DATE COMPLETED 5/29/09	
FIELD GEOLOGIST D. Whalen		DEVELOPMENT METHOD Pump & Surge, Waterra
GROUND ELEVATION 19.9	DATUM 1983 RI STATE PLANE	



ELEVATION TOP OF RISER: 19.9

TYPE OF SURFACE SEAL: Concrete

TYPE OF PROTECTIVE CASING: Steel

I.D. OF PROTECTIVE CASING:

DIAMETER OF HOLE: 4"

TYPE OF RISER PIPE: Sch. 40 PVC

RISER PIPE I.D.: 2"

TYPE OF BACKFILL/SEAL: Sand

ELEVATION/DEPTH TOP OF SEAL: 13'

TYPE OF SEAL: Bentonite chips

ELEVATION/DEPTH TOP OF SAND: 19'

ELEVATION/DEPTH TOP OF SCREEN: 21'

TYPE OF SCREEN: Sch. 40 PVC

SLOT SIZE x LENGTH: 0.01" x 10'

TYPE OF SAND PACK: No. 0

DIAMETER OF HOLE IN BEDROCK: NA

ELEVATION / DEPTH BOTTOM OF SCREEN: 31

ELEVATION / DEPTH BOTTOM OF SAND: 31

ELEVATION/DEPTH BOTTOM OF HOLE: 31

BACKFILL MATERIAL BELOW SAND: NA

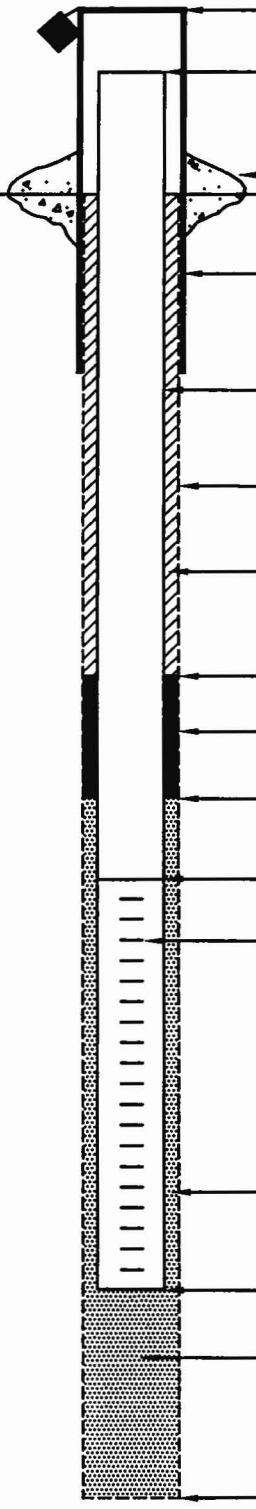
ACAD:FORM_MWFM.dwg 07/20/99 INL

WELL NO.: MW06

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET STICK-UP

PROJECT Carr Point	LOCATION SB06	DRILLER J. Fluet
PROJECT NO. 00870	BORING SB06	DRILLING METHOD Drive and Wash
DATE BEGUN 5-28-09	DATE COMPLETED 5/29/09	
FIELD GEOLOGIST D. Whalen		DEVELOPMENT METHOD Pump & Surge Waterra
GROUND ELEVATION 16.6	DATUM 1983 RI STATE PLANE	



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: 19.46 /

ELEVATION/HEIGHT OF TOP OF RISER PIPE: 19.12 MH ~~19.16~~ /

TYPE OF SURFACE SEAL: Concrete

I.D. OF SURFACE CASING: 4"
TYPE OF SURFACE CASING: steel

RISER PIPE I.D.: 2"
TYPE OF RISER PIPE: sch. 40 PVC

BOREHOLE DIAMETER: 4"

TYPE OF BACKFILL: Sand

ELEVATION/DEPTH TOP OF SEAL: / 3'

TYPE OF SEAL: Bentonite chips

DEPTH TOP OF SAND PACK: 6'

ELEVATION/DEPTH TOP OF SCREEN: / 8'

TYPE OF SCREEN: sch. 40 PVC

SLOT SIZE x LENGTH: 0.01" x 10'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: No. 0

ELEVATION/DEPTH BOTTOM OF SCREEN: / 18'

ELEVATION/DEPTH BOTTOM OF SAND PACK: / 20'
BACKFILL MATERIAL BELOW SAND: Bentonite chips

ELEVATION/DEPTH OF HOLE: / 24.5

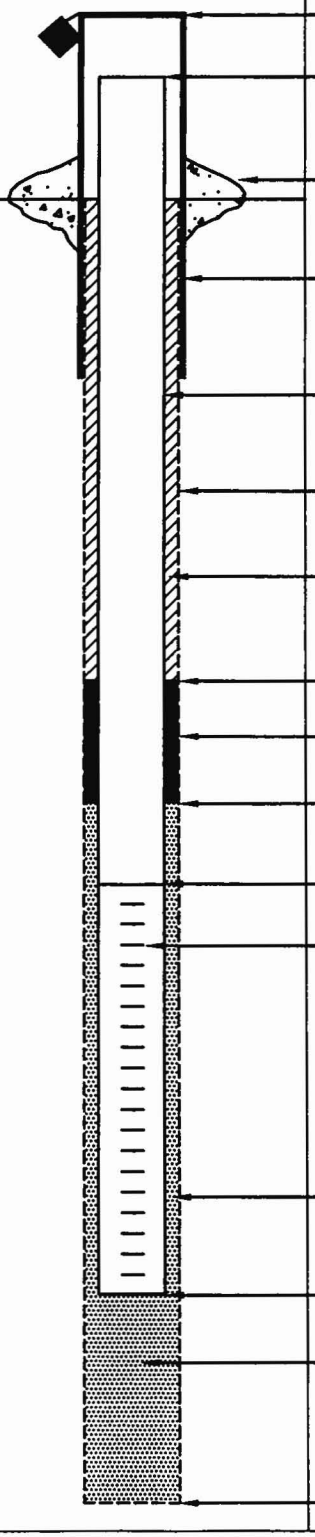
ACAD: FORM_MWSU.dwg 07/20/99 INL

WELL NO.: MW07

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET STICK-UP

PROJECT: Carr Point	LOCATION: SB07	DRILLER: J. Flvet
PROJECT NO.: 00870	BORING: SB07	DRILLING METHOD: 4 1/4" HSA
DATE BEGUN: 5/26/09	DATE COMPLETED: 5/29/09	
FIELD GEOLOGIST: D. Whalen		DEVELOPMENT METHOD: Pump & Surge Waterra
GROUND ELEVATION: 15.7	DATUM: 1983 RI STATE PLANE	



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: 19.32 /

ELEVATION/HEIGHT OF TOP OF RISER PIPE: 19.14 /

TYPE OF SURFACE SEAL: Concrete

I.D. OF SURFACE CASING: 4"

TYPE OF SURFACE CASING: STEEL

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch. 40 PVC

BOREHOLE DIAMETER: 4"

TYPE OF BACKFILL: sand

ELEVATION/DEPTH TOP OF SEAL: / 3'

TYPE OF SEAL: Bentonite chips

DEPTH TOP OF SAND PACK: 4'

ELEVATION/DEPTH TOP OF SCREEN: / 5'

TYPE OF SCREEN: Sch. 40 PVC

SLOT SIZE x LENGTH: 0.01" x 10'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: No. 0

ELEVATION/DEPTH BOTTOM OF SCREEN: / 15'

ELEVATION/DEPTH BOTTOM OF SAND PACK: / 16.5'

BACKFILL MATERIAL BELOW SAND: NA

ELEVATION/DEPTH OF HOLE: / 16.5'

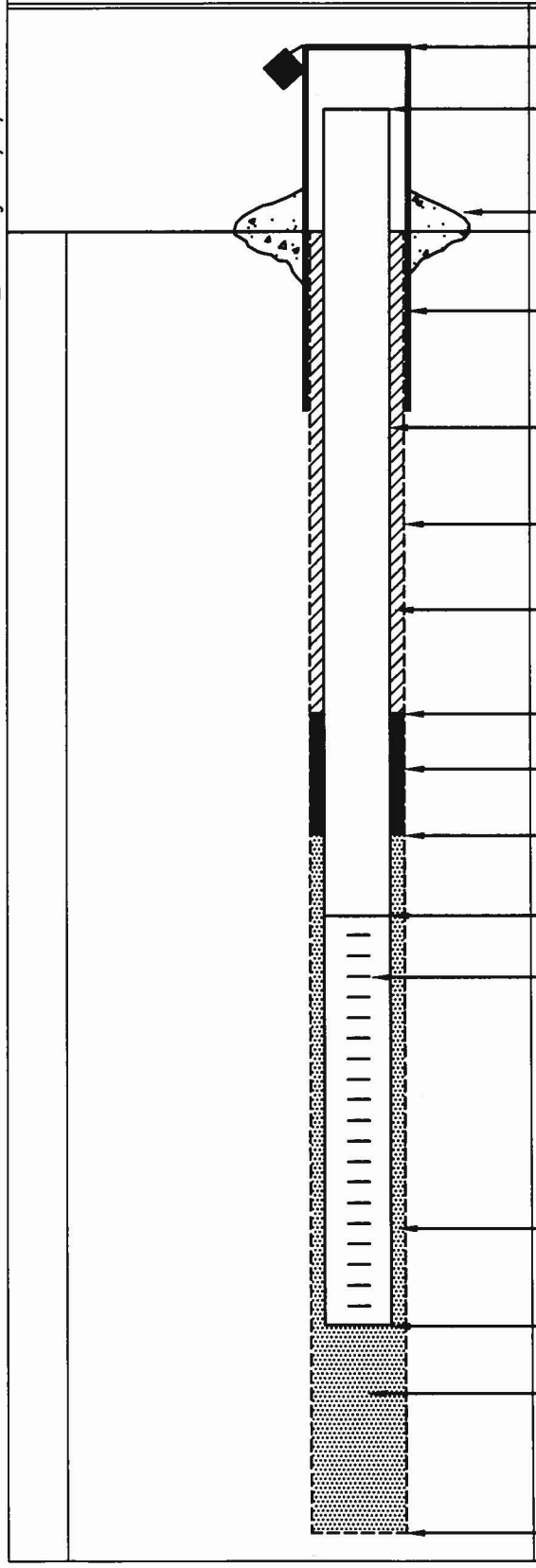
ACAD: FORM_MWSU.dwg 07/20/99 INL

WELL NO.: MW08

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET STICK-UP

PROJECT Carr Point	LOCATION SB08	DRILLER J. Fluet
PROJECT NO. 00870	BORING SB08	DRILLING METHOD Drive and Wash
DATE BEGUN 5/26/09	DATE COMPLETED 5/29/08	
FIELD GEOLOGIST D. Whalen		DEVELOPMENT METHOD Pump & Surge Waterra
GROUND ELEVATION 15.8	DATUM 1983 RI STATE PLANE	



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: 19.53'

ELEVATION/HEIGHT OF TOP OF RISER PIPE: 19.27'

TYPE OF SURFACE SEAL: Concrete

I.D. OF SURFACE CASING: 4"
TYPE OF SURFACE CASING: STEEL

RISER PIPE I.D.: 2"
TYPE OF RISER PIPE: Sch. 40 PVC

BOREHOLE DIAMETER: 4"

TYPE OF BACKFILL: sand

ELEVATION/DEPTH TOP OF SEAL: 13'

TYPE OF SEAL: Bentonite chips

DEPTH TOP OF SAND PACK: 5'

ELEVATION/DEPTH TOP OF SCREEN: 17'

TYPE OF SCREEN: sch. 40 PVC

SLOT SIZE x LENGTH: 0.01" x 10'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: No. 0

ELEVATION/DEPTH BOTTOM OF SCREEN: 17'

ELEVATION/DEPTH BOTTOM OF SAND PACK: 18'
BACKFILL MATERIAL BELOW SAND: NA

ELEVATION/DEPTH OF HOLE: 18'

ACAD:FORM_MWSU.dwg 07/20/99 INL

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Well: MW01
Site: MPR Site 01 Carr Point
Date Installed: 5/19/09
Date Developed: 5/29/09
Dev. Method: Waterra, Pump & Surge
Pump Type: Check Value

Depth to Bottom (ft.): 15' Bgs
Static Water Level Before (ft.): 11.28
Static Water Level After (ft.): _____
Screen Length (ft.): 10'
Specific Capacity: _____
Casing ID (in.): 2"

Responsible Personnel: M. Horton, L. Anderson
Drilling Co.: Dril/Ex (Did NOT Develop)
Project Name: MRP Site 01, Carr Point NAVSTA Newport
Project Number: 112G00870

2.0 YS

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
1120	start	development						
1134		2	14.70					
		let	recharge					
1219			12.05	~~12.75~~				
1230		2.5	12.81	12.75	6.94	459	off scale	
		let	recharge					
1330		5	12.05	11.09	6.50	460	off scale	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: MW 02
Site: MRP Site 01 Carr Point CTO406
Date Installed: 5/20/09
Date Developed: 5/27 & 5/28/09 & 5/29/09
Dev. Method: Waterra
Pump Type: Waterra

Depth to Bottom (ft.): 18.3 BGS
Static Water Level Before (ft.): 11.03
Static Water Level After (ft.): 14.64
Screen Length (ft.): 10
Specific Capacity:
Casing ID (in.): 2

Responsible Personnel: M. Horton
Drilling Co.: DrilEx (Did NOT Develop Well)
Project Name: MRP Site 01, Carr Point NAVSTA Newport
Project Number: 112G00870

	Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
5/28	1552		1	13.55	12.54	6.37	402	NM	
	1610		2.5	13.78	13.27	6.55	65	NM	
	1620		4	13.95	13.74	6.74	354	NM	
	1630		5	14.18	12.96	6.71	306	NM	
	1640		6	~~12.67~~ 14.55	12.67	6.37	-81.2	1687	
	1650		7	14.43	12.26	6.69	-114.7	58.9	
	1700		8	14.30	12.12	6.50	-48.3	180	
	1715		10	14.18	12.03	6.65	-20.0	181	
	1725		11	15.20	11.82	5.62	-75.8	>2230	
			cease development for the day						
5/29	start purging		at 0655						
	0725		2	14.25	11.56	6.25	277	69.7	
	0735		4	15.12	11.48	6.36	280	71.2	
	0740		4.5	15.55	11.42	6.31	281	39.6	pulled tubing up ≈ 1 ft. after reading
	0750		7	15.10	11.58	6.35	270	39.5	
	0800		8	15.05	11.63	6.33	270	162	
	0825			14.64	11.63	6.30	270	NM	Too high

- End Development - total of about 30 gal purged from well purged

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: MW03
Site: MRP Site 01 Carr Point
Date Installed: 5/21/09
Date Developed: 5/29/09
Dev. Method: Waterra
Pump Type: Waterra

Depth to Bottom (ft.): 20' Bgs
Static Water Level Before (ft.): 9.42
Static Water Level After (ft.):
Screen Length (ft.): 10'
Specific Capacity:
Casing ID (in.): 2"

Responsible Personnel: M. Horton, L. Anderson
Drilling Co.: DrilEx (Did not Develop Well)
Project Name: MRP Site 01, Carr Point NAVSTA Newport
Project Number: 112G00870

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
0845	Begin Development							
0855		4	16.90	11.24	6.34	249	NM	
0910		8	18.35	11.98	6.60	263	NM	
0920		12	18.90	11.13	6.52	246	41.7	
0940		16	17.47	11.40	6.34	236	1824	
0950		19	17.50	11.16	6.33	228	120	
1010		22	17.27	11.18	6.33	232	154	
1020		24	17.10	11.10	6.33	236	44.2	
1030		28	19.35	11.24	6.27	240	37.1	
1045		≈40	19.40	11.31	6.28	232	42.3	

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MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Well: MW04
Site: Carr Point
Date Installed: 5/27/09
Date Developed: 6/2/09
Dev. Method: Pump & Surge
Pump Type: Waterra

Depth to Bottom (ft.): 17.66 TOC
Static Water Level Before (ft.): 10.49
Static Water Level After (ft.): _____
Screen Length (ft.): 10
Specific Capacity: _____
Casing ID (in.): 2"

Responsible Personnel: M. Horton
Drilling Co.: Dril Ex (did Not develop)
Project Name: MRP Site 01, Carr Point NAVSTA Newport
Project Number: 112G00870

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0813		0	10.49	12.26	7.92	627	off scale	Pumped Dry in 1 min about 1 gal
0848		2	13.60	13.95	7.19	559	off scale	
0902		4	13.56	11.88	6.98	512	off scale	
0920		5	13.52	11.76	6.96	454	off scale	
0940		6	~~11.69~~	11.69	6.72	394	off scale	
1015		7.5	13.73	12.59	6.34	311	off scale	
	- End Development 2hr time limit total of 7.5 gal purged turbidity may be a problem							

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Well: MW05
Site: MRP Site 01 Carr Point
Date Installed: 5/27/09
Date Developed: 6/1/09
Dev. Method: Pump & Surge
Pump Type: Waterra

Depth to Bottom (ft.): 31'
Static Water Level Before (ft.): 6.72
Static Water Level After (ft.): _____
Screen Length (ft.): 10
Specific Capacity: _____
Casing ID (in.): 2"

Responsible Personnel: M. Horton
Drilling Co.: Dril Ex (Did Not Develop)
Project Name: MRP Site 01, Carr Point NAVSTA Newport
Project Number: 112G00870

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
1520			27.9	12.26	6.98	297	off scale	
	-Purged well dry will wait to see if there is any recharge, 1 min 55 sec to recharge 1'							
1543	-Purged well dry from 20'							
1604		10	19.60	12.59	6.58	245	~~off scale~~	1254
1630		12		12.50	6.36	207	689	
1655		15	15.50	12.44	6.32	189	398	
1720		17	17.30	12.31	6.24	187	296	
	-2 hrs end of purge 80 gal total taken out of well							

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Well: MW06
Site: Carr Point MRP Site 01
Date Installed: 5/29/09
Date Developed: 6/1/09
Dev. Method: Pump & Surge
Pump Type: Waterra

Depth to Bottom (ft.): 20.01 TOC
Static Water Level Before (ft.): 9.29'
Static Water Level After (ft.): _____
Screen Length (ft.): 10'
Specific Capacity: _____
Casing ID (in.): 2"

Responsible Personnel: M. Horton
Drilling Co.: Dril Ex (Did NOT Develop)
Project Name: MRP Site 01, Carr Point NAVSTA Newport
Project Number: 112G00870

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
1745		0	9.29	10.88	8.03	~~7~~ 425	off scale	Begin Purge - Purge Dry 3 min 2 gal
1816		5		10.74	7.07	320	off scale	
1837		6	13.38	11.83	6.61	331	off scale	
1855		7	13.89	12.09	6.38	268	off scale	
1927		10		11.87	6.17	217	off scale	
1945		12	15.27	11.16	6.13	202	off scale	
	End Development - 2hr time limit total of 12 gallons purged							

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: MW07
Site: MRP Site 01 - Carr point
Date Installed: 5/26/09
Date Developed: 6/1/09
Dev. Method: Pump & Surge
Pump Type: Waterra

Depth to Bottom (ft.): 15' bgs (18.52 TOC)
Static Water Level Before (ft.): 8.47'
Static Water Level After (ft.): ____
Screen Length (ft.): 10'
Specific Capacity: ____
Casing ID (in.): 2"

Responsible Personnel: M. Horton
Drilling Co.: Drill Ex (Did NOT Develop)
Project Name: MRP Site 01, Carr Point NAVSTA Newport
Project Number: 112G00870

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm²)	Turbidity (NTU)	Remarks (odor, color, etc.)
11:43		~~8.47~~	8.47					Begin Development
1148		~~0~~5	13.85	12.72	5.94	150	off scale	
1203		15		11.23	6.07	133	929	-Stopped for 3 min - phone call
1225		20		12.17	5.95	123	193	-Stopped to empty Buckets 10 min
1233		30	16.55	11.88	5.98	135	off scale	
1242		35	16.15	—	—	—	165	8-9' on screen
1248		40	15.31	11.50	5.89	119	108.5	
1331		45		13.40	5.78	127	115	Sat for 40 min
1354		~~50~~ 55		15.03	5.71	68	119	
1401		60	-Development complete - removed 60 gals of water from well					
			so it is hydraulically connected - very silty geology in this area					
			so Turbidity will not stay below 100 2hr Limit					

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: MW08
Site: MRP Site 01 Carr Point
Date Installed: 5/26/09
Date Developed: 6/1/09
Dev. Method: Pump & Surge
Pump Type: Waterra

Depth to Bottom (ft.): 17' bgs (20.00 TOC)
Static Water Level Before (ft.): 11.24 TOC
Static Water Level After (ft.): ____
Screen Length (ft.): 10'
Specific Capacity: 1.51 gal
Casing ID (in.): 2"

Responsible Personnel: M. Horton
Drilling Co.: DrilEx (Did NOT Develop)
Project Name: MRP Site 01, Carr Point NAVSTA Newport
Project Number: 112G00870

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm²)	Turbidity (NTU)	Remarks (odor, color, etc.)
0939	Begin Development							
0949		2.5	17.80	13.03	6.69	164	off scale	Pumped Dry in 3 min - waited 5 min to start again
1032		6.0		12.88	6.03	162	off scale	took out 2.5 gal initially
1104		8.0		11.58	5.80	144	off scale	
1129	-collected Turbidity reading 114 NTU - it will clear up and then get silty again - have been purging							
	dry every 1/2 hour - pull out about 1 gal each time - will purge dry one more time at 1200 and take							
	water level before hand - total volume this morning was 1.5 gal will pull out 10 gal for development							
1410	-Removed one more well volume from well - Turbidity off scale total of 12 gal removed							
	development complete - hydraulically connected							

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB01-0001
Sample Location: SB01
Sampled By: LA
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/12/09 Time: 1055 Method: hand auger Monitor Reading (ppm): 0.0	0-1ft.	brown	sandy silt, some fine gravel (very angular to rounded), trace coarse gravel (subangular), trace cobbles (subangular), slightly moist

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

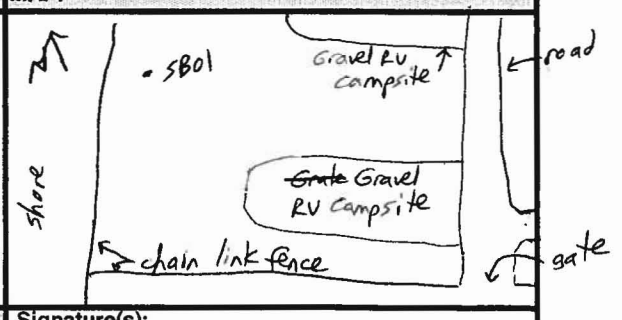
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	(YES) / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	(YES) / NO	
GRO	MeOH	1 - 40ml VOC vial	(YES) / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	(YES) / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	(YES) / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / (NO)	
PAHs	4° C	1 - 8oz wide mouth jar	(YES) / NO	

OBSERVATIONS / NOTES:

- roots, organic matter, and earthworms in sample
- sample contained many fragments of clay pidgeons (painted neon orange) and a small metallic object that appeared to be eletrical

MAP:



Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Tori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB01-0608
Sample Location: SB01 / MW01
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/19/09	0608	Brown	See Boring Log
Time: 0850			
Method: Drive & Wash Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

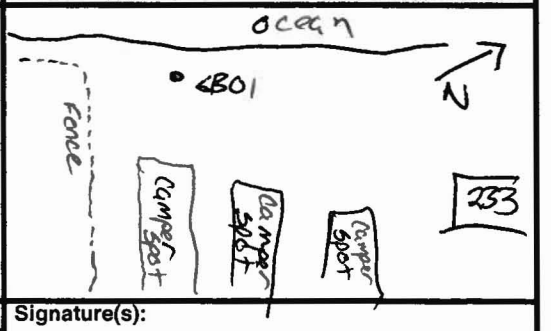
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected just above water table

MAP:



Circle if Applicable:

MS/MSD
Lab QC

Duplicate ID No.: N.A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[x] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB01-2022
Sample Location: SB01 / MW01
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/19/09	20-22'	Brown	see boring log
Time: 1140			
Method: Drive & Wash Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

-collected because it was midway between groundwater sample & bedrock sample

MAP:

see CRP-SB01-0608

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[x] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB01-2628
Sample Location: SB01/MW01
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/19/09	26-28'	~~Brown~~ Grey	See Boring Log
Time: 1331			
Method: Direct Push Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected just above bedrock

MAP:

See CRP-SB01-0608

Circle if Applicable:

MS/MSD N/A

Duplicate ID No.: N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB02-0001
Sample Location: SB02
Sampled By: LA
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/12/09 Time: 0815 Method: hand-auger Monitor Reading (ppm):	0-1 ft.	dark brown	silty sand (fine to medium grained), some fine gravel, trace coarse gravel, moist

COMPOSITE SAMPLE DATA:

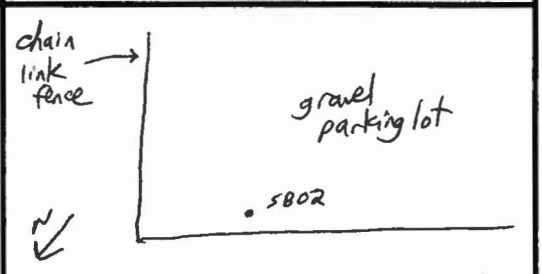
Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): Lori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB02-0810
Sample Location: SB02
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/20/09 Time: 0947 Method: Drive & Wash Split Spoon Monitor Reading (ppm): 0.0	8-10'	Brown	See Boring Log

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

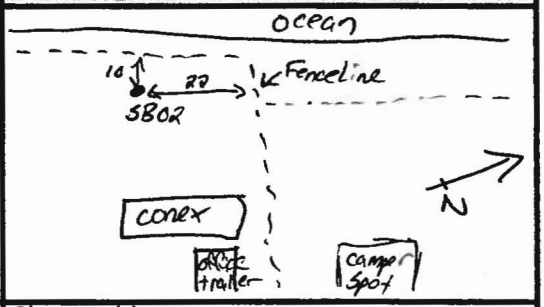
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- Sample collected just above water table
- located about 22' south of fence and 10' East

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	CRP-SB-DUP03

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB02-1618
Sample Location: SB02
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 5/20/09	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1057	16-18'	Grey	-See Boring Log
Method: Drive & Wash Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- sample collected at this location because driller claimed to see a sheen ~~in~~ on his tub water at this depth (TtNus did Not observe)

MAP:

-See CRP-SB02-0810 sample log

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Mil 2 Nt

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB02-2426
Sample Location: SB02
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/20/09 Time: 1158 Method: Drive & Wash Split Spoon Monitor Reading (ppm): 0.0	24-26'	Grey	- See boring log

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected just above bedrock in accordance w/ QAPP

MAP:

- see CRP-SB02-0810 log sheet

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB03-0001
Sample Location: SB03
Sampled By: LA
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/12/09 Time: 0945 Method: hand auger Monitor Reading (ppm):	0-1 ft.	dark brown	silty sand (fine to medium grained), some fine gravel (angular to subrounded), slightly moist

COMPOSITE SAMPLE DATA:

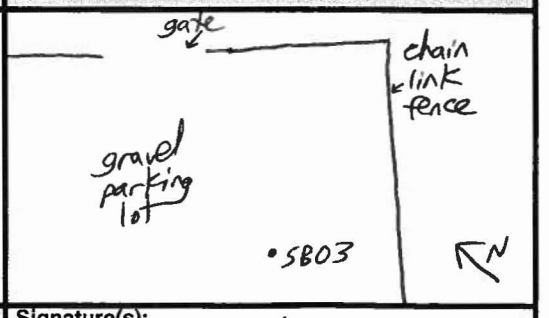
Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	LA 5/12/09 YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

MAP:



Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Lori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB03-0810
Sample Location: SB03
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/21/09 Time: 1214 Method: Drive & Wash - Split Spoon Monitor Reading (ppm): 0.0	8-10'		- see Boring Log Sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

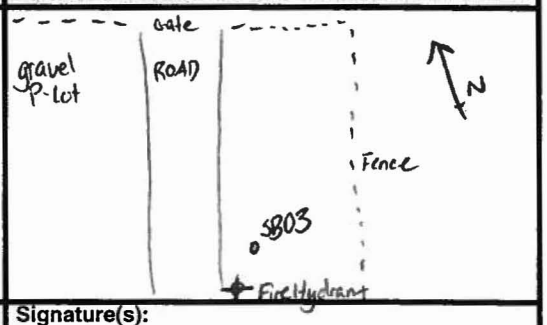
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	(YES) / NO	Lab QC
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	(YES) / NO	↓
GRO	MeOH	1 - 40mL vial	(YES) / NO	↓
Pesticides / PCBs	4° C	1 - 4oz wide mouth jar	(YES) / NO	↓
TAL Metals	4° C	1 - 4oz wide mouth jar	(YES) / NO	↓
Propellants	4° C	1 gallon plastic bag	YES / (NO)	
PAHs	4° C	1 - 4oz wide mouth jar	(YES) / NO	Lab QC

OBSERVATIONS / NOTES:

· Sample collected at 8-10' because it is estimated that the GW level is just below this level

MAP:



Circle if Applicable:

(MS/MSD) ~~N/A~~

Duplicate ID No.: N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB03-1618
Sample Location: SB03
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/21/09 Time: 1320 Method: Drive & Wash - Split Spoon Monitor Reading (ppm): 0.0	16-18		- See Boring Log Sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40mL vial	YES / NO	
Pesticides / PCBs	4° C	1 - 4oz wide mouth jar	YES / NO	
TAL Metals	4° C	1 - 4oz wide mouth jar	YES / NO	
Propellants	4° C	1 gallon plastic bag	YES / NO	
PAHs	4° C	1 - 4oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- Sample collected because it was located between competant bedrock and the GW table

MAP:

See Map From CRP-SB05-0810 sample log sheet

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s): M. Horton

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB03-2830
Sample Location: SB03
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/21/09 Time: 1538 Method: Drive & Wash - Split Spoon Monitor Reading (ppm): 0.0	28-30		- See Boring Log Sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40mL vial	YES / NO	
Pesticides / PCBs	4° C	1 - 4oz wide mouth jar	YES / NO	
TAL Metals	4° C	1 - 4oz wide mouth jar	YES / NO	
Propellants	4° C	1 gallon plastic bag	YES / NO	
PAHs	4° C	1 - 4oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- Sample Collected because it was located ontop of competant Bedrock

MAP:

- See sample log sheet from CRP-SB03-0810 for Map

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	SB-DUP04

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

→ [X] Surface Soil
~~[X] Subsurface Soil~~
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB04-0002
Sample Location: SB04
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/28/09 Time: 1134 Method: Drive & Wash - Split Spoon Monitor Reading (ppm): 0.8	0-2'	Brown	- See boring log sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

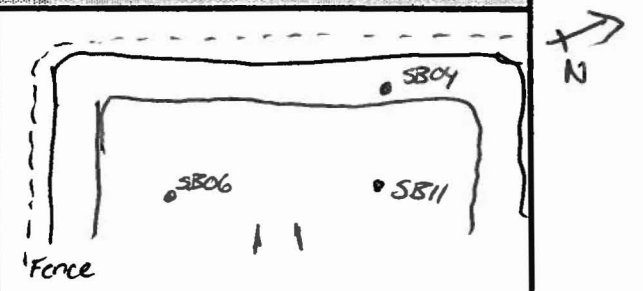
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected as surface soil sample

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB04-0406
Sample Location: SB04
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/28/09 Time: 1150 Method: Direct Wash - Split Spoon Monitor Reading (ppm): 15.2	4-6'	Brown	- see boring log sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected because of high PID reading from headspace air

MAP:

- See CRP-SB04-0002 sample log sheet

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB04-0810
Sample Location: SB04
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/28/09 Time: 1208 Method: Drive/Wash - Split Spoon Monitor Reading (ppm): 0.0	8-10'	Brown/Grey	-See boring log

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- Collected just above water table

MAP:

- See CRP-SB04-0002 sample sheet

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB04-3234
Sample Location: SB04
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/28/09	32-34'	~~Br~~ Grey	- See Boring Log Sheet
Time: 1407			
Method: Drive & Wash			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	(YES) / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	(YES) / NO	
GRO	MeOH	1 - 40ml VOC vial	(YES) / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	(YES) / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	(YES) / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / (NO)	
PAHs	4° C	1 - 8oz wide mouth jar	YES / (NO)	

OBSERVATIONS / NOTES:

- collected just above competent bedrock

MAP:

See CRP-SB04-0002 sample sheet for map

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB05-0001
Sample Location: SB05
Sampled By: LA
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/12/09 Time: 1255 Method: hand auger Monitor Reading (ppm):	0-1 ft.	dark brown	sandy silt, little fine gravel (angular to rounded), trace coarse gravel (subrounded), moist

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

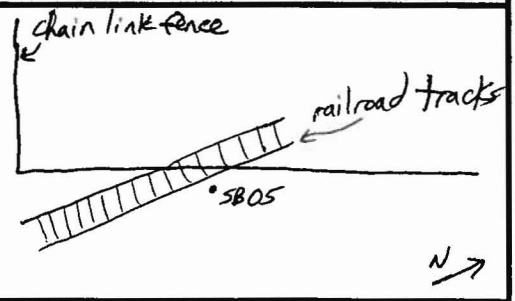
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

sample contains roots and organic matter

MAP:



Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Lori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[x] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB05-0204
Sample Location: SB05
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/26/09 Time: 0813 Method: Drive/Wash-Split Spoon Monitor Reading (ppm): 4.8	2-4	Brown	-see boring Log Sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

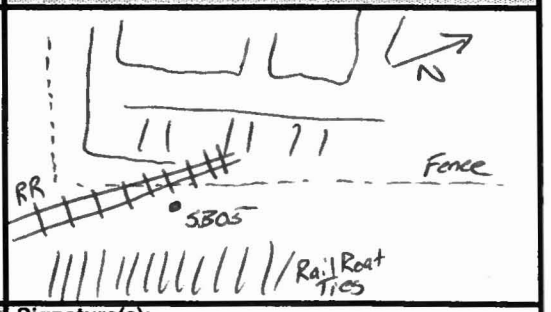
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

-sample collected because it was the only headspace jar that recorded a PID reading - slight petroleum odor

MAP:



Circle if Applicable:

MS/MSD N/A

Duplicate ID No.: N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB05-0810
Sample Location: SB05
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: ~~5/27/09~~ 5/27/09 Time: 0924 Method: Drive & Wash - Split Spoon Monitor Reading (ppm): 0.0	8-10	Brown	- See Boring Log Sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected at water table
- No water seen - very tight soil, possibly no water

MAP:

- See CRP-SB05-0204 sample log sheet

Circle if Applicable:

MS/MSD

Duplicate ID No.: N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB05-3032
Sample Location: SB05
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: ~~5/26~~ 5/27/09 Time: 1143 Method: Drive & Wash - Split Spoon Monitor Reading (ppm): 0.0	30-32'	Brown/Grey	- See Boring Log Sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- Collected above bedrock - weathered phyllite

MAP:

- See CRP-SB05-0204 sample log sheet

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

Sample ID No.: CRP-SB06-0001
Sample Location: SB06
Sampled By: LA
C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/13/09 Time: 1355 Method: hand auger Monitor Reading (ppm):	0-1ft.	brown	silty sand (fine to medium grained), little fine gravel (grey angular to subrounded), slightly moist

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- location in cleared area, surface soil disturbed by heavy machinery
- roots and organic material in sample

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Lori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB06-0810
Sample Location: SB06
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/27/09	8-10	Brown/Grey	- See Boring Log Sheet
Time: 1513			
Method: Drive & Wash - Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

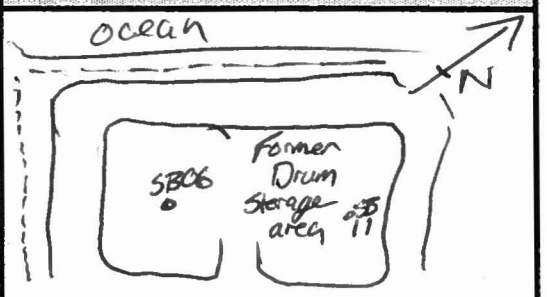
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

Collected above ground water level

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB06-R14
Sample Location: SB06
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/27/09 Time: 1535 Method: Direct Push-Split Spoon Monitor Reading (ppm): 0.0	12-14'	Brown/Gray	-See Boring Log Sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

-

MAP:

-See CRP-SB06-R14-0810 sample log sheet for map

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB06-2224
Sample Location: SB06
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/28/09 Time: 0823 Method: DP Drive/Wash Split Spoon Monitor Reading (ppm): 13.8	22-24'	Grey	- See boring log sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- Sample collected just above bedrock

MAP:

- See CRP-SB06-0810 sample log sheet

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	DUP06

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB07-0001
Sample Location: SB07
Sampled By: LA
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/13/09 Time: 0815 Method: hand auger Monitor Reading (ppm):	0-1ft.	dark brown	silty sand (fine grained), some fine gravel (angular to rounded), trace coarse gravel (subrounded), slightly moist

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

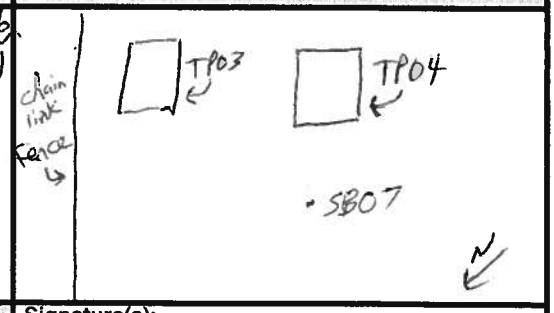
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	(YES) / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	(YES) / NO	
GRO	MeOH	1 - 40ml VOC vial	(YES) / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	(YES) / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	(YES) / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / (NO)	
PAHs	4° C	1 - 8oz wide mouth jar	(YES) / NO	

OBSERVATIONS / NOTES:

- sample contains roots, bark, and organic matter
- location in cleared area, surface soil disturbed by heavy machinery

MAP:



Circle if Applicable:

MS/MSD: ____

Duplicate ID No.: DUP01

Signature(s): Tori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: ~~SB~~ CRP-SB07-0406
Sample Location: SB07
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/26/09	4-6	Brown	-see boring Log Sheet
Time: 1324			
Method: Hollowstem Auger, Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

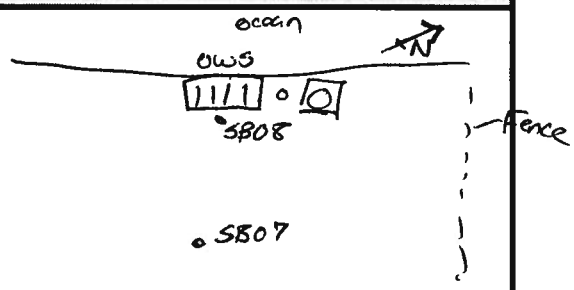
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

-Collected to sample sub surface soil above water table

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[x] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB07-0810
Sample Location: SB07
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/26/09 Time: 1342 Method: Hollow Stem Auger - split spoon Monitor Reading (ppm): 0.0	8-10'	grey / Brown	-See boring log sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected just above ground water table

MAP:

-see CRP-SB07-0406 sample log sheet

Circle If Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB07-1416
Sample Location: SB07
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/26/09 Time: 1429 Method: Hollow Stem Auger - Split Spoon Monitor Reading (ppm): 0.0	14-16'	Grey/Brown	- see boring log sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected just above bedrock

MAP:

- See CRP-SB07-0406 log sheet

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CP-SB08-0001
Sample Location: SB08
Sampled By: LA
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/13 Time: 1030 Method: hand auger Monitor Reading (ppm):	0-1ft.	brown	sandy silt (fine grained sand), some fine gravel (very angular to rounded) trace coarse gravel (subrounded), slightly mois

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

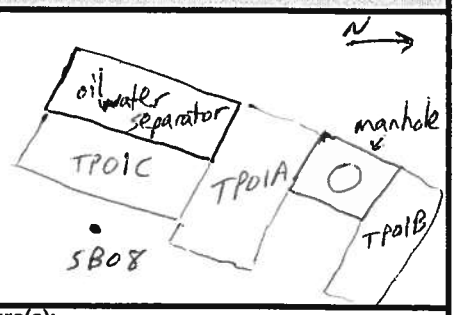
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	(YES) / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	(YES) / NO	
GRO	MeOH	1 - 40ml VOC vial	(YES) / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	(YES) / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	(YES) / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / (NO)	
PAHs	4° C	1 - 8oz wide mouth jar	(YES) / NO	

OBSERVATIONS / NOTES:

-sample contains roots and organic matter
-location in cleared area, surface soil disturbed by heavy machinery

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Lori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB08-0810
Sample Location: SB08
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/26/09 Time: 1006 Method: Drive & Wash - Split Spoon Monitor Reading (ppm): 0.0	8-10	Brown/grey	- see boring log sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

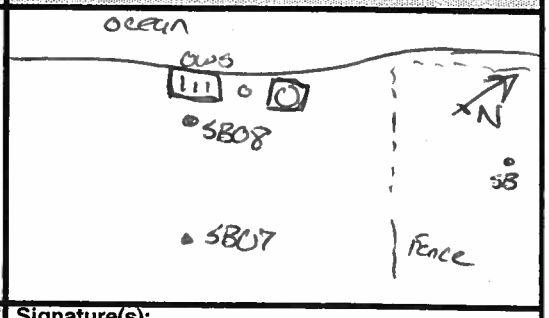
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected at ground water level

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	DUP05

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB08-~~0810~~ 1214
Sample Location: SB08
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/26/09 Time: 1019 Method: Drive & Wash - Split Spoon Monitor Reading (ppm): 24.0	~~8~~ 12-14	Brown/Grey	- See Boring Log Sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected because of high PID reading

MAP:

- see CRP-SB08-0810 sample log sheet

Circle If Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB08-1416
Sample Location: SB08
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/26/09 Time: 1107 Method: Drive & Wash - Split Spoon Monitor Reading (ppm): 0.7	14-16	Brown/Grey	- see boring log sheet

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collecte just above groundwater

MAP:

- see CRP-SB08-0810 sample log

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CPP-SB09-0001
Sample Location: SB09
Sampled By: LA
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/12/09 Time: 1405 Method: hand auger Monitor Reading (ppm):	0-1ft.	dark brown	sandy silt (fine grained sand), trace fine gravel, moist

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

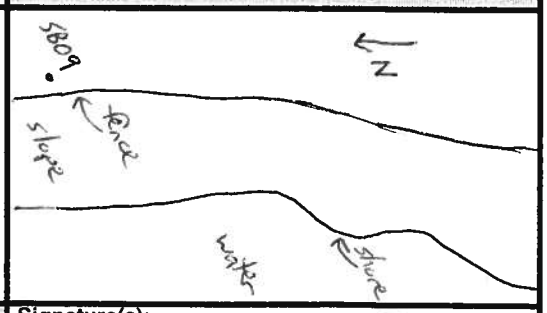
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	(YES) / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	(YES) / NO	
GRO	MeOH	1 - 40ml VOC vial	(YES) / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	(YES) / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	(YES) / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / (NO)	
PAHs	4° C	1 - 8oz wide mouth jar	(YES) / NO	

OBSERVATIONS / NOTES:

- sample contains roots and organic matter
- sample contains lots of fragments of clay pidgeons (painted neon orange)
- ammunition casing in sample

MAP:



Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Lori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB09-0608
Sample Location: SB09
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/18/09	6-8'	Brown	See Boring Log
Time:			
Method: Drive & Wash Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

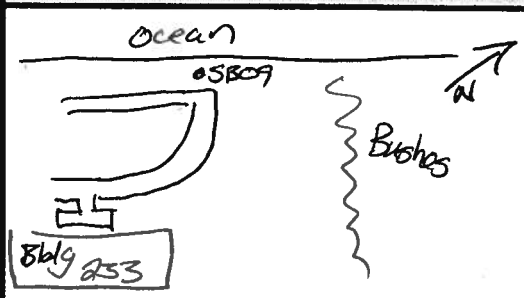
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected because sample was located above watertable

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	NA

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB09-1214
Sample Location: SB09
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/18/09	12-14'	Brown	See Boring Log
Time:			
Method: Drive & Wash Split Spoon			
Monitor Reading (ppm): 0.6			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- sample collected because of high area of hits from PID

MAP:

See CRP-SB09-0608

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB09-3840
Sample Location: SB09
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/18/09	38-40'	Grey	See Boring Log
Time:			
Method: Drive & Wash Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected above bedrock

MAP:

See CRP-SB09-0608

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NA	Dup02

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB10-0001
Sample Location: SB10
Sampled By: LA and MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/13/09 Time: 1430 Method: hand auger Monitor Reading (ppm):	0-1ft.	grayish brown	Silty sand (round, medium grained), lots of angular gravel (gray)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

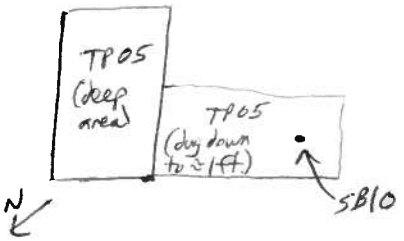
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- location is where TP05 was located, sample is in backfilled area

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): Tori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB10-0810
Sample Location: SB10
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/21/09	8-10'	Brown	-See Boring Log
Time: ~~0834~~ 0749			
Method: Direct Wash Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

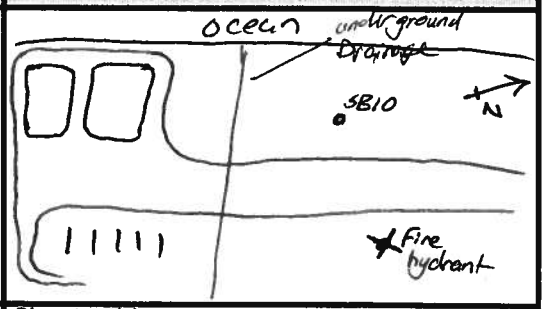
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	(YES) / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	(YES) / NO	
GRO	MeOH	1 - 40ml VOC vial	(YES) / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	(YES) / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	(YES) / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / (NO)	
PAHs	4° C	1 - 8oz wide mouth jar	YES / (NO)	

OBSERVATIONS / NOTES:

- Sample collected just above ground water level

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB10-1214
Sample Location: SB10
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/21/09	12-14'	grey	- See boring log
Time: 0801			
Method: Drive & Wash Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- collected between watertable and bedrock

MAP:

- See CRP-SB10-0810 Log Sheet

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[x] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB10-1618
Sample Location: SB10
Sampled By: MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/21/09 Time: 0843 Method: Drive & Wash Split Spoon Monitor Reading (ppm): 0.0	16-18'	grey	-see boring Log

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

-collected just above bedrock

MAP:

-See CRP-SB10-0810 Log Sheet

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB11-0001
Sample Location: SB11
Sampled By: LA
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/13/09 Time: 1255 Method: hand auger Monitor Reading (ppm):	0-1 ft.	brown	sandy silt (fine grained sand), little fine gravel (very angular to rounded) trace coarse gravel (subangular), slightly moist

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

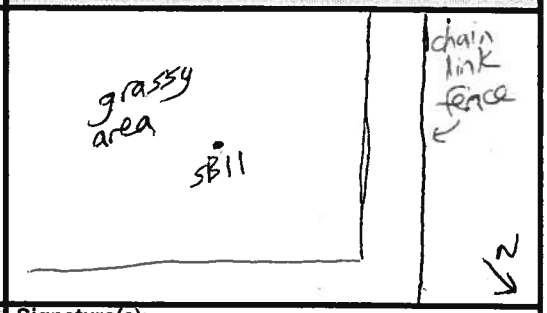
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	(YES) / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	(YES) / NO	
GRO	MeOH	1 - 40ml VOC vial	(YES) / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	(YES) / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	(YES) / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / (NO)	
PAHs	4° C	1 - 8oz wide mouth jar	(YES) / NO	

OBSERVATIONS / NOTES:

-roots and organic material in sample

MAP:



Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Lori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB11-0810
Sample Location: SB11
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/22/09	8-10		See Boring Log Sheet
Time: 0850			
Method: Drive & Wash - Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

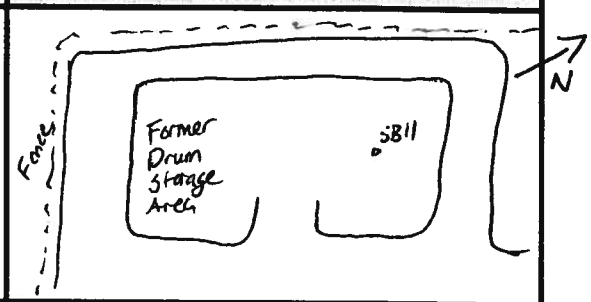
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40mL vial	YES / NO	
Pesticides / PCBs	4° C	1 - 4oz wide mouth jar	YES / NO	
TAL Metals	4° C	1 - 4oz wide mouth jar	YES / NO	
Propellants	4° C	1 gallon plastic bag	YES / NO	
PAHs	4° C	1 - 4oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- Sample collected because 8-10' is believed to be located just above the GW table

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB11-1214
Sample Location: SB11
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/22/09	12-14		See Boring Log Sheet
Time: 0901			
Method: Drive & Wash - Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40mL vial	YES / NO	
Pesticides / PCBs	4° C	1 - 4oz wide mouth jar	YES / NO	
TAL Metals	4° C	1 - 4oz wide mouth jar	YES / NO	
Propellants	4° C	1 gallon plastic bag	YES / NO	
PAHs	4° C	1 - 4oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- Sample Collected because it was located between competant bedrock and the GW Table

MAP:

- See CRP-SB11-0810 sample log sheet For Map

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[ ] Surface Soil
[X] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SB11-1618
Sample Location: SB11
Sampled By: M. Horton
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/22/09	16-18		-See Boring log Sheet
Time: 0937			
Method: Drive & Wash Split Spoon			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40mL vial	YES / NO	
Pesticides / PCBs	4° C	1 - 4oz wide mouth jar	YES / NO	
TAL Metals	4° C	1 - 4oz wide mouth jar	YES / NO	
Propellants	4° C	1 gallon plastic bag	YES / NO	
PAHs	4° C	1 - 4oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

- sample collected because it is located just above competant bedrock

MAP:

- See CRP-SB11-0810 Sample Log Sheet For Map

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s): [signature]

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD01-0006
Sample Location: SD01
Sampled By: M. Horton, L. Anderson
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/19/09 Time: 1100 Method: Monitor Reading (ppm):	0-6	greyish brown	silty sand (f-m), some gravel and shell fragments up to 1 in.

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES / NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
HDEM metals split		ziplock bag	YES	

OBSERVATIONS / NOTES:

bowl = 0.4500 kg → 2.4178 kg
bowl = 0.5044 kg → 1.4736 kg
- sample comprised of 8 2-in cores
- pellets observed during field sieving
- clay pigeon fragments observed during field sieving

Total Sediment Weight - 2.938 kg

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Lori Anderson

# of Pellets Recovered - 6 ~~0.2g~~ ~~0.4g~~ 0.2g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

Sample ID No.: CRP-SD01-0612
Sample Location: SD01
Sampled By: M. Horton, L. Anderson
C.O.C. No.:

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/19/09 Time: 1100 Method: Monitor Reading (ppm):	6 – 8	grayish dark brown	silty sand (f-m), few gravel (fine to coarse, up to 1.25 in.)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES / NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RIDEM metals split		ziplock bag	NO	inadequate sample volume

OBSERVATIONS / NOTES:

bowl = 0.5254 → 1.8744
- sample comprised of 8 2-in cores
- no pellets observed during field sieving
- piece of metal found in coarse part of sample

Total Sediment Weight - 1.349 kg

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Lori Anderson

# of Pellets Recovered - 2

CRP-SD02-0000

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: ~~CRP-SD01-0~~ 6/19/09
Sample Location: SD02
Sampled By: M. Horton, L. Anderson
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/19/09 Time: 1200 Method: Monitor Reading (ppm):	0-6	gray	silty sand (f-coarse grained), some fine gravel, few coarse gravel

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date:				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES / NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RIDEM metals split		7 ziplock bag	Yes	

OBSERVATIONS / NOTES:

bowl = 0.4468 → 2.6054 kg
bowl = 0.5194 → 1.7300 kg
- clay pigeon fragment observed during field sieving
- pellets observed during field sieving
- sample comprise of 8 2-in cores
Total sediment weight - 3.369 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	

Signature(s): Lori Anderson

# of Pellets - 5 0.2g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CP-SD02-0612
Sample Location: SD02
Sampled By: M. Horton, L. Anderson
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/19/09 Time: 1200 Method: Monitor Reading (ppm):	6-9	gray brown	silty sand (f-c grained) some fine gravel

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES / NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RIDEM metals split		ziplock bag	NO	inadequate sample volume

OBSERVATIONS / NOTES:

bowl = 0.5052 kg → 1.6678 kg
- sample comprised of 8 2-in. cores
- no pellets observed during field sieving

Total Sediment Weight - 1.163 kg

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Lori Anderson

# of Pellets Found - 0

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

Sample ID No.: CRP-SD03 0006
Sample Location: SD03
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 6/18/09	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1230	0-6"	~~Black~~ MH grey/Black	Fine to medium grained sand with ~~rounde~~ some rounded rocks and shell fragments up to 1.5"
Method: Sediment Corer			
Monitor Reading (ppm): NM			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES~~ / NO	
TAL Metals	4° C	4oz Glass Jar	~~YES~~ / NO	
PTEDEM Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.444 kg → ~~1.817~~ 2.072
0.501 kg → 2.602
- refusal at 6" only one sample collected
- sample comprised of 8, 2" cores
- Few pellets observed during field sieving

Total Sediment Weight - 3.729 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	DUP04

Signature(s): M. Horton

# of Pellets Recovered - 51 2.4g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD04-C006
Sample Location: SD04
Sampled By: M. Horton, ~~E. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/18/09 Time: 1330 Method: Sediment Corer Monitor Reading (ppm): NM	0-6"	GREY/BLACK	Silty Sand, Fine to medium grained sand with some rounded rocks and shell fragments up to 1.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES / NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RIDEM Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.442kg ⟶ 2.583kg
- Refusal at 6" - many cores only had 2-3" of sediment
- Sample comprised of 8, 2" cores
- No pellets observed during field sieving

Total Sediment Weight - 2.141 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s): MR Hort

# of Pellets Recovered - 8 0.2g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD05-0006
Sample Location: SD05
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/15/09 Time: 1430 Method: Sediment Corer Monitor Reading (ppm): NM	0-6"	Black/Grey	Fine to coarse grained sand with some rounded stones & shell fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES / NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RI State Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl Weight 0.4462 kg → 2.129
0.499 kg → 2.172
- Refusal at 6" - only 0-6" sampled at SD05
- Sample comprised of 8, 2" cores

Total Sediment Weight - 3.356

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s): M J Hor

# of Pellets Recovered - 34 1.6g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD06-0006
Sample Location: SD06
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/15/09 Time: 1130 Method: Sediment Corer Monitor Reading (ppm): NM	0-6	Grey/Black	- Fine to coarse sand with rocks and shells up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES / NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RI Split Metals		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

- Bowl Weight 1.119 ~~kg~~ lbs .5092 kg → 2.33
  0.442 kg → 1.9058
- Lead pellets found in screen
- 8 core tubes combined to make up sample

Total Sediment Weight - 3.285 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	DUP01

Signature(s):

# of Pellets Recovered - 65 3.0g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

Sample ID No.: CRP-SD06-0612 *
Sample Location: SD06
Sampled By: M. Horton, ~~J. Anderson~~
C.O.C. No.:

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/15/08	* 6"-8"	Black/Grey	Silty Sand wet Black/Grey
Time: 1130			
Method: Sediment Corer			
Monitor Reading (ppm): NM			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	(YES) NO	
TAL Metals	4° C	4oz Glass Jar	(YES) NO	
RI SPLIT	cold	Small Z-Lock	✓	

OBSERVATIONS / NOTES:

Bowl weight .5006 Kg
Bowl + Sed 1.376 Kg

8 core tubes combined to comprise this sample
* Penetration only to 8", sample actually 6-8" BGS
Refusal @ 8" BGS

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s): [signature]

# of Pellets Recovered - 48 2.2g

Total Sediment Weight - 0.875 Kg

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD07-0006
Sample Location: SD07
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/15/09 Time: 1320 Method: Sediment Corer Monitor Reading (ppm): NM	0-6"	Black/Grey	- Fine to coarse grained sand with some sub angular rocks and shell Fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES / NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RC Split Metals		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl weight 0.4980 kg → 2.587 kg
0.441 → 1.957 kg

- 8 cores collected to comprise sample
-

Pellets noted in this sample - yes
Total Sediment Weight - 3.605 kg

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: N/A

Signature(s):

[signature]

# of Pellets Recovered - 336 19.6g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD07-0612
Sample Location: SD07
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/15/09 Time: 1320 Method: Sediment Corer Monitor Reading (ppm): NM	6-8	Black / grey	Fine to coarse grained sand with shell fragments & gravel up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES / NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RI split Metals		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl weight - 0.5104 kg → 1.737

- 8 cores collected to comprise sample
- refusal reached at 8" - Sample actually collected from 6-8"
- No Pellets Noted in Sample

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of Pellets Recovered - 12 0.4g

Total Sediment Weight - 1.227kg

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD08-0006
Sample Location: SD08
Sampled By: M. Horton, L. Anderson
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/19/09 Time: 1000 Method: Monitor Reading (ppm):	0-6"	grayish brown	silty sand (f-m), few gravel and shell fragment up to 1 in.

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES / NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
REDEM Metals Split		ziplock bag	Yes	

OBSERVATIONS / NOTES:

bowl = 0.4464 kg → 2.5976 kg
bowl = 0.5012 kg → 1.8648 kg
- sample comprised of 8 - 2" cores
- pellets observed during field ~~sampling~~ sieving LLA 6/19/09

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Lori Anderson

# of Pellets Found - ~~300~~ 586 33.0g

Total Sediment Weight - 3.516 kg

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD08-0612
Sample Location: SD08
Sampled By: M. Horton, L. Anderson
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/19/09 Time: 1000 Method: Monitor Reading (ppm):	6-8"	dark grey	silty sand (f-m grained), few gravel and shell fragments up to ~~1/2 inch~~ 1 inch

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date:				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES / NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RDEM metals split		ziplock bag	YES	

OBSERVATIONS / NOTES:

bowl = 0.5134kg → 1.9594kg
-sample comprised of 8 - 2" cores
-no pellets observed during field sieving

Total Sediment Weight - 1.446 Kg

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Lori Anderson

# of Pellets Found - 38 2.0g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD09-0006
Sample Location: SD09
Sampled By: M. Horton, L. Anderson
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/19/09 Time: 1500 Method: Monitor Reading (ppm):	0-6in.	black brown	silty sand & little fine gravel and shell fragments

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date:				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES / NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RIDEm Metals Split		ziplock bag	Yes	

OBSERVATIONS / NOTES:

bowl = 0.4404kg → 2.1132kg
bowl = 0.4968kg → 1.8198kg
-sample comprised of 8 2-in cores
-pellets observed during field sieving
-sample processed (sieved and placed in sample jars) on 6/22, sample remained in acetate lined tube during that time

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Lori Anderson

Number of Pellets Found - 63 32g

Total Sediment Weight - 2.296kg

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD09-0612
Sample Location: SD09
Sampled By: M. Horton, L. Anderson
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/19/09 Time: 1500 Method: Monitor Reading (ppm):	6-9in.	dark brown	silty sand (f-m), little fine gravel and shell fragments

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	YES NO	
TAL Metals	4° C	4oz Glass Jar	YES NO	
RIDEM metals split		ziplock bag	Yes	

OBSERVATIONS / NOTES:

bowl = 0.5100 kg → 1.2948 kg
- sample comprised of 8 2-in cores
- pellets observed during field sieving
- sample processed (sieved and placed in sample jars) on 6/22, sample remained in acetate lined tube during that time

Total Sediment Weight - 0.785 kg

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Lori Anderson

# of Pellets Found - 48 2.4g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD16-0006
Sample Location: SD10
Sampled By: M. Horton, L. Anderson
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/17/09 Time: 1350 Method: Sediment Corer Monitor Reading (ppm): NM	0-6"	Black/Grey	Silty Sand. Fine to medium grained sand w/ some rounded stones & shell fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES NO~~ NO	
TAL Metals	4° C	4oz Glass Jar	YES NO	
RIDEM Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.498 kg → 2.546
0.440 kg → 1.688
Sample comprised of 8, 2" cores
Pellets observed during field screening

Total Sediment Weight - 3.296 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	DUP03

Signature(s):

# of Pellets Recovered - 295 16.8g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD10-0612
Sample Location: SD10
Sampled By: M. Horton, L. Anderson
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/17/09 Time: 1350 Method: Sediment Corer Monitor Reading (ppm): NM	6-8"	grey/Black	Fine to Medium grained sand w/ little silt and Few rounded rocks & shell fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES~~/NO NO	
TAL Metals	4° C	4oz Glass Jar	(YES)/ NO	
RIDEM Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.508 → 1.838 kg
- sample comprised of 8, 2" cores
- Refusal hit at 8"
- Some Pellets observed during ~~screening~~ field sieveing

Total Sediment Weight - 1.330 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of Pellets Recovered - ~~287~~ 17.0g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD11-0006
Sample Location: SD11
Sampled By: M. Horton, ~~L. Andersen~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/16/09 Time: 1400 Method: Sediment Corer Monitor Reading (ppm): NM	0-6"	Black/Grey	Fine to coarse grained sand with some rounded gravel and shell fragments up to 1.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES / NO~~ No	
TAL Metals	4° C	4oz Glass Jar	~~YES~~ / NO	
RIDEM Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.498 kg → 2.715 kg
0.442 kg → 1.840 kg
Sample is comprised of 8, 2" cores
- Many Pellets seen during Field screening
Total Sediment Weight - 3.615 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of Pellets Recovered - 945 59.6g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD11-0612
Sample Location: SD11
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/16/09 Time: 1400 Method: Sediment Corer Monitor Reading (ppm): NM	6-8"	Black/Grey	~~Med~~ Fine to coarse grained sand with rounded stones & shell fragments up to 1"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES~~ NO NO	
TAL Metals	4° C	4oz Glass Jar	YES NO	
RIDEM Metals Split		ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.509 kg → 2.272 kg
sample comprised of 8, 2" cores
Many Pellets observed during screening

Total Sediment Weight - 1.763 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s): [signature]

# of Pellets Recovered - ~~300+~~ 506

32.2g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD12-0006
Sample Location: SD12
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/18/09 Time: 1000 Method: Sediment Corer Monitor Reading (ppm): NM	0-5"	Black/grey	Silty Sand, Fine to coarse grained sand with rounded rocks and shell fragments up to 1.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES / NO~~ NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
REDEM Metals split			NO (see below)	

OBSERVATIONS / NOTES:

Bowl = 0.497 kg → 2.140 kg

Refusal @ 5"
- Many cores only had 2-3"
- Could not split sample for state - Not enough material
- sample comprised of 8, 2" cores
- pellets observed during field sieving

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s): [signature]

# of Pellets Recovered - 138 8.6g

Total Sediment weight - 1.643 kg

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD13-C006
Sample Location: SD13
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/17/09 Time: 1100 Method: Sediment Corer Monitor Reading (ppm): NM	0-6"	grey/Black	Fine to medium grained sand with little silt, few rounded stones & shell fragments up to 1"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES~~/NO NO	
TAL Metals	4° C	4oz Glass Jar	YES/NO	
RIDEM Metals Split		Ziplock Bag	yes	

OBSERVATIONS / NOTES:

Bowl: 0.442 kg → 2.458 kg
0.496 kg → 2.153 kg
-Sample comprised of 8, 2" cores

Total Sediment Weight - 3.673 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of Pellets Recovered - 99 5.6g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD13-0612
Sample Location: SD13
Sampled By: M. Horton, ~~L. Andersen~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/17/09 Time: 1100 Method: Sediment Corer Monitor Reading (ppm): NM	6-8"	grey/Black	Fine to medium grained sand w/ few rounded rocks & shell fragments up to 0.5"

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date:				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES / NO~~ NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RIDEM Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.509 kg → 2.048 kg
Sample comprised of 8, 2" cores
refusal at 8"

Total Sediment Weight - 1.539 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of Pellets Recovered - 132 7.8g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD14-0006
Sample Location:
Sampled By: M. Horton ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/18/09 Time: 1130 Method: Monitor Reading (ppm):	0-6"	Grey / Black	- Fine to medium grained sand with few round stones and shell fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES / NO~~ NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
REDEM Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.441 kg → 2.010 kg
0.507 kg → 2.533 kg
- Sample comprised of 8.2" cores
- pellets observed during field sieving

Total Sediment Weight - 3.595 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s): [signature]

# of Pellets Found - 151 10.4g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD14-0612
Sample Location: SD14
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/18/09 Time: 1130 Method: Sediment Corer Monitor Reading (ppm): NM	6-8	grey/Black	-Fine grained sand w/ little medium grained sand and few round stones & shell fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES / NO~~ NO	
TAL Metals	4° C	4oz Glass Jar	(YES) / NO	
RIDEM Metals Split		Ziplock Bag		

OBSERVATIONS / NOTES:

Bowl = 0.499 kg ⟶ 1.825
-refusal at 8"
-sample comprised of 8, 2" cores
-pellets observed during field sieving

Total Sediment Weight - 1.326 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of Pellets Recovered - 181 11.4g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD015-0006
Sample Location: SD15
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/16/05 Time: 1250 Method: Sediment Corer Monitor Reading (ppm): NM	0-6	Black/Grey	Fine to Medium grained sand with some rounded rocks and shell fragments up to 1"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES~~ / NO No	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RIDEM Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.499 → ~~2.326 kg~~ 2.602 kg
0.569 → 2.146 kg
Sample is composed of 8 cores (2")
- Many Pellets observed during Field sieve

Total Sediment Weight - 3.740 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	DUP02

Signature(s): [signature]

# of Pellets Recovered - 312 23.4

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD15-0612
Sample Location: SD15
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/16/09 Time: 1250 Method: Sediment Corer Monitor Reading (ppm): N/M	6-12"	Black/Grey Brown	Fine to Medium grained sand, same as 0-6" Bottom 1" brown organic Fibery material

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES~~ / ~~NO~~ NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RADEM Metals Split		Zip lock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl: 0.442 → 2.2326 kg
Sample composed of 8, 2" cores
Many Pellets observed during Field sieving

Total Sediment Weight - 1.791 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s): Mike J Horton

# of Pellets Recovered - ~~312~~ ~~23.4g~~
297 22.8

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD16-0006
Sample Location: SD16
Sampled By: M. Horton, L. Anderson
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/17/09 Time: 1210 Method: Sediment Cover Monitor Reading (ppm): NM	0-6"	Black/grey	Silty Sand - Fine to Medium grained sand with few rounded stones and shell fragments up to 1"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES / NO~~ NO	
TAL Metals	4° C	4oz Glass Jar	~~YES~~ / NO	
State Metals Split			Yes	

OBSERVATIONS / NOTES:

Bowl = 0.499 kg → 2.113 kg
0.441 kg → 1.830 kg
Sample comprised of 8, 2" cores
pellets observed during field sieving

Total Sediment Weight - 3.003 kg

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: N/A

Signature(s):

# of Pellets Recovered - 114 8.2g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD16-06R
Sample Location: SD16
Sampled By: M. Horton, ~~E. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/17/09 Time: 1210 Method: Sediment Corer Monitor Reading (ppm): N/A	6-9"	grey/black	Fine to medium grained sand with few rounded rocks and shell fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES~~ NO N/A	
TAL Metals	4° C	4oz Glass Jar	~~YES~~ NO	
REDEM Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.510 kg → 1.994 kg
Sample comprised of 8, 2" cores
refusal at 9" so sample from 6-9"
pellets observed during field screening

Total Sediment Weight - 1.484 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of Pellets Recovered - 350 26.8g

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD17-0006
Sample Location: SD17
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/16/09 Time: 1500 Method: Sediment Corer Monitor Reading (ppm): NM	0-6"	Black/Grey	Fine to coarse grained sand with some stones and shell fragments up to 2"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES/NO~~ NO	
TAL Metals	4° C	4oz Glass Jar	~~YES~~ / NO	
RIDEM Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.498 kg → 2.183 kg
0.510 kg → 1.563 kg
- Sample comprised of 8, 2" cores
- Some Pellets observed during field sieve

Refusal at 6" one sample only (large rock at location)

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of Pellets Recovered - 44 3.2g
Total Sediment Weight - 2.738 kg

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD18-0006
Sample Location: SD18
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/16/09 Time: 1025 Method: Sediment Corer Monitor Reading (ppm): NM	0-6	Black/Grey	Fine to Medium grained sand with Few rounded rocks and shell fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES / NO~~ NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
TSI State split Metals		Ziplock Bag		

OBSERVATIONS / NOTES:

Bowl = 0.508 kg → 1.758
0.439 kg → 2.215
8 cores collected to comprise sample
No pellets identified initially in field
Total Sediment Weight - 3.026 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s): [signature]

# of Pellets Recovered - 0

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD18-0612
Sample Location: SD18
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/16/09 Time: 1025 Method: Sediment Corer Monitor Reading (ppm): NM	6-8"	Black/Grey	Fine to medium grained sand with Few ~~sr~~ rounded gravel and shell Fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES / NO~~ NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RI Metals Split			Yes	

OBSERVATIONS / NOTES:

Bowl = 0.497 kg → 1.698

8 cores combined to comprise sample
one pellet identified during field sieving
cores reached 12" but only recovered 6-8"
Total Sediment Weight - 1.201 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of pellets Recovered - 1 Weight Not Measureable with scale

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD19-0006
Sample Location: SD19
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/16/09 Time: 1125 Method: Sediment Corer Monitor Reading (ppm): NM	0-6"	Black/Grey	Fine to medium grained sand with few rock and shell fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES~~ / NO NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RI Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.451 kg → 2.669
0.499 kg → 1.929 kg
Sample comprised of 8 core tubes
A few pellets observed during field screening
- Sample cores reached 12" but only had between 8-6" of recovery

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of Pellets Recovered - 5 0.4g

Total Sediment Weight - 3.648 kg

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD19-0612
Sample Location: SD19
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/16/09 Time: ~~10~~ 1125 Method: Sediment Corer Monitor Reading (ppm): NM	6-8"	Black/Grey	Fine to Medium grained sand with very Few rounded Rocks and Shell Fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES~~ / NO NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RI Split Metals		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.513 → 1.803 kg
Sample comprised of 8 core Tubes
No lead pellets observed during Field Screening
-Sample cores reached 12" but only 6-8" of recovery
Total Sediment Weight - 1.290 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of Pellets Recovered - 1 ~~0g~~ Weight Not measureable w/ scale

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD20-0006
Sample Location: SD20
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/17/09 Time: 0945 Method: Sediment Corer Monitor Reading (ppm): NM	0-6"	Black/Grey	Fine to Medium grained sand with Few ~~wet~~ rounded rocks and shell fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES~~ / NO NO	
TAL Metals	4° C	4oz Glass Jar	YES / NO	
RIDEM Metals split		Ziplock 1.5gg	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.441 kg ⟶ 2.136 kg
0.507 kg ⟶ 2.564 kg
- sample comprised of 8, 2" cores
- Refusal at 8" at this location

Total Sediment Weight - 3.752 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of Pellets Recovered - 0

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: CTO 406, Carr Point
Project No.: 112G00870-0000.0330

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SD20-0612
Sample Location: SD20
Sampled By: M. Horton, ~~L. Anderson~~
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 6/17/09 Time: 0945 Method: Sediment Corer Monitor Reading (ppm): NM	6-8"	Black/Grey	Fine to Medium grained sand w/ Few rounded rocks & shell fragments up to 0.5"

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
SVOC's	4° C	4oz Glass Jar	~~YES/NO~~ NO	
TAL Metals	4° C	4oz Glass Jar	YES/ NO	
RIDEM Metals Split		Ziplock Bag	Yes	

OBSERVATIONS / NOTES:

Bowl = 0.496 kg ⟶ 1.760
- Sample comprised of 8, 2" cores
- Refusal at 8" - sample actually only 6-8"
- No pellets observed during Field sieving

Total Sediment Weight - 1.264 kg

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

# of Pellets Recovered - 1

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SS01-0006
Sample Location: SS01
Sampled By: LA/MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/13/09 Time: 1540 Method: hand auger Monitor Reading (ppm): 0.0	0-6in.	brown	silty sand (medium), plates of filite up to 3in. (some)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

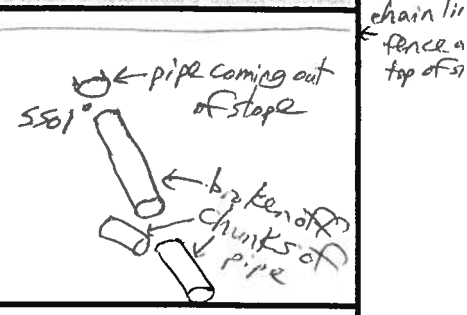
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	(YES) / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	(YES) / NO	
GRO	MeOH	1 - 40ml VOC vial	(YES) / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	(YES) / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	(YES) / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES (NO)	
PAHs	4° C	1 - 8oz wide mouth jar	(YES) / NO	

OBSERVATIONS / NOTES:

- Sample collected below outfall where water is likely to pool if it was running
- Many pieces of flat phyllite up to 4"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	

Signature(s): Tori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SS01-0612
Sample Location: SS01
Sampled By: LA/MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/13/09 Time: 1543 Method: hand auger Monitor Reading (ppm): 0.0	6-12 in.	Brown	silty sand (medium grained), plates of shale up to 1 in (some)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date:				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	(YES) / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	(YES) / NO	
GRO	MeOH	1 - 40ml VOC vial	(YES) / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	(YES) / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	(YES) / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / (NO)	
PAHs	4° C	1 - 8oz wide mouth jar	(YES) / NO	

OBSERVATIONS / NOTES:

→ see log sheet for CRP-SS01-0006

MAP:

See map of CRP-SS01-0006

Circle if Applicable:

MS/MSD ✓

Duplicate ID No.:

Signature(s): Lori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SS02-0006
Sample Location: SS02
Sampled By: LA/MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/13/09 Time: 1505 Method: hand auger Monitor Reading (ppm): 0.0	0-6 in.	brown	sandy silt (fine grained), angular gravel (filite) up to 3 in. (some)

COMPOSITE SAMPLE DATA:

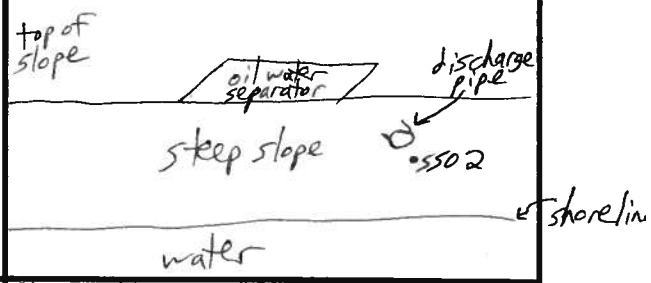
Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	YES / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	YES / NO	
GRO	MeOH	1 - 40ml VOC vial	YES / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	YES / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	YES / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / NO	
PAHs	4° C	1 - 8oz wide mouth jar	YES / NO	

OBSERVATIONS / NOTES:

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Lori Anderson

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

la 5/13/0

0612

Project Site Name: MRP Site 01, Carr Point
Project No.: 112G00870

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CRP-SS02-~~0006~~
Sample Location: SS02
Sampled By: LA/MH
C.O.C. No.:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 5/13/09 Time: 1310 Method: hand auger Monitor Reading (ppm): 0.0	6-12in.	brown	Sandy silt (fine grained), angular gravel (filled) up to 3in. (few)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
VOC's	MeOH (in one vial)	3 - 40mL Vials, 1 - 2oz jar %moisture	(YES) / NO	
SVOC's / DRO	4° C	1 - 8oz wide mouth jar	(YES) / NO	
GRO	MeOH	1 - 40ml VOC vial	(YES) / NO	
Metals	4° C	1 - 8oz (soil), 16oz (sed) wide mouth	(YES) / NO	
Pesticides/PCBs	4° C	1 - 8oz wide mouth jar	(YES) / NO	
Propellants	4° C	1 - 1 Gal plastic container	YES / (NO)	
PAHs	4° C	1 - 8oz wide mouth jar	(YES) / NO	

OBSERVATIONS / NOTES:

MAP:

see map for CRP-SS02-0006

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Lori Anderson

Tetra Tech NUS, Inc.

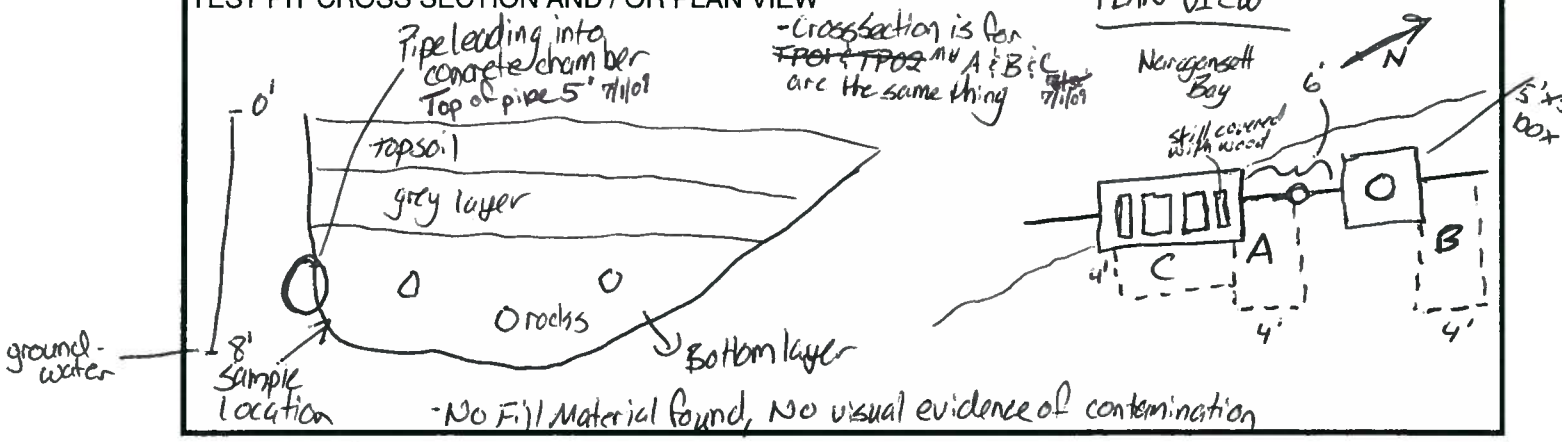
TEST PIT LOG

see back side

PROJECT NAME: MRP Site 01, Carr Point
PROJECT NUMBER: 112G00870
LOCATION: NAVSTA Newport, Portsmouth RI
TEST PIT No.: TP01 (A&B)(&C)
DATE: 5/11/09
GEOLOGIST: M. Horton

Depth (Ft.)	Lithology Change (Depth/Ft.)	MATERIAL DESCRIPTION: Soil/Waste Characteristics (lithology, density, color, etc.)	USCS	Remarks ~~Head Space~~	PID/FID READING Source (ppm)	PID/FID READING BZ (ppm)
	0-1.5'	- Topsoil with roots and some organics				
		sandy silt, brown, rounded gravel			0.0	
		and rocks up to 0.5'				
	1.5-2'	- Greyish brown layer, more silty			0.0	
		with more fine sand, some gravel				
		up to 3" more angular				
	2'+	Brown material with some clay and			0.0	
		medium grained sand - some large				
		round rocks up to 12"				
				Head space from		
		- water level in OWS & Manhole is about		Sample areas		
		5' bgs ~~did not encounter groundwater~~		A B		
		- No PID Reading from TP soil Pile		0.0 0.0		

TEST PIT CROSS SECTION AND / OR PLAN VIEW



- No Fill Material found, No visual evidence of contamination

REMARKS: Contractor - Global Remediation
- OWS - chambers 3' wide, large chambers 3' long, small 1' long, total 11' long 4' wide

PHOTO LOG: 1-3 Test pit pics B 4-6 test pit A

Sample collected from directly beneath inlet pipe 5-6' before OWS & Concrete Manhole
- Test pit C was excavated to make sure there was no sheen on water seeping in from beneath OWS - Bottom of OWS located ~ 7' bgs 7/1/09

Tetra Tech NUS, Inc.

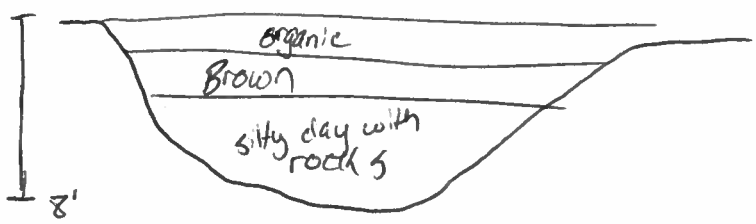
TEST PIT LOG

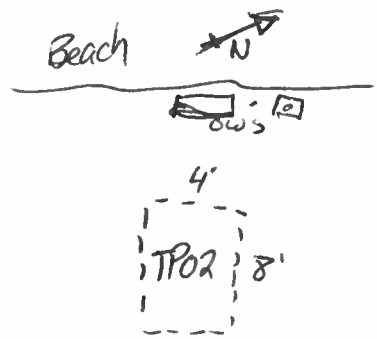
PROJECT NAME: MRP Site 01, Carr Point
PROJECT NUMBER: 112G00870
LOCATION: NAVSTA Newport, Portsmouth RI

TEST PIT No.: TP02
DATE: 5/12/09
GEOLOGIST: M. Horton

Depth (Ft.)	Lithology Change (Depth/Ft.)	MATERIAL DESCRIPTION: Soil/Waste Characteristics (lithology, density, color, etc.)	USCS	Remarks	PID/FID READING: Source (ppm)	PID/FID READING: BZ (ppm)
	0-.5'	Organic layer - sticks & Debris				
	0.5-1.5'	Brown silty sand with rocks up to 12"				
	1.5'+	Sandy silt with some clay, once groundwater was finished filling the pit it was about 3' bgs				
	8'	Bottom of Pit				
		-No evidence of contamination				
		-TP dug because material encountered seemed more rocky then other material encountered during scouring of the ground trying to find the drain pit				

TEST PIT CROSS SECTION AND / OR PLAN VIEW





REMARKS:

PHOTO LOG:

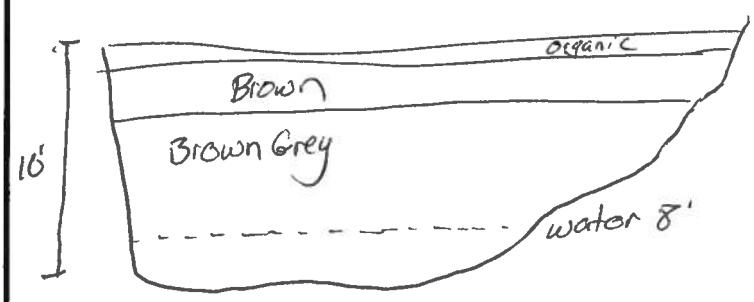
Tetra Tech NUS, Inc.

TEST PIT LOG

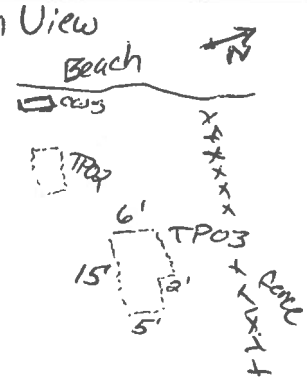
PROJECT NAME: MRP Site 01, Carr Point
PROJECT NUMBER: 112G00870
LOCATION: NAVSTA Newport, Portsmouth RI
TEST PIT No.: TP 03
DATE: 5/12/09
GEOLOGIST:

Depth (Ft.)	Lithology Change (Depth/Ft.)	MATERIAL DESCRIPTION: Soil/Waste Characteristics (lithology, density, color, etc.)	USCS	Remarks	PID/FID READING: Source (ppm)	PID/FID READING: BZ (ppm)
	0-.5'	Organic layer w/ leaves & sticks				
	0.5'-1.5'	Brown silty sand (medium grained) with some rounded rocks up to 8" in size				
	1.5+	Dark Brown to grey silty sand with some clay, large rocks up to 12"				
	10'	Bottom of Boring				
		- water table found @ 8'				
		TP excavated to look at material deep to see if it was similar to TP02 material - it is less sandy more clay - water is filling much slower				

TEST PIT CROSS SECTION AND / OR PLAN VIEW



Plan View



REMARKS:

PHOTO LOG:

TEST PIT LOG

Tetra Tech NUS, Inc.

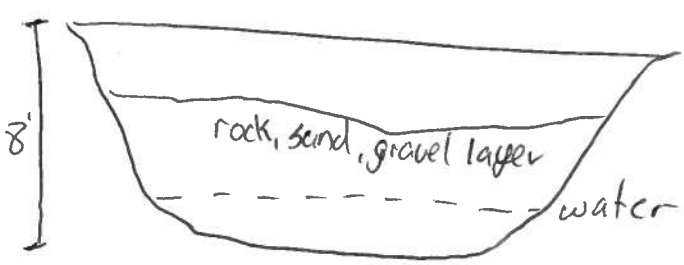
PROJECT NAME: MRP Site 01, Carr Point
PROJECT NUMBER: 112G00870
LOCATION: NAVSTA Newport, Portsmouth RI

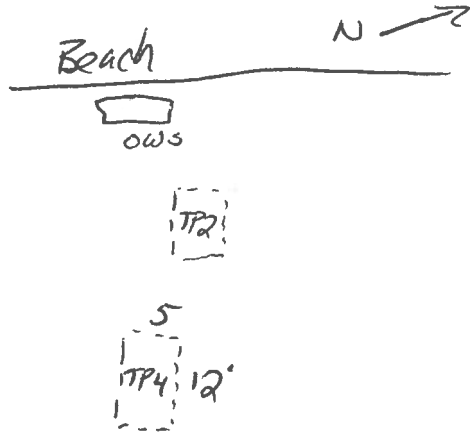
TEST PIT No.: TP04
DATE: 5/12/09
GEOLOGIST: M. Horton

general site conditions actual when dug had been disturbed down to 3'

Depth (Ft.)	Lithology Change (Depth/Ft.)	MATERIAL DESCRIPTION: Soil/Waste Characteristics (lithology, density, color, etc.)	USCS	Remarks	PID/FID READING: Source (ppm)	PID/FID READING: BZ (ppm)
	0-.5	Organic layer				
	.5-1.5	Brown layer				
	3'+	Brown / Grey large grained silty sand with lots of gravel and rounded stones 8" large, water encountered at 7'				
	8'	Bottom of Pit				
		· sample collected because this location is where the drawings show it after it was sealed off				

TEST PIT CROSS SECTION AND / OR PLAN VIEW





REMARKS: Sample Collected 1230 ~~Tir~~ Depth 0506

PHOTO LOG:

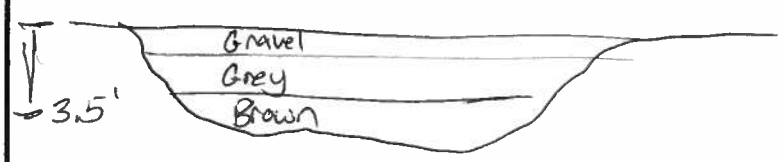
TEST PIT LOG

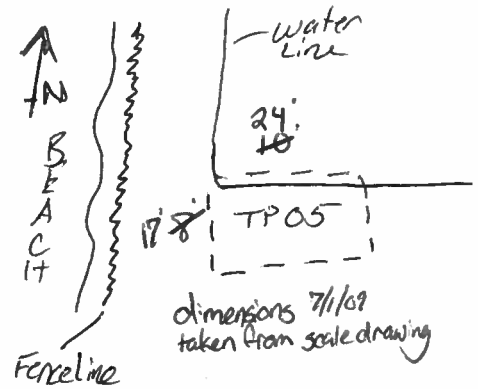
Tetra Tech NUS, Inc.

PROJECT NAME: MRP Site 01, Carr Point
PROJECT NUMBER: 112G00870
LOCATION: NAVSTA Newport, Portsmouth RI
TEST PIT No.: TP05
DATE: 5/12/09 & 5/13/09
GEOLOGIST: M. Horton

Depth (Ft.)	Lithology Change (Depth/Ft.)	MATERIAL DESCRIPTION: Soil/Waste Characteristics (lithology, density, color, etc.)	USCS	Remarks	PID/FID READING: Source (ppm)	PID/FID READING: BZ (ppm)
	0-1'	Compact gravely material used to create parking lot				
	1-2	Grey material (silty sand) with fragments of phyllite in it				
	2+	Silty sand, medium grained with rounded rocks up to 12" - Water line found at about 3' deep				
	3.5'	-Test Pit Bottom (hit water line)			0.0	0.0
		-Scraped an area to the south of the test pit and immediately found a burried rail road tie				

TEST PIT CROSS SECTION AND / OR PLAN VIEW





REMARKS: Sample CRP-TP05-~~0205~~ 0102

PHOTO LOG:

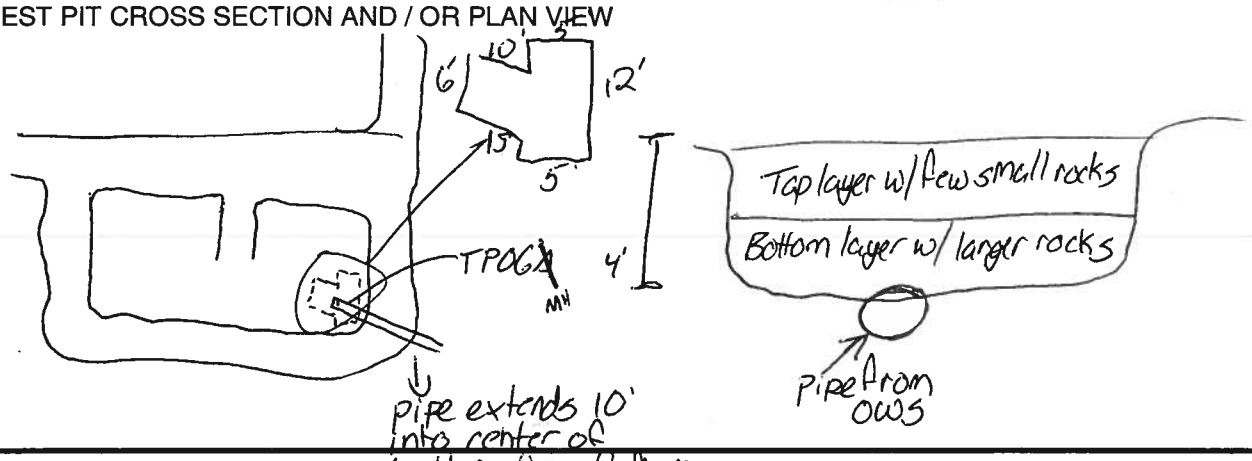
Tetra Tech NUS, Inc.

TEST PIT LOG

PROJECT NAME: MRP Site 01, Carr Point
PROJECT NUMBER: 112G00870
LOCATION: NAVSTA Newport, Portsmouth RI
TEST PIT No.: TP06
DATE: 5/13/09
GEOLOGIST: M. Horton

Depth (Ft.)	Lithology Change (Depth/Ft.)	MATERIAL DESCRIPTION Soil/Waste Characteristics (lithology, density, color, etc.)	USCS	Remarks	PID/FID READING Source (ppm)	BZ (ppm)
	0-3.5'	Brown silty medium grained sand with				
		gravel, rounded - up to 4"				
	3.5+	Same as Above with some larger				
		More angular rocks up to 12"				
	4'	Bottom of test pit - pipe found			0.0	0.0
		Test pit dug deeper (Paul K)				
		- Sample collected at point where				
		pipe terminates just below lip				
	4-7'	clayey sand, medium sand native				
		material no asphalt - No gw observed				
		end of TP				

TEST PIT CROSS SECTION AND / OR PLAN VIEW



REMARKS:

PHOTO LOG: Sample CRP-TP06-0405

Tetra Tech NUS, Inc.

TEST PIT LOG

Page ___ of ___

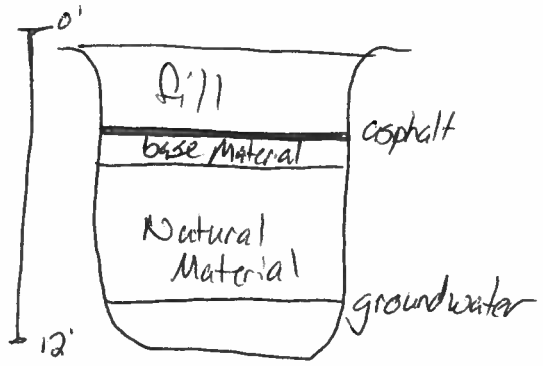
TP07 MH 9/28/09

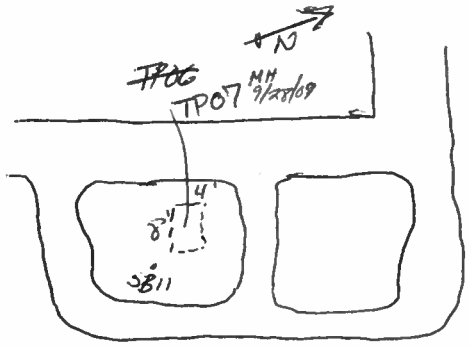
PROJECT NAME: MRP Site 01, Carr Point
PROJECT NUMBER: 112G00870
LOCATION: NAVSTA Newport, Portsmouth RI

TEST PIT No.: ~~TP06~~
DATE: 5/13/09
GEOLOGIST: M. Horton

Depth (Ft.)	Lithology Change (Depth/Ft.)	MATERIAL DESCRIPTION: Soil/Waste Characteristics (lithology, density, color, etc.)	USCS	Remarks	PID/FID READING: Source (ppm)	PID/FID READING: BZ (ppm)
	0-3'	Brown Silty Sand - fill Material - some				
		small stones well rounded				
	3'-4'	less stones, same as above				
	4'	asphalt layer				
	4-4.5	sand layer, base for asphalt				
	4.5-5	dark compact grey material				
	5-8'	light brown clay material				
	8-10'	darker brown material more gravel				
		angular up to 3"				
	10-12'	10' water table dark brown				
		gravely material - end of boring				

TEST PIT CROSS SECTION AND / OR PLAN VIEW





REMARKS: - No Sample collected - only 20' from SB11 so sample will be collected then

PHOTO LOG:

APPENDIX D

DATA VALIDATION MEMORANDUM

TETRA TECH

INTERNAL CORRESPONDENCE

C-NAVY-07-09-3229W

Date: July 14, 2009

c: File G00870-4.10 (w/enc.-original)
T. Campbell (scan, w/o enc.)

To: Steve Parker (scan, w/o enc.)

From: Jennifer Cardinal (no copy) (for)

Subject: Tier II Inorganic Data Validation, SDG CARPT002
Empirical Laboratories, LLC
CTO 406, MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island

Metals:

7/Soils/	CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628
	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840
	CRP-SB09-DUP02		

(Field duplicate pair: CRP-SB09-3840/CRP-SB09-DUP02)

1/Field Blank/ CRP-SB-FB01-051909

1/Rinsate Blank/ CRP-SB-RB01-051809

Tetra Tech NUS, Inc. (TtNUS) performed a Tier II data validation on the metals analytical data for the soil samples collected by TtNUS at MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island from May 18-19, 2009. Sample collection and analysis was performed according to the approved Work Plan and Quality Assurance Project Plan for MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island, dated April 2009.

The metals analysis was performed according to USEPA SW-846 Methods 6010B and 7470A/7471A. The Tier II data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, Part IV, Inorganic Data Validation Functional Guidelines, November 2008.

The sample results, validation qualifiers (VQL), and qualifier codes (QLCD) are presented in the enclosed data summary tables. A list of the qualifier codes, which provide the reasons for the validation qualifiers, is enclosed.

The analytical data in this SDG were evaluated based on the following parameters:

- * Data Completeness
- * Holding Times
- Calibration Verification
- * Laboratory Blank Analyses
- ICP Interference Check Sample Results
- Matrix Spike/Matrix Spike Duplicate
- * Laboratory Duplicate Results
- * Laboratory Control Sample Results
- Field Duplicate Precision

* • ICP Serial Dilution Results
* • Percent Solids
• Reporting Limits

* All quality control criteria were met for this parameter.

Data Completeness

On July 13, 2009 the laboratory clarified the calculation of sample-specific adjusted reporting limits.

Calibration Verification

The following table summarizes the analytes that recovered outside of the 90-110% QC limits in the continuing calibration verifications:

Analyte	%R	Action		Affected Samples
		(+)	NDs	
Magnesium	88.2, 88.9, 88.0	J	UJ	All soil samples and CRP-SB-FB01-051909, CRP-SB-RB01-051809
Chromium	89.6, 89.2, 88.7	J	UJ	All soil samples
Iron	111.1	J		CRP-SB09-DUP02, CRP-SB09-3840, CRP-SB09-1214, CRP-SB01-2628

Although the recoveries of magnesium and iron were outside of the QC limits in the continuing calibration verifications, the project accuracy goals are not impacted since there are no regulatory limits established for these metals for the soil samples. The positive and non-detected magnesium results in the affected samples are usable as estimated values and estimated quantitation limits which may be biased low. The positive iron results in the affected samples are usable as estimated values which may be biased high.

The recoveries of chromium were outside of the QC limits in the continuing calibration verifications; therefore, the project accuracy goals may be slightly impacted. The positive chromium results in the affected samples are usable as estimated values which may be biased low.

ICP Interference Check Sample Results

The following results were qualified in the affected samples due to ICP interference attributed to the high concentration of iron in the samples:

Analyte	Action		Bias	Affected Samples
	(+)	ND		
Lead	J		High	CRP-SB01-2022, CRP-SB01-2628, CRP-SB09-0608, CRP-SB09-1214, CRP-SB09-3840, CRP-SB09-DUP02

The positive results for lead results in the affected samples are qualified as estimated (J) due to positive ICP interference attributed to iron. These results may be biased high.

There were positive ICP interferences attributed to the high concentration of iron that resulted in estimating the positive results for lead in the samples listed above; therefore, the project accuracy goals may be slightly impacted. The positive lead results in the affected samples are usable as estimated values which may be biased high.

Matrix Spike/Matrix Spike Duplicate

The following table summarizes the target metal matrix spiking recoveries that did not meet the laboratory QC limits in the matrix spike and matrix spike duplicate (MS/MSD) analysis and the qualifications applied to all soil samples in the SDG:

CRP-SB01-0608				
Analyte	MS/MSD %Rec.	%Rec. QC Limits	Action	
			(+)	ND
Antimony	37.2 / 36.9	75-125		UJ
Barium	127.0 / 131.5		J	
Calcium	129.1 / met		J	
Copper	55.1 / 68.4		J	
Lead	met / 129.9		J	

The MS/MSD recovery criteria were not met for antimony, copper, and lead; therefore, the project accuracy goals may be impacted. The affected non-detected antimony results are usable as estimated quantitation limit which may be biased low. The affected positive copper results are usable as estimated values which may be biased low. The affected positive lead results are usable as estimated values which may be biased high.

Although the MS/MSD recovery criteria were not met for barium, the project accuracy goals are not impacted since the affected sample results are an order of magnitude below the project action limits. The affected positive barium results are usable as estimated values which may be biased high.

Although the MS/MSD recovery criteria were not met for calcium, the project accuracy goals are not impacted since there are no regulatory limits established for these metals for the soil samples. The affected positive calcium results in the affected samples are usable as estimated values which may be biased high.

Field Duplicate Precision

The following table summarizes the analyte that recovered outside of the 50% RPD QC limit in the analysis of the field duplicate pair CRP-SB09-3840/CRP-SB09-DUP02:

Analyte	Sample Result (mg/kg)	Sample Result (mg/kg)	RPD	Action	
	CRP-SB09-3840	CRP-SB09-DUP02		(+)	NDs
Potassium	1350	432	105	J	

The positive potassium results are estimated (J) in all soil samples due to poor field duplicate precision.

Although the results of the field duplicate analysis exceeded the QC limits for potassium, the project precision goals are not impacted since there are no regulatory limits established for potassium for the soil samples. The positive potassium results in all soil samples are usable as estimated values for which the bias is indeterminate.

Reporting Limits

All non-detected metals results were reported down to the laboratory's quantitation limit.

Positive results below the quantitation limit (QL) and above the method detection limit (MDL) are estimated (J) due to uncertainty below the QL.

All project action limits were achieved by the laboratory's reporting limits (QL) except for antimony as highlighted in the Technical Specification. Data usability for this metal may be impacted.

Data Usability Assessment

The data usability assessment was performed to determine if the data met the project data quality objectives for acceptable accuracy, precision, sensitivity, and completeness; and to determine and define the impact of the exceeded quality control indicators on the technical usability of the data. Please refer to the specific sections in the above validation report for further details.

The project goals with respect to accuracy were met for the metals data set with the following exceptions. Chromium was qualified as estimated in all soil samples due to low continuing calibration verification recoveries; the affected results may be biased low. Lead was qualified as estimated in all soil samples due to high MS/MSD recoveries; the affected results may be biased high. Lead was also qualified as estimated in select soil samples due to ICP interferences; the affected results may be biased high. Antimony and copper were qualified as estimated in all soil samples due to low MS/MSD recoveries; the affected results may be biased low. Although specific QC criteria were not met in these instances, the affected positive and non-detected results are usable as estimated values and estimated quantitation limits which may have a minor impact on data usability. In addition, magnesium and iron were qualified as estimated in select samples due to poor continuing calibration verification recoveries. Barium and calcium were qualified as estimated in all soil samples due to high MS/MSD recoveries. Although specific QC criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision were met for the metals data set. Potassium was qualified as estimated in all soil samples due to poor field duplicate precision. Although specific QC criteria were not met in this instance, data usability is not impacted and the affected positive results are usable as estimated values.

The project goals with respect to sensitivity were met for the metals data set with the following exception. The project action limit for antimony was not achieved by the laboratory quantitation limits. Data usability may be impacted.

The project goals with respect to completeness were met for the metals data set. Data usability was not impacted with regards to completeness.

Tables:	Data Validation Qualifiers and Codes Data Summary Tables
Enclosures:	Data Validation Worksheets

Data Validation Qualifiers and Codes

Data Validation Qualifiers:

	=	No qualifier attached to value (positive hit)
J	=	Value is estimated
U	=	Value is not detected
UJ	=	Value is not detected and estimated
R	=	Value (positive hit) is not usable
UR	=	Value was reported as ND but is not usable

Qualifier Codes:

A	=	Lab Blank Contamination
B	=	Field Blank Contamination
C	=	Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01	=	GC/MS Tuning Noncompliance
D	=	MS/MSD Recovery Noncompliance
E	=	LCS/LCSD Recovery Noncompliance
F	=	Lab Duplicate Imprecision
G	=	Field Duplicate Imprecision
H	=	Holding Time Exceedance
I	=	ICP Serial Dilution Noncompliance
J	=	GFAA PDS - GFAA MSA's $r < 0.995$
K	=	ICP Interference - includes ICS % R Noncompliance
L	=	Instrument Calibration Range Exceedance
M	=	Sample Preservation Noncompliance
N	=	Internal Standard Noncompliance
N01	=	Internal Standard Recovery Noncompliance Dioxins
N02	=	Recovery Standard Noncompliance Dioxins
N03	=	Clean-up Standard Noncompliance Dioxins
O	=	Poor Instrument Performance (e.g. base-line drifting)
P	=	Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q	=	Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R	=	Surrogates Recovery Noncompliance
S	=	Pesticide/PCB Resolution
T	=	% Breakdown Noncompliance for DDT and Endrin
U	=	% Difference between columns/detectors >25% for positive results determined via GC/HPLC
V	=	Non-linear calibrations; correlation coefficient $r < 0.995$
W	=	EMPC result
X	=	Signal to noise response drop
Y	=	Percent solids <30%
Z	=	Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0608			CRP-SB01-2022			CRP-SB01-2628			CRP-SB09-0608		
SDG: CARPT002	LAB_ID	0905178-01			0905178-02			0905178-03			0905162-01		
FRACTION: M	SAMP_DATE	5/19/2009			5/19/2009			5/19/2009			5/18/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	81.2			97.4			92.6			86.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		9610			6040			4300			7370		
ANTIMONY		0.92	UJ	D	0.77	UJ	D	1.8	UJ	D	0.85	UJ	D
ARSENIC		8.7			6.7			18.7			7.5		
BARIUM		26	J	D	25	J	D	35	J	D	25.9	J	D
BERYLLIUM		0.39			0.24	J	P	0.28			0.36		
CADMIUM		0.19	J	P	0.1	J	P	0.28			0.13	J	P
CALCIUM		418	J	D	860	J	D	931	J	D	382	J	D
CHROMIUM		12	J	C	12.6	J	C	13.3	J	C	10.7	J	C
COBALT		10			11.1			24.4			11.2		
COPPER		20.4	J	D	17	J	D	15	J	D	15	J	D
IRON		26800			18600			43300	J	C	22800		
LEAD		18.3	J	D	8.4	J	DK	6.5	J	DK	9.1	J	DK
MAGNESIUM		2180			2910			3290			1850		
MANGANESE		442	J	C	215	J	C	728	J	C	394	J	C
MERCURY		0.028	J	P	0.034	U		0.032	U		0.035	U	
NICKEL		21.2			20.7			39.1			18.7		
POTASSIUM		266	J	GP	865	J	G	777	J	G	541	J	G
SELENIUM		0.43			0.35			0.32	J	P	0.37	U	
SILVER		0.18	U		0.15	U		0.16	U		0.17	U	
SODIUM		308	U		257	U		263	U		285	U	
THALLIUM		0.49	U		0.41	U		0.42	U		0.46	U	
VANADIUM		15.9			15.6			19			13.8		
ZINC		66.8			40.9			112			51		

PROJ_NO: 00870	NSAMPLE	CRP-SB09-1214			CRP-SB09-3840			CRP-SB09-DUP02		
SDG: CARPT002	LAB_ID	0905162-04			0905162-03			0905162-02		
FRACTION: M	SAMP_DATE	5/18/2009			5/18/2009			5/18/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			FD		
	UNITS	MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	91.2			86.1			84.9		
	DUP_OF							CRP-SB09-3840		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		5390			4810			3520		
ANTIMONY		1.6	UJ	D	1.8	UJ	D	1.8	UJ	D
ARSENIC		7.3			22.3			26.8		
BARIUM		25.8	J	D	24.5	J	D	16.6	J	D
BERYLLIUM		0.29			0.32			0.33		
CADMIUM		0.11	J	P	0.18	J	P	0.18	J	P
CALCIUM		553	J	D	1300	J	D	1390	J	D
CHROMIUM		11.6	J	C	18.3	J	C	20	J	C
COBALT		17			29.2			33.4		
COPPER		24.2	J	D	19.3	J	D	11.6	J	D
IRON		41700	J	C	47600	J	C	53900	J	C
LEAD		6.5	J	DK	5.7	J	DK	5.5	J	DK
MAGNESIUM		2540			2520			1730		
MANGANESE		966	J	C	1160	J	C	1520	J	C
MERCURY		0.033	U		0.037	U		0.035	U	
NICKEL		34.1			44.5			51		
POTASSIUM		464	J	G	1350	J	G	423	J	G
SELENIUM		0.28	J	P	0.22	J	P	0.18	J	P
SILVER		0.16	U		0.18	U		0.18	U	
SODIUM		274	U		83.9	J	P	99.3	J	P
THALLIUM		0.44	U		0.47	U		0.47	U	
VANADIUM		15.6			18.4			16.2		
ZINC		71.5			222			282		

PROJ_NO: 00870	NSAMPLE	CRP-SB-FB01-051909			CRP-SB-RB01-051809		
SDG: CARPT002	LAB_ID	0905178-04			0905162-06		
FRACTION: M	SAMP_DATE	5/19/2009			5/18/2009		
MEDIA: WATER	QC_TYPE	FB			RB		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS						
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		200	U		200	U	
ANTIMONY		15	U		15	U	
ARSENIC		5	U		5	U	
BARIUM		40	U		40	U	
BERYLLIUM		5	U		5	U	
CADMIUM		5	U		5	U	
CALCIUM		5000	U		5000	U	
CHROMIUM		5	U		5	U	
COBALT		12.5	U		12.5	U	
COPPER		10	U		10	U	
IRON		100	U		100	U	
LEAD		3	U		3	U	
MAGNESIUM		5000	UJ	C	5000	UJ	C
MANGANESE		15	U		15	U	
MERCURY		0.2	U		0.2	U	
NICKEL		10	U		10	U	
POTASSIUM		5000	U		5000	U	
SELENIUM		6.5	U		6.5	U	
SILVER		3	U		3	U	
SODIUM		5000	U		5000	U	
THALLIUM		8	U		8	U	
VANADIUM		12.5	U		12.5	U	
ZINC		20	U		20	U	

TETRA TECH

INTERNAL CORRESPONDENCE

C-NAVY-07-09-3227W

Date: July 13, 2009

c: File G00870-4.10 (w/enc.-original)
T. Campbell (scan, w/o enc.)

To: Steve Parker (scan, w/o enc.)

From: Jennifer Cardinal (no copy) JF (for)

Subject: Tier II Inorganic Data Validation, SDG CARPT003
Empirical Laboratories, LLC
CTO 406, MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island

Metals:

14/Soils/

CRP-SB02-0810	CRP-SB02-1618	CRP-SB02-2426
CRP-SB02-DUP03	CRP-SB03-0810	CRP-SB03-1618
CRP-SB03-2830	CRP-SB10-0810	CRP-SB10-1214
CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214
CRP-SB11-1618	CRP-SB-DUP04	

(Field duplicate pairs: CRP-SB02-0810/CRP-SB02-DUP03, CRP-SB03-2830/CRP-SB-DUP04)

1/Rinsate Blank/ CRP-SB-RB02-052109

Tetra Tech NUS, Inc. (TtNUS) performed a Tier II data validation on the metals analytical data for the soil samples collected by TtNUS at MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island from May 20-22, 2009. Sample collection and analysis was performed according to the approved Work Plan and Quality Assurance Project Plan for MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island, dated April 2009.

The metals analysis was performed according to USEPA SW-846 Methods 6010B and 7470A/7471A. The Tier II data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, Part IV, Inorganic Data Validation Functional Guidelines, November 2008.

The sample results, validation qualifiers (VQL), and qualifier codes (QLCD) are presented in the enclosed data summary tables. A list of the qualifier codes, which provide the reasons for the validation qualifiers, is enclosed.

The analytical data in this SDG were evaluated based on the following parameters:

- Data Completeness
- * Holding Times
- Calibration Verification
- * Laboratory Blank Analyses
- ICP Interference Check Sample Results
- Matrix Spike/Matrix Spike Duplicate
- * Laboratory Duplicate Results
- * Laboratory Control Sample Results

- Field Duplicate Precision
- * ICP Serial Dilution Results
- * Percent Solids
- Reporting Limits

* All quality control criteria were met for this parameter.

Data Completeness

The mercury blank results were missing for CCB2, CCB3, and CCB4 from the June 10, 2009 analysis. On July 10, 2009 the laboratory provided revised Form 3s to include the missing blank results.

Calibration Verification

The following table summarizes the analytes that recovered outside of the 90-110% QC limits in the continuing calibration verifications:

Analyte	%R	Action		Affected Samples
		(+)	NDs	
Magnesium	88.0, 85.7, 85.9	J		All samples
Chromium	88.7, 86.2, 86.3	J		
Iron	111.1	J		CRP-SB02-0810, CRP-SB02-1618, CRP-SB02-2426, CRP-SB02-DUP03, CRP-SB03-0810, CRP-SB03-2830, CRP-SB-DUP04
Aluminum	87.6, 86.3	J		CRP-SB11-0810, CRP-SB11-1214, CRP-SB11-1618
Silver	87.7, 88.6		UJ	

Although the recoveries of aluminum, iron, and magnesium were outside of the QC limits in the continuing calibration verifications, the project accuracy goals are not impacted since there are no regulatory limits established for these metals for the soil samples. The positive aluminum and magnesium results in the affected samples are usable as estimated values which may be biased low. The positive iron results in the affected samples are usable as estimated values which may be biased high.

Although the recoveries of chromium and silver were outside of the QC limits in the continuing calibration verifications, the project accuracy goals are not impacted since the affected sample results are much lower than the project action limits. The positive chromium results and the non-detected silver results in the affected samples are usable as estimated values and estimated quantitation limits which may be biased low.

ICP Interference Check Sample Results

The following results were qualified in the affected samples due to ICP interference attributed to the high concentration of iron and/or aluminum in the samples:

Analyte	Action		Bias	Affected Samples
	(+)	ND		
Lead	J		High	All soil samples except CRP-SB02-2426, CRP-SB02-DUP03, CRP-SB10-0810, CRP-SB10-1214
Selenium	UJ		High	All soil samples except CRP-SB03-0810, CRP-SB10-0810

The positive results for lead results in the affected samples are qualified as estimated (J) due to positive ICP interference attributed to iron. These results may be biased high.

Professional judgment was used to change the positive selenium results to estimated, non-detected values (UJ) in the affected samples, rather than reject them as provided in the data validation guidelines, because the reported concentrations may be due entirely (≥90%) to positive iron and/or aluminum ICP interference. The results may be false positive.

There were positive ICP interferences attributed to the high concentration of iron and/or aluminum that resulted in estimating the positive results for lead in the samples listed above; therefore, the project accuracy goals may be slightly impacted. The positive lead results in the affected samples are usable as estimated values which may be biased high.

Although there were positive ICP interferences attributed to the high concentration of iron and/or aluminum that resulted in raising the reporting limits for selenium in the samples listed above, the project sensitivity goals are not impacted with the following exceptions. The project sensitivity goals are impacted for samples CRP-SB03-2830 and CRP-SB-DUP04 since the selenium results in these samples exceed the project action limit. The selenium results in the affected samples are usable as estimated, non-detected values which may be false positive.

Matrix Spike/Matrix Spike Duplicate

The following table summarizes the target metal matrix spiking recoveries that did not meet the laboratory QC limits in the matrix spike and matrix spike duplicate (MS/MSD) analysis and the qualifications applied to all soil samples in the SDG:

CRP-SB03-0810				
Analyte	MS/MSD %Rec.	%Rec. QC Limits	Action	
			(+)	ND
Barium	135.1 / 130.2	75-125	J	
Calcium	Met / 136.6		J	

Although the MS/MSD recovery criteria were not met for barium, the project accuracy goals are not impacted since the affected sample results are below the project action limits. The affected positive barium results are usable as estimated values which may be biased high.

Although the MS/MSD recovery criteria were not met for calcium, the project accuracy goals are not impacted since there are no regulatory limits established for these metals for the soil samples. The affected positive calcium results in the affected samples are usable as estimated values which may be biased high.

Field Duplicate Precision

The following table summarizes the analytes that recovered outside of the 50% RPD QC limit in the analysis of the field duplicate pair CRP-SB02-0810/CRP-SB02-DUP03:

Analyte	Sample Result (mg/kg)	Sample Result (mg/kg)	RPD	Action	
	CRP-SB02-0810	CRP-SB02-DUP03		(+)	NDs
Calcium	397	1650	122	J	
Lead	8.1	18.5	78	J	

The positive calcium and lead results are estimated (J) in all soil samples due to poor field duplicate precision.

Although the results of the field duplicate analysis exceeded the QC limits for calcium, the project precision goals are not impacted since there are no regulatory limits established for calcium for the soil samples. The positive calcium results in all soil samples are usable as estimated values for which the bias is indeterminate.

The results of the field duplicate analysis exceeded the QC limits for lead; therefore, the project precision goals may be impacted. The positive lead results in all soil samples are usable as estimated values for which the bias is indeterminate.

The following table summarizes the analytes that recovered outside of the 50% RPD QC limit in the analysis of the field duplicate pair CRP-SB03-2830/CRP-SB-DUP04:

Analyte	Sample Result (mg/kg)	Sample Result (mg/kg)	RPD	Action	
	CRP-SB03-2830	CRP-SB-DUP04		(+)	NDs
Copper	45.2	9.1	133	J	
Nickel	65.5	34.6	62	J	

The positive copper and nickel results are estimated (J) in all soil samples due to poor field duplicate precision.

The results of the field duplicate analysis exceeded the QC limits for copper and nickel; therefore, the project precision goals may be impacted. The positive copper and nickel results in all soil samples are usable as estimated values for which the bias is indeterminate.

Reporting Limits

All non-detected metals results were reported down to the laboratory's quantitation limit.

Positive results below the quantitation limit (QL) and above the method detection limit (MDL) are estimated (J) due to uncertainty below the QL.

All project action limits were achieved by the laboratory's reporting limits (QL) except for antimony as highlighted in the Technical Specification. Data usability for this metal may be impacted.

Reporting limits were raised for selenium in select samples due to ICP interferences. As discussed above in the ICP Interference Check Sample Results section, the project sensitivity goals are not

impacted except for samples CRP-SB03-2830 and CRP-SB-DUP04 since the selenium results in these samples exceed the project action limit. Data usability may be impacted for selenium in these samples.

Data Usability Assessment

The data usability assessment was performed to determine if the data met the project data quality objectives for acceptable accuracy, precision, sensitivity, and completeness; and to determine and define the impact of the exceeded quality control indicators on the technical usability of the data. Please refer to the specific sections in the above validation report for further details.

The project goals with respect to accuracy were met for the metals data set with the following exception. Lead was qualified as estimated in select soil samples due to ICP interferences; the affected results may be biased high. Although specific QC criteria were not met in this instance, the affected positive results are usable as estimated values which may have a minor impact on data usability. In addition, aluminum, chromium, iron, magnesium, and silver were qualified as estimated in select samples due to poor continuing calibration verification recoveries. Barium and calcium were qualified as estimated in all soil samples due to high MS/MSD recoveries. Although specific QC criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision were met for the metals data set with the following exception. Copper, lead, and nickel were qualified as estimated in all soil samples due to poor field duplicate precision. Although specific QC criteria were not met in this instance, the affected positive and non-detected results are usable as estimated values and estimated quantitation limits which may have a minor impact on data usability. Calcium was qualified as estimated in all soil samples due to poor field duplicate precision. Although specific QC criteria were not met in this instance, data usability is not impacted and the affected positive results are usable as estimated values.

The project goals with respect to sensitivity were met for the metals data set with the following exception. The project action limit for antimony was not achieved by the laboratory quantitation limits. Data usability may be impacted. In addition, reporting limits were raised for selenium in samples CRP-SB03-2830 and CRP-SB-DUP04 due to ICP interferences. The elevated selenium reporting limits in these samples exceed the project action limit. Data usability may be impacted for selenium in these samples.

The project goals with respect to completeness were met for the metals data set. Data usability was not impacted with regards to completeness.

Tables: Data Validation Qualifiers and Codes
Data Summary Tables

Enclosures: Data Validation Worksheets

Data Validation Qualifiers and Codes

Data Validation Qualifiers:

= No qualifier attached to value (positive hit)
J = Value is estimated
U = Value is not detected
UJ = Value is not detected and estimated
R = Value (positive hit) is not usable
UR = Value was reported as ND but is not usable

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00870	NSAMPLE	CRP-SB02-0810			CRP-SB02-1618			CRP-SB02-2426			CRP-SB02-DUP03		
SDG: CARPT003	LAB_ID	0905193-01			0905193-02			0905193-03			0905193-04		
FRACTION: M	SAMP_DATE	5/20/2009			5/20/2009			5/20/2009			5/20/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			FD		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	92.5			91.1			89.9			90.2		
	DUP_OF										CRP-SB02-0810		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		7800			4380			3510			9180		
ANTIMONY		1.6	U		1.6	U		1.6	U		1.6	U	
ARSENIC		10.2			7.3			15.3			13.5		
BARIUM		20.3	J	D	24.6	J	D	18.8	J	D	19.6	J	D
BERYLLIUM		0.284			0.382			0.239	J	P	0.312		
CADMIUM		0.27	U		0.27	U		0.155	J	P	0.073	J	P
CALCIUM		397	J	DG	891	J	DG	1450	J	DG	1650	J	DG
CHROMIUM		12.2	J	C	9.7	J	C	7.7	J	C	14.9	J	C
COBALT		17.9			13.9			15.3			18.1		
COPPER		24.6	J	G	24	J	G	25.9	J	G	24	J	G
IRON		35300	J	C	38300	J	C	34200	J	C	33400	J	C
LEAD		8.1	J	GK	7.5	J	GK	14.6	J	G	18.5	J	G
MAGNESIUM		2530	J	C	2400	J	C	3500	J	C	3220	J	C
MANGANESE		802			346			543			644		
MERCURY		0.037	U		0.038	U		0.036	U		0.037	U	
NICKEL		30.9	J	G	25.4	J	G	32.6	J	G	31.2	J	G
POTASSIUM		285			665			515			359		
SELENIUM		0.16	UJ	KP	0.23	UJ	KP	0.4	UJ	K	0.32	UJ	KP
SILVER		0.16	U		0.16	U		0.16	U		0.16	U	
SODIUM		270	U		268	U		273	U		270	U	
THALLIUM		0.43	U		0.43	U		0.44	U		0.43	U	
VANADIUM		15			16.2			11.2			15.7		
ZINC		50.7			52.7			62.8			60.7		

PROJ_NO: 00870	NSAMPLE	CRP-SB03-0810			CRP-SB03-1618			CRP-SB03-2830			CRP-SB10-0810		
SDG: CARPT003	LAB_ID	0905206-04			0905206-05			0905206-06			0905206-02		
FRACTION: M	SAMP_DATE	5/21/2009			5/21/2009			5/21/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	95.0			99.6			90.8			89.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		6880			5290			2740			9150		
ANTIMONY		1.5	U		0.75	U		1.7	U		1.6	U	
ARSENIC		9.3			13.8			28.8			11.7		
BARIUM		28	J	D	22.9	J	D	17.3	J	D	15.4	J	D
BERYLLIUM		0.321			0.299			0.261	J	P	0.317		
CADMIUM		0.075	J	P	0.067	J	P	0.28	U		0.27	U	
CALCIUM		380	J	DG	781	J	DG	1070	J	DG	619	J	DG
CHROMIUM		9.9	J	C	11	J	C	10.1	J	C	15.2	J	C
COBALT		14.3			14.6			21.9			16.1		
COPPER		20.4	J	G	18.5	J	G	45.2	J	G	30.5	J	G
IRON		31000	J	C	25000			40700	J	C	40300		
LEAD		8.9	J	GK	8.3	J	GK	10	J	GK	17.9	J	G
MAGNESIUM		2000	J	C	1970	J	C	4000	J	C	3470	J	C
MANGANESE		1440			350			469			464		
MERCURY		0.035	U		0.035	U		0.034	U		0.038	U	
NICKEL		26.6	J	G	24	J	G	65.5	J	G	30.9	J	G
POTASSIUM		435			547			461			377		
SELENIUM		0.33	U		0.19	UJ	KP	0.85	UJ	K	0.36	U	
SILVER		0.15	U		0.15	U		0.17	U		0.16	U	
SODIUM		254	U		251	U		275	U		274	U	
THALLIUM		0.41	U		0.4	U		0.44	U		0.44	U	
VANADIUM		15			15.7			12.7			14.2		
ZINC		59.9			52.2			57.2			64.7		

PROJ_NO: 00870	NSAMPLE	CRP-SB10-1214			CRP-SB10-1618			CRP-SB11-0810			CRP-SB11-1214		
SDG: CARPT003	LAB_ID	0905206-01			0905206-03			0905217-01			0905217-02		
FRACTION: M	SAMP_DATE	5/21/2009			5/21/2009			5/22/2009			5/22/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	89.5			89.1			89.7			86.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		7640			2900			9580	J	C	4860	J	C
ANTIMONY		0.82	U		0.83	U		1.6	U		0.86	U	
ARSENIC		4.7			7.8			11.3			6.4		
BARIUM		26.4	J	D	14.6	J	D	19.1	J	D	18.2	J	D
BERYLLIUM		0.288			0.189	J	P	0.334			0.3		
CADMIUM		0.27	U		0.088	J	P	0.27	U		0.29	U	
CALCIUM		1250	J	DG	1090	J	DG	360	J	DG	797	J	DG
CHROMIUM		9.4	J	C	6.4	J	C	16.4	J	C	8.3	J	C
COBALT		12.1			11.4			15.2			10.3		
COPPER		13.9	J	G	10.3	J	G	23.7	J	G	26.5	J	G
IRON		20500			18100			37900			22500		
LEAD		7.2	J	G	5.2	J	GK	9.4	J	GK	6.5	J	GK
MAGNESIUM		3830	J	C	2580	J	C	3430	J	C	1640	J	C
MANGANESE		392			239			522			502		
MERCURY		0.033	U		0.037	U		0.036	U		0.04	U	
NICKEL		23.5	J	G	21.8	J	G	31.4	J	G	23.2	J	G
POTASSIUM		1300			407			360			380		
SELENIUM		0.23	UJ	KP	0.2	UJ	KP	0.25	UJ	KP	0.21	UJ	KP
SILVER		0.16	U		0.17	U		0.16	UJ	C	0.17	UJ	C
SODIUM		273	U		276	U		273	U		288	U	
THALLIUM		0.44	U		0.44	U		0.44	U		0.46	U	
VANADIUM		17.2			9.6			19.8			10.9		
ZINC		55.6			41.6			77.3			61		

PROJ_NO: 00870	NSAMPLE	CRP-SB11-1618			CRP-SB-DUP04		
SDG: CARPT003	LAB_ID	0905217-03			0905206-07		
FRACTION: M	SAMP_DATE	5/22/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			FD		
	UNITS	MG/KG			MG/KG		
	PCT_SOLIDS	89.9			91.1		
	DUP_OF				CRP-SB03-2830		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		1860	J	C	2600		
ANTIMONY		1.6	U		1.6	U	
ARSENIC		13.9			20		
BARIUM		17.4	J	D	17.1	J	D
BERYLLIUM		0.2	J	P	0.269	J	P
CADMIUM		0.069	J	P	0.27	U	
CALCIUM		1650	J	DG	1220	J	DG
CHROMIUM		13.8	J	C	11.6	J	C
COBALT		24.5			17.1		
COPPER		18.3	J	G	9.1	J	G
IRON		47400			47500	J	C
LEAD		9.7	J	GK	9.6	J	GK
MAGNESIUM		5440	J	C	5280	J	C
MANGANESE		629			533		
MERCURY		0.033	U		0.032	U	
NICKEL		53.1	J	G	34.6	J	G
POTASSIUM		265	J	P	393		
SELENIUM		0.28	UJ	KP	0.54	UJ	K
SILVER		0.16	UJ	C	0.17	U	
SODIUM		57.4	J	P	274	U	
THALLIUM		0.44	U		0.44	U	
VANADIUM		19.6			14.2		
ZINC		85.5			63		

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB02-052109		
SDG: CARPT003	LAB_ID	0905206-09		
FRACTION: M	SAMP_DATE	5/21/2009		
MEDIA: WATER	QC_TYPE	RB		
	UNITS	UG/L		
	PCT_SOLIDS			
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
ALUMINUM		200	U	
ANTIMONY		15	U	
ARSENIC		5	U	
BARIUM		40	U	
BERYLLIUM		5	U	
CADMIUM		5	U	
CALCIUM		5000	U	
CHROMIUM		5	U	
COBALT		12.5	U	
COPPER		10	U	
IRON		100	U	
LEAD		3	U	
MAGNESIUM		5000	U	
MANGANESE		15	U	
MERCURY		0.2	U	
NICKEL		10	U	
POTASSIUM		5000	U	
SELENIUM		6.5	U	
SILVER		3	U	
SODIUM		5000	U	
THALLIUM		8	U	
VANADIUM		12.5	U	
ZINC		20	U	

TETRA TECH

INTERNAL CORRESPONDENCE

C-NAVY-08-09-3259W

Date: August 4, 2009

c: File G00870-4.10 (w/enc.-original)
T. Campbell (scan, w/o enc.)

To: Steve Parker (scan, w/o enc.)

From: Jennifer Cardinal (no copy) (for)

Subject: Tier II Inorganic Data Validation, SDG CARPT006
Empirical Laboratories, LLC
CTO 406, MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island

Metals:

16/Sediments/	CRP-SD05-0006	CRP-SD06-0006
	CRP-SD06-0612	CRP-SD07-0006
	CRP-SD07-0612	CRP-SD11-0006
	CRP-SD11-0612	CRP-SD15-0006
	CRP-SD15-0612	CRP-SD17-0006
	CRP-SD18-0006	CRP-SD18-0612
	CRP-SD19-0006	CRP-SD19-0612
	CRP-SD-DUP01	CRP-SD-DUP02

(Field duplicate pairs: CRP-SD06-0006/CRP-SD-DUP01, CRP-SD15-0006/CRP-SD-DUP02)

1/Rinsate Blank/ CRP-SD-RB01-061609

Tetra Tech NUS, Inc. (TtNUS) performed a Tier II data validation on the metals analytical data for the sediment samples collected by TtNUS at MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island from June 15-16, 2009. Sample collection and analysis was performed according to the approved Work Plan and Quality Assurance Project Plan for MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island, dated April 2009.

The metals analysis was performed according to USEPA SW-846 Method 6010B. The Tier II data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, Part IV, Inorganic Data Validation Functional Guidelines, November 2008.

The sample results, validation qualifiers (VQL), and qualifier codes (QLCD) are presented in the enclosed data summary tables. A list of the qualifier codes, which provide the reasons for the validation qualifiers, is enclosed.

The analytical data in this SDG were evaluated based on the following parameters:

- Data Completeness
- * Holding Times
- Calibration Verification
- Laboratory Blank Analyses
- ICP Interference Check Sample Results

- Matrix Spike/Matrix Spike Duplicate
- Laboratory Duplicate Results
- * Laboratory Control Sample Results
- * Field Duplicate Precision
- * ICP Serial Dilution Results
- * Percent Solids
- * Reporting Limits

* All quality control criteria were met for this parameter.

Data Completeness

On July 27, 2009 the laboratory confirmed that the metals results were reported to the project quantitation limits as required by the Technical Specification. The laboratory also provided the calculation formulas for converting the Form 10 reporting limits to sample-specific reporting limits.

Calibration Verification

The following table summarizes the analytes that recovered outside of the 90-110% QC limits in the continuing calibration verifications:

Analyte	%R	Action		Affected Samples
		(+)	NDs	
Iron	111.0, 116.1, 111.9	J		All sediment samples and CRP-SD-RB01-061609
Chromium	113.2	J		CRP-SD-RB01-061609
Manganese	115.6, 123.7, 112.0	J		All sediment samples
Lead	88.2, 85.2, 85.5	J		
Calcium	113.7, 112.5	J		
Potassium	113.0	J		
Silver	111.7	J		CRP-SD11-0006, CRP-SD17-0006
Vanadium	114.3	J		All sediment samples
Aluminum	86.1	J		CRP-SD17-0006
Zinc	83.2	J		

Although the recoveries of iron, chromium, calcium, potassium, and aluminum were outside of the QC limits in the continuing calibration verifications, the project accuracy goals are not impacted since there are no regulatory limits established for iron, calcium, potassium, and aluminum for the sediment samples; and there are no regulatory limits established for chromium for the rinsate blank sample. The positive iron, chromium, calcium, and potassium results in the affected samples are usable as estimated values which may be biased high. The positive aluminum result in the affected sample is usable as an estimated value which may be biased low.

The recoveries of lead and zinc were outside of the QC limits in the continuing calibration verifications; therefore, the project accuracy goals may be slightly impacted. The positive lead and zinc results in the affected samples are usable as estimated values which may be biased low.

Although the recoveries of manganese, silver, and vanadium were outside of the QC limits in the continuing calibration verifications, the project accuracy goals are not impacted since the affected results, biased high, are lower than the project action limits. The positive manganese, silver, and vanadium results in the affected samples are usable as estimated values which may be biased high.

Laboratory Blank Analyses

The following table summarizes the level of blank contamination detected in the laboratory blanks associated with the rinsate blank sample in this SDG:

Analyte	Maximum Conc. (µg/L)	Action Level (µg/L)	Affected Sample
Iron	60.1	301	CRP-SD-RB01-061609

The positive iron result below the blank action level is changed to a non-detected value (U) at the quantitation limit due to laboratory blank contamination.

Although iron contamination was found in the laboratory blank, the project sensitivity goals are not impacted since there are no regulatory limits established for iron in the rinsate blank sample. The non-detected result in the affected sample is usable as a non-detected value at the quantitation limit.

ICP Interference Check Sample Results

The following results were qualified in the affected samples due to ICP interference attributed to the high concentration of iron and/or calcium in the samples:

Analyte	Action		Bias	Affected Samples
	(+)	ND		
Selenium	UJ		High	CRP-SD05-0006, CRP-SD07-0612, CRP-SD11-0006, CRP-SD11-0612, CRP-SD15-0612, CRP-SD17-0006, CRP-SD18-0006, CRP-SD19-0612, CRP-SD-DUP01, CRP-SD-DUP02

Professional judgment was used to change the positive selenium results to estimated, non-detected values (UJ) in the affected samples, rather than reject them as provided in the data validation guidelines, because the reported concentrations may be due entirely (≥90%) to positive iron and/or calcium ICP interference. The positive results may be false positive.

Although there were positive ICP interferences attributed to the high concentration of iron and/or calcium that resulted in raising the reporting limits for selenium in the samples listed above, the project sensitivity goals are not impacted since the affected results do not exceed the project action limit. The selenium results in the affected samples are usable as estimated non-detected values.

Matrix Spike/Matrix Spike Duplicate

The following tables summarize the target metal matrix spiking recoveries that did not meet the laboratory QC limits in the matrix spike and matrix spike duplicate (MS/MSD) analyses and the qualifications applied to all sediment samples in the SDG:

CRP-SD07-0006				
Analyte	MS/MSD %Rec.	%Rec. QC Limits	Action	
			(+)	ND
Manganese	135.9 / 165.5	75-125	J	

Although the MS/MSD recovery criteria were not met for manganese; the project accuracy goals are not impacted since the affected sample results are below the project action limits. The affected positive manganese results are usable as estimated values which may be biased high.

The following tables summarize the target metal matrix spiking recoveries that did not meet the laboratory QC limits in the matrix spike and matrix spike duplicate (MS/MSD) analyses and the qualifications applied to sample CRP-SD07-0006:

CRP-SD07-0006				
Analyte	MS/MSD %Rec.	%Rec. QC Limits	Action	
			(+)	ND
Antimony	63.9 / 1222.6	75-125	J	
Arsenic	Met / 510.1		J	

Sample CRO-SD07-0006 was very heterogeneous and professional judgment was used to apply the antimony and arsenic qualifications to only this sample. Although the MS/MSD recovery criteria were not met for antimony, and arsenic; the project accuracy goals are not impacted since the affected sample results are well below the project action limits. The affected positive antimony and arsenic results are usable as estimated values for which the bias is indeterminate.

Laboratory Duplicate Results

The following table summarizes the analytes that recovered outside of the 35% RPD QC limit in the analysis of the laboratory duplicate of CRP-SD07-0006:

Analyte	RPD	Action	
		(+)	NDs
Antimony	179.5	J	
Arsenic	123.5	J	
Lead	197.3	J	

The positive antimony, arsenic, and lead results in sample CRP-SD07-0006 are estimated (J) due to poor laboratory duplicate precision. Sample CRO-SD07-0006 was very heterogeneous and professional judgment was used to apply the antimony, arsenic, and lead qualifications to only this sample.

The results of the laboratory duplicate analysis exceeded the QC limits for lead; therefore, the project precision goals may be impacted. The positive lead result in the affected sample is usable as an estimated value for which the bias is indeterminate.

Although the results of the field duplicate analysis exceeded the QC limits for antimony and arsenic, the project precision goals are not impacted since the affected results well below the project action limits. The positive antimony and arsenic results in the affected sample are usable as estimated values for which the bias is indeterminate.

Reporting Limits

All non-detected metals results were reported down to the laboratory's quantitation limit.

Positive results below the quantitation limit (QL) and above the method detection limit (MDL) are estimated (J) due to uncertainty below the QL.

Iron contamination was found in the laboratory method blank resulting in blank actions for the rinsate blank sample. As discussed in the Blanks section, the project sensitivity goals are not impacted.

Reporting limits were raised for selenium in select samples due to ICP interferences. As discussed above in the ICP Interference Check Sample Results section, the project sensitivity goals are not impacted.

Data Usability Assessment

The data usability assessment was performed to determine if the data met the project data quality objectives for acceptable accuracy, precision, sensitivity, and completeness; and to determine and define the impact of the exceeded quality control indicators on the technical usability of the data. Please refer to the specific sections in the above validation report for further details.

The project goals with respect to accuracy were met for the metals data set with the following exception. Lead and zinc were qualified as estimated in select soil samples due to low continuing calibration verification recoveries; the affected results may be biased low. Although specific QC criteria were not met in this instance, the affected positive results are usable as estimated values which may have a minor impact on data usability. In addition, iron, chromium, calcium, potassium, aluminum, manganese, silver, vanadium, and zinc were qualified as estimated in select samples due to poor continuing calibration verification recoveries. Manganese, antimony, and arsenic were qualified as estimated in all sediment samples due to poor MS/MSD recoveries. Although specific QC criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision were met for the metals data set with the following exception. Lead was qualified as estimated in sample CRP-SD07-0006 due to poor laboratory duplicate precision. Although specific QC criteria were not met in this instance, the affected positive result is usable as an estimated value which may have a minor impact on data usability. Antimony and arsenic were qualified as estimated in sample CRP-SD07-0006 due to poor laboratory duplicate precision. Although specific QC criteria were not met in this instance, data usability is not impacted and the affected positive results are usable as estimated values.

The project goals with respect to sensitivity and completeness were met for the metals data set. Data usability was not impacted with regards to sensitivity and completeness.

Tables:	Data Validation Qualifiers and Codes Data Summary Tables
Enclosures:	Data Validation Worksheets

Data Validation Qualifiers and Codes

Data Validation Qualifiers:

	=	No qualifier attached to value (positive hit)
J	=	Value is estimated
U	=	Value is not detected
UJ	=	Value is not detected and estimated
R	=	Value (positive hit) is not usable
UR	=	Value was reported as ND but is not usable

Qualifier Codes:

A	=	Lab Blank Contamination
B	=	Field Blank Contamination
C	=	Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01	=	GC/MS Tuning Noncompliance
D	=	MS/MSD Recovery Noncompliance
E	=	LCS/LCSD Recovery Noncompliance
F	=	Lab Duplicate Imprecision
G	=	Field Duplicate Imprecision
H	=	Holding Time Exceedance
I	=	ICP Serial Dilution Noncompliance
J	=	GFAA PDS - GFAA MSA's $r < 0.995$
K	=	ICP Interference - includes ICS % R Noncompliance
L	=	Instrument Calibration Range Exceedance
M	=	Sample Preservation Noncompliance
N	=	Internal Standard Noncompliance
N01	=	Internal Standard Recovery Noncompliance Dioxins
N02	=	Recovery Standard Noncompliance Dioxins
N03	=	Clean-up Standard Noncompliance Dioxins
O	=	Poor Instrument Performance (e.g. base-line drifting)
P	=	Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q	=	Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R	=	Surrogates Recovery Noncompliance
S	=	Pesticide/PCB Resolution
T	=	% Breakdown Noncompliance for DDT and Endrin
U	=	% Difference between columns/detectors >25% for positive results determined via GC/HPLC
V	=	Non-linear calibrations; correlation coefficient $r < 0.995$
W	=	EMPC result
X	=	Signal to noise response drop
Y	=	Percent solids <30%
Z	=	Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00870	NSAMPLE	CRP-SD05-0006			CRP-SD06-0006			CRP-SD06-0612			CRP-SD07-0006		
SDG: CARPT006	LAB_ID	0906141-05			0906141-01			0906141-02			0906141-03		
FRACTION: M	SAMP_DATE	6/15/2009			6/15/2009			6/15/2009			6/15/2009		
MEDIA: SEDIMENT	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	81.0			81.7			83.2			82.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		3560			4020			4080			3850		
ANTIMONY		0.92	U		0.92	U		0.9	U		0.42	J	DFP
ARSENIC		3			2.6			2.4			3.5	J	DF
BARIUM		10.1			8.5			7.8			8.7		
BERYLLIUM		0.21	J	P	0.2	J	P	0.19	J	P	0.25	J	P
CADMIUM		0.15	J	P	0.19	J	P	0.15	J	P	0.15	J	P
CALCIUM		3460	J	C	3530	J	C	1320	J	C	3820	J	C
CHROMIUM		10.3			10.3			9.1			10		
COBALT		3.8			3.2			3.4			3.3		
COPPER		10.7			7.6			6.5			7		
IRON		13500	J	C	10500	J	C	10100	J	C	11900	J	C
LEAD		58.3	J	C	46.1	J	C	50.1	J	C	136	J	CF
MAGNESIUM		1880			1950			1930			1760		
MANGANESE		148	J	CD	116	J	CD	117	J	CD	117	J	CD
NICKEL		10.7			8.4			8.7			9.1		
POTASSIUM		594	J	C	660	J	C	546	J	C	527	J	C
SELENIUM		0.26	UJ	KP	0.4	U		0.39	U		0.39	U	
SILVER		0.18	U		0.18	U		0.18	U		0.18	U	
SODIUM		2820			2570			1770			2150		
THALLIUM		0.49	U		0.49	U		0.48	U		0.48	U	
VANADIUM		15.3	J	C	12.9	J	C	13.1	J	C	16.8	J	C
ZINC		48.7			40.5			34.9			40.4		

PROJ_NO: 00870	NSAMPLE	CRP-SD07-0612			CRP-SD11-0006			CRP-SD11-0612			CRP-SD15-0006		
SDG: CARPT006	LAB_ID	0906141-04			0906153-02			0906153-03			0906153-05		
FRACTION: M	SAMP_DATE	6/15/2009			6/16/2009			6/16/2009			6/16/2009		
MEDIA: SEDIMENT	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	83.0			76.1			82.9			79.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		4090			4020			3860			3170		
ANTIMONY		0.9	U		0.29	J	P	0.51	J	P	0.63	U	
ARSENIC		3.2			3			2.1			1.9		
BARIUM		8.3			8.2			6.4			6.1		
BERYLLIUM		0.22	J	P	0.21	J	P	0.18	J	P	0.15	J	P
CADMIUM		0.1	J	P	0.16	J	P	0.095	J	P	0.11	J	P
CALCIUM		943	J	C	6610	J	C	1030	J	C	1660	J	C
CHROMIUM		10.3			11.6			9.3			8.5		
COBALT		3.6			2.7			2.6			2.2		
COPPER		8			9.3			6.2			4.8		
IRON		11900	J	C	9940	J	C	10100	J	C	7840	J	C
LEAD		29.5	J	C	152	J	C	169	J	C	48.5	J	C
MAGNESIUM		1980			2070			1840			1650		
MANGANESE		123	J	CD	107	J	CD	112	J	CD	89.5	J	CD
NICKEL		9.5			8.6			8.2			7.8		
POTASSIUM		622	J	C	768	J	C	476	J	C	512	J	C
SELENIUM		0.28	UJ	KP	0.22	UJ	KP	0.21	UJ	KP	0.27	U	
SILVER		0.18	U		0.11	J	CP	0.18	U		0.13	U	
SODIUM		2440			3910			2030			2790		
THALLIUM		0.48	U		0.35	U		0.48	U		0.34	U	
VANADIUM		16.1	J	C	13.3	J	C	12	J	C	9.5	J	C
ZINC		39.7			44.4			34.5			30.8		

PROJ_NO: 00870	NSAMPLE	CRP-SD15-0612			CRP-SD17-0006			CRP-SD18-0006			CRP-SD18-0612		
SDG: CARPT006	LAB_ID	0906153-04			0906153-09			0906153-06			0906153-07		
FRACTION: M	SAMP_DATE	6/16/2009			6/16/2009			6/16/2009			6/16/2009		
MEDIA: SEDIMENT	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	72.9			72.9			78.5			78.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		3600			4050	J	C	2910			2800		
ANTIMONY		0.35	J	P	0.68	U		0.64	U		0.64	U	
ARSENIC		3			3.9			1.7			1.7		
BARIUM		7.2			11.1			5.4			5.5		
BERYLLIUM		0.18	J	P	0.23	J	P	0.14	J	P	0.14	J	P
CADMIUM		0.15	J	P	0.2	J	P	0.068	J	P	0.08	J	P
CALCIUM		1480	J	C	36100	J	C	626	J	C	604	J	C
CHROMIUM		9			11.9			7.9			8.2		
COBALT		2.2			3.1			1.9			1.9		
COPPER		5.7			10.5			3.9			4.6		
IRON		10100	J	C	10800	J	C	7760	J	C	7660	J	C
LEAD		83.6	J	C	27.9	J	C	7.2	J	C	7.8	J	C
MAGNESIUM		2010			2540			1570			1530		
MANGANESE		92.5	J	CD	134	J	CD	92.5	J	CD	86.9	J	CD
NICKEL		9.4			8.5			5.8			5.9		
POTASSIUM		646	J	C	922	J	C	460	J	C	451	J	C
SELENIUM		0.33	UJ	K	0.34	UJ	K	0.16	UJ	KP	0.28	U	
SILVER		0.14	U		0.086	J	CP	0.13	U		0.13	U	
SODIUM		4530			4910			2800			2850		
THALLIUM		0.36	U		0.36	U		0.34	U		0.34	U	
VANADIUM		11.7	J	C	13.7	J	C	9.7	J	C	9.9	J	C
ZINC		32.5			41.8	J	C	26.5			29.6		

PROJ_NO: 00870	NSAMPLE	CRP-SD19-0006			CRP-SD19-0612			CRP-SD-DUP01			CRP-SD-DUP02		
SDG: CARPT006	LAB_ID	0906153-08			0906153-01			0906141-06			0906153-10		
FRACTION: M	SAMP_DATE	6/16/2009			6/16/2009			6/15/2009			6/16/2009		
MEDIA: SEDIMENT	QC_TYPE	NM			NM			FD			FD		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	78.2			79.6			82.5			80.6		
	DUP_OF							CRP-SD06-0006			CRP-SD15-0006		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		3150			3060			4240			3110		
ANTIMONY		0.64	U		0.62	U		0.9	U		0.93	U	
ARSENIC		2			1.8			2.6			1.9		
BARIUM		5.8			5.6			8.8			6.5		
BERYLLIUM		0.15	J	P	0.14	J	P	0.21	J	P	0.14	J	P
CADMIUM		0.095	J	P	0.094	J	P	0.18	J	P	0.13	J	P
CALCIUM		894	J	C	1200	J	C	3160	J	C	1730	J	C
CHROMIUM		8.7			8.5			10.4			8.5		
COBALT		2.1			2			3.2			2.2		
COPPER		4.5			4.9			7.8			4.8		
IRON		8260	J	C	7640	J	C	10900	J	C	7680	J	C
LEAD		8.6	J	C	8.1	J	C	44.3	J	C	49.1	J	C
MAGNESIUM		1670			1620			2040			1550		
MANGANESE		93.6	J	CD	90	J	CD	121	J	CD	86	J	CD
NICKEL		6.3			6.2			8.8			7.2		
POTASSIUM		514	J	C	465	J	C	661	J	C	506	J	C
SELENIUM		0.28	U		0.21	UJ	KP	0.2	UJ	KP	0.28	UJ	KP
SILVER		0.13	U		0.12	U		0.18	U		0.19	U	
SODIUM		2940			2720			2530			2520		
THALLIUM		0.34	U		0.33	U		0.48	U		0.49	U	
VANADIUM		10.2	J	C	10	J	C	13.4	J	C	9.1	J	C
ZINC		29.5			31.1			41.4			29.6		

PROJ_NO: 00870	NSAMPLE	CRP-SD-RB01-061609		
SDG: CARPT006	LAB_ID	0906153-11		
FRACTION: M	SAMP_DATE	6/16/2009		
MEDIA: WATER	QC_TYPE	RB		
	UNITS	UG/L		
	PCT_SOLIDS			
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
ALUMINUM		50	U	
ANTIMONY		3.8	U	
ARSENIC		1.2	U	
BARIUM		10	U	
BERYLLIUM		1.2	U	
CADMIUM		1.2	U	
CALCIUM		1250	U	
CHROMIUM		0.67	J	CP
COBALT		3.1	U	
COPPER		2.5	U	
IRON		25	UJ	AC
LEAD		0.75	U	
MAGNESIUM		1250	U	
MANGANESE		1.8	J	P
NICKEL		2.5	U	
POTASSIUM		1250	U	
SELENIUM		1.6	U	
SILVER		0.75	U	
SODIUM		1250	U	
THALLIUM		2	U	
VANADIUM		3.1	U	
ZINC		5	U	

TETRA TECH

INTERNAL CORRESPONDENCE

C-NAVY-07-09-3225W

Date: July 9, 2009

c: File G00870-4.10 (w/enc.-original)
T. Campbell (scan, w/o enc.)

To: Steve Parker (scan, w/o enc.)

From: Jennifer Cardinal (no copy) JC (for)

Subject: Tier II Inorganic Data Validation, SDG CARPT001
Empirical Laboratories, LLC
CTO 406, MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island

Metals:

21/Soils/	CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001
	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001
	CRP-SB08-0001	CRP-SB09-0001	CRP-SB10-0001
	CRP-SB11-0001	CRP-SB-DUP01	CRP-SS01-0006
	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612
	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708
	CRP-TP04-0506	CRP-TP05-0102	CRP-TP06-0405

(Field duplicate pair: CRP-SB07-0001/CRP-SB-DUP01)

Tetra Tech NUS, Inc. (TtNUS) performed a Tier II data validation on the metals analytical data for the soil samples collected by TtNUS at MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island from May 11-13, 2009. Sample collection and analysis was performed according to the approved Work Plan and Quality Assurance Project Plan for MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island, dated April 2009.

The metals analysis was performed according to USEPA SW-846 Methods 6010B and 7471A. The Tier II data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, Part IV, Inorganic Data Validation Functional Guidelines, November 2008.

The sample results, validation qualifiers (VQL), and qualifier codes (QLCD) are presented in the enclosed data summary tables. A list of the qualifier codes, which provide the reasons for the validation qualifiers, is enclosed.

The analytical data in this SDG were evaluated based on the following parameters:

- Data Completeness
- * Holding Times
- Calibration Verification
- Laboratory Blank Analyses
- ICP Interference Check Sample Results
- Matrix Spike/Matrix Spike Duplicate
- * Laboratory Duplicate Results
- * Laboratory Control Sample Results
- * Field Duplicate Precision

* • ICP Serial Dilution Results
* • Percent Solids
• Reporting Limits

* All quality control criteria were met for this parameter.

Data Completeness

Samples CRP-TP01A-0506 and CRP-TP01B-0506 were logged-in by the laboratory with the suffix "-0509". On July 6, 2009 the laboratory resubmitted all affected forms in the data package with the corrected sample ID.

Calibration Verification

The following table summarizes the analytes that recovered outside of the 90-110% QC limits in the continuing calibration verifications:

Analyte	%R	Action		Affected Samples
		(+)	NDs	
Aluminum	87.3, 115.9	J		All samples except CRP-SB11-0001
Beryllium	89.2, 111.6	J		
Chromium	83.2, 111.5, 88.7	J		All samples
Magnesium	83.1, 88.0	J		
Sodium	112.9	J		CRP-SS02-0006
Iron	87.4	J		CRP-SS02-0006, CRP-SS01-0612, CRP-SS02-0612, CRP-SS01-0006, CRP-TP05-0102, CRP-TP05-0102, CRP-SB10-0001, CRP-SB-DUP01, CRP-SB08-0001

Although the recoveries of aluminum, magnesium, sodium, and iron were outside of the QC limits in the continuing calibration verifications, the project accuracy goals are not impacted since there are no regulatory limits established for these metals for the soil samples. The positive aluminum, magnesium, sodium, and iron results in the affected samples are usable as estimated values.

The recoveries of beryllium and chromium were outside of the QC limits in the continuing calibration verifications; therefore, the project accuracy goals may be slightly impacted. The positive beryllium and chromium results in the affected samples are usable as estimated values.

Laboratory Blank Analyses

The following table summarizes the level of blank contamination detected in the laboratory blanks associated with the samples in this SDG:

Analyte	Maximum Conc. (mg/kg)	Action Level (mg/kg)	Affected Samples
Thallium	-0.18	0.90	All samples

The non-detected results for thallium are estimated (UJ) due to negative instrument drift as evidenced by the negative blank results.

Although negative results for thallium were found in the laboratory blanks, the project accuracy goals are not impacted since the affected results are much lower than the project action limit. The non-detected thallium results in the affected samples are usable as estimated reporting limits which may be biased low.

ICP Interference Check Sample Results

The following results were qualified in the affected samples due to ICP interference attributed to the high concentration of iron in the samples:

Analyte	Action		Bias	Affected Samples
	(+)	ND		
Lead	J		High	CRP-TP01B-0506, CRP-TP01B-0708

The positive results for lead results in the affected samples are qualified as estimated (J) due to positive ICP interference attributed to iron. These results may be biased high.

Although there were positive ICP interferences attributed to the high concentration of iron that resulted in estimating the positive results for lead in the samples listed above, the project accuracy goals are not impacted since these results are below the project action limit. The positive lead results in the affected samples are usable as estimated values which may be biased high.

Matrix Spike/Matrix Spike Duplicate

The following table summarizes the target metal matrix spiking recoveries that did not meet the laboratory QC limits in the matrix spike and matrix spike duplicate (MS/MSD) analysis and the qualifications applied to all soil samples in the SDG:

CRP-SB07-0001				
Analyte	MS/MSD %Rec.	%Rec. QC Limits	Action	
			(+)	ND
Antimony	47.2 / 43.0	75-125		UJ
Arsenic	126.6 / 139.9		J	
Barium	127.3 / 126.2		J	
Calcium	194.3 / 224.2		J	
Chromium	126.7 / 130.6		J	
Lead	126.4 /		J	
Potassium	147.0 /		J	

The MS/MSD recovery criteria were not met for antimony, arsenic, and lead; therefore, the project accuracy goals may be impacted. The affected positive and non-detected antimony results are usable

as estimated values and estimated quantitation limit which may be biased low. The affected positive arsenic and lead results are usable as estimated values which may be biased high.

Although the MS/MSD recovery criteria were not met for barium and chromium, the project accuracy goals are not impacted since the affected sample results are below the project action limits except chromium in sample CRP-SB03-0001. Data usability for chromium in this sample may be affected. The affected positive barium and chromium results are usable as estimated values which may be biased high.

Although the MS/MSD recovery criteria were not met for calcium and potassium, the project accuracy goals are not impacted since there are no regulatory limits established for these metals for the soil samples. The affected positive calcium and potassium results in sample CRP-SB07-0001 are usable as estimated values which may be biased high.

Reporting Limits

All non-detected metals results were reported down to the laboratory's quantitation limit.

Positive results below the quantitation limit (QL) and above the method detection limit (MDL) are estimated (J) due to uncertainty below the QL.

All project action limits were achieved by the laboratory's reporting limits (QL) except for antimony as highlighted in the Technical Specification. Data usability for this metal may be impacted.

Data Usability Assessment

The data usability assessment was performed to determine if the data met the project data quality objectives for acceptable accuracy, precision, sensitivity, and completeness; and to determine and define the impact of the exceeded quality control indicators on the technical usability of the data. Please refer to the specific sections in the above validation report for further details.

The project goals with respect to accuracy were met for the metals data set with the following exceptions. Beryllium and chromium were qualified as estimated in select samples due to poor continuing calibration verification recoveries. Antimony was qualified as estimated in all samples due to low MS/MSD recoveries; the affected results may be biased low. Arsenic and lead were qualified as estimated in all samples and chromium in CRP-SB03—0001 due to high MS/MSD recoveries; the affected results may be biased high. Although specific QC criteria were not met in these instances, the affected positive and non-detected results are usable as estimated values and estimated quantitation limits which may have a minor impact on data usability. In addition, aluminum, magnesium, sodium, and iron were qualified as estimated in select samples due to poor continuing calibration verification recoveries. Thallium was qualified as estimated in all soils samples due to negative instrument drift. Lead was qualified as estimated in select samples due to ICP interferences. Barium, chromium, calcium, and potassium were qualified as estimated in select samples due to high MS/MSD recoveries. Although specific QC criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to sensitivity were met for the metals data set with the following exception. The project action limit for antimony was not achieved by the laboratory quantitation limits. Data usability may be impacted.

The project goals with respect to precision and completeness were met for the metals data set. Data usability was not impacted with regards to precision and completeness.

Tables:	Data Validation Qualifiers and Codes Data Summary Tables
Enclosures:	Data Validation Worksheets

Data Validation Qualifiers and Codes

Data Validation Qualifiers:

= No qualifier attached to value (positive hit)
J = Value is estimated
U = Value is not detected
UJ = Value is not detected and estimated
R = Value (positive hit) is not usable
UR = Value was reported as ND but is not usable

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0001			CRP-SB02-0001			CRP-SB03-0001			CRP-SB05-0001		
SDG: CARPT001	LAB_ID	0905101-04			0905101-06			0905101-05			0905101-03		
FRACTION: M	SAMP_DATE	5/12/2009			5/12/2009			5/12/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	83.8			85.2			93.1			71.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		13400	J	C	11500	J	C	9650	J	C	8910	J	C
ANTIMONY		1.8	UJ	D	2	J	D	0.86	J	D	0.64	J	DP
ARSENIC		13.6	J	D	85.5	J	D	9	J	D	8	J	D
BARIUM		25.9	J	D	51.9	J	D	23.2	J	D	34.2	J	D
BERYLLIUM		0.33	J	C	0.38	J	C	0.28	J	C	0.3	J	CP
CADMIUM		0.45			0.9			1.3			0.34	J	P
CALCIUM		2310	J	D	1550	J	D	558	J	D	667	J	D
CHROMIUM		19.4	J	CD	17.8	J	CD	45.9	J	CD	13.4	J	CD
COBALT		15.3			18.5			10.4			7.4		
COPPER		25.2			301			36.8			34.7		
IRON		31200			28200			23900			30600		
LEAD		438	J	D	999	J	D	174	J	D	56.6	J	D
MAGNESIUM		3810	J	C	3330	J	C	2760	J	C	2630	J	C
MANGANESE		543			465			508			357		
MERCURY		0.03	J	P	0.058			0.019	J	P	0.04	J	P
NICKEL		31.3			29.4			23.6			15.3		
POTASSIUM		338	J	D	422	J	D	375	J	D	471	J	D
SELENIUM		0.44			0.54			0.35	U		0.57		
SILVER		0.18	U		0.17	U		0.21			0.21	U	
SODIUM		292	U		291	U		269	U		347	U	
THALLIUM		0.47	UJ	O	0.46	UJ	O	0.43	UJ	O	0.56	UJ	O
VANADIUM		18.8			16.6			19.1			15.4		
ZINC		124			197			69.2			198		

PROJ_NO: 00870	NSAMPLE	CRP-SB06-0001			CRP-SB07-0001			CRP-SB08-0001			CRP-SB09-0001		
SDG: CARPT001	LAB_ID	0905122-09			0905122-11			0905122-10			0905101-02		
FRACTION: M	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	91.6			82.2			87.3			82.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		5160	J	C	11300	J	C	14600	J	C	11100	J	C
ANTIMONY		0.43	J	DP	0.92	UJ	D	1.7	UJ	D	2.2	J	D
ARSENIC		4.6	J	D	14.8	J	D	18.8	J	D	15.1	J	D
BARIUM		27.9	J	D	18.8	J	D	12.6	J	D	37	J	D
BERYLLIUM		0.22	J	CP	0.33	J	C	0.3	J	C	0.36	J	C
CADMIUM		0.31			0.22	J	P	0.19	J	P	0.5		
CALCIUM		1560	J	D	829	J	D	1280	J	D	14200	J	D
CHROMIUM		18.6	J	CD	14.1	J	CD	19.7	J	CD	13.4	J	CD
COBALT		4.4			12.1			21.8			8.5		
COPPER		55.3			23.2			27.1			22.5		
IRON		17600			27400			33800	J	C	20100		
LEAD		40.7	J	D	24	J	D	13.3	J	D	572	J	D
MAGNESIUM		1530	J	C	3200	J	C	4290	J	C	4590	J	C
MANGANESE		187			407			660			311		
MERCURY		0.02	J	P	0.017	J	P	0.04	U		0.067		
NICKEL		15.7			24.1			33.2			16.5		
POTASSIUM		475	J	D	361	J	D	298	J	D	497	J	D
SELENIUM		0.23	J	P	0.4	U		0.43			0.63		
SILVER		0.16	U		0.18	U		0.17	U		0.1	J	P
SODIUM		262	U		306	U		277	U		301	U	
THALLIUM		0.42	UJ	O	0.49	UJ	O	0.44	UJ	O	0.48	UJ	O
VANADIUM		11.3			14.5			18.2			19.2		
ZINC		69.7			58.6			75			217		

PROJ_NO: 00870	NSAMPLE	CRP-SB10-0001			CRP-SB11-0001			CRP-SB-DUP01			CRP-SS01-0006		
SDG: CARPT001	LAB_ID	0905122-07			0905122-12			0905122-08			0905122-04		
FRACTION: M	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			FD			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	89.9			90.4			81.9			88.5		
	DUP_OF							CRP-SB07-0001					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		10200	J	C	8120			12900	J	C	11200	J	C
ANTIMONY		8.5	J	D	0.81	UJ	D	1.8	UJ	D	0.66	J	DP
ARSENIC		24	J	D	10.3	J	D	17.6	J	D	12	J	D
BARIUM		24.4	J	D	23.5	J	D	19.1	J	D	20.8	J	D
BERYLLIUM		0.39	J	C	0.31			0.37	J	C	0.3	J	C
CADMIUM		1.4			0.25	J	P	0.3	J	P	0.96		
CALCIUM		413	J	D	1950	J	D	972	J	D	1110	J	D
CHROMIUM		15.5	J	CD	14.3	J	CD	16.3	J	CD	17.7	J	CD
COBALT		17.1			8.8			10.6			13.2		
COPPER		579			33.1			26.7			35.7		
IRON		26100	J	C	19800			26500	J	C	29700	J	C
LEAD		97.3	J	D	41.7	J	D	25.8	J	D	149	J	D
MAGNESIUM		2480	J	C	2330	J	C	3990	J	C	3410	J	C
MANGANESE		493			267			411			494		
MERCURY		0.17			0.11			0.041	U		0.14		
NICKEL		35.7			21.9			24.3			31.2		
POTASSIUM		416	J	D	436	J	D	386	J	D	280	J	DP
SELENIUM		0.36	U		0.37			0.38	J	P	0.42		
SILVER		0.17	U		0.16	U		0.18	U		0.17	U	
SODIUM		277	U		270	U		305	U		281	U	
THALLIUM		0.44	UJ	O	0.43	UJ	O	0.49	UJ	O	0.45	UJ	O
VANADIUM		33			14.7			16.9			18.8		
ZINC		185			87.8			66.1			156		

PROJ_NO: 00870	NSAMPLE	CRP-SS01-0612			CRP-SS02-0006			CRP-SS02-0612			CRP-TP01A-0506		
SDG: CARPT001	LAB_ID	0905122-02			0905122-01			0905122-03			0905083-01		
FRACTION: M	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/11/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	90.5			80.2			84.1			86.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		9440	J	C	12700	J	C	14900	J	C	7740	J	C
ANTIMONY		1.6	UJ	D	1.9	UJ	D	1.8	UJ	D	0.87	UJ	D
ARSENIC		11.2	J	D	17.6	J	D	18.7	J	D	6.1	J	D
BARIUM		22.1	J	D	21	J	D	14.6	J	D	23.2	J	D
BERYLLIUM		0.36	J	C	0.36	J	C	0.28	J	CP	0.36	J	C
CADMIUM		0.54			0.33			0.3			0.16	J	P
CALCIUM		507	J	D	2000	J	D	1160	J	D	515	J	D
CHROMIUM		20.1	J	CD	17.1	J	CD	20.3	J	CD	11.9	J	CD
COBALT		14.2			21.3			15.8			14.6		
COPPER		36.1			24.5			20.1			21.7		
IRON		29500	J	C	28600	J	C	32000	J	C	27000		
LEAD		160	J	D	13.8	J	D	15	J	D	12.3	J	D
MAGNESIUM		3090	J	C	3640	J	C	4590	J	C	1870	J	C
MANGANESE		446			570			443			460		
MERCURY		0.036	U		0.018	J	P	0.041	U		0.041	U	
NICKEL		28.3			30.5			32.5			22.3		
POTASSIUM		367	J	D	422	J	D	215	J	DP	383	J	D
SELENIUM		0.35	U		0.34	J	P	0.27	J	P	0.3	J	P
SILVER		0.16	U		0.19	U		0.18	U		0.17	U	
SODIUM		270	U		67.5	J	CP	297	U		289	U	
THALLIUM		0.43	UJ	O	0.5	UJ	O	0.48	UJ	O	0.46	UJ	O
VANADIUM		15.7			16.5			17			16		
ZINC		106			78.3			74.1			75.8		

PROJ_NO: 00870	NSAMPLE	CRP-TP01B-0506			CRP-TP01B-0708			CRP-TP04-0506			CRP-TP05-0102		
SDG: CARPT001	LAB_ID	0905083-02			0905083-03			0905101-01			0905122-05		
FRACTION: M	SAMP_DATE	5/11/2009			5/11/2009			5/12/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	86.6			88.4			92.3			86.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		7670	J	C	5010	J	C	10400	J	C	11900	J	C
ANTIMONY		1.7	UJ	D	1.6	UJ	D	1.6	UJ	D	1.7	UJ	D
ARSENIC		7.6	J	D	6.8	J	D	12.4	J	D	27.5	J	D
BARIUM		28	J	D	20	J	D	19.1	J	D	19	J	D
BERYLLIUM		0.43	J	C	0.36	J	C	0.39	J	C	0.37	J	C
CADMIUM		0.16	J	P	0.17	J	P	0.17	J	P	0.35		
CALCIUM		311	J	D	237	J	DP	241	J	DP	531	J	D
CHROMIUM		12	J	CD	10.9	J	CD	14.4	J	CD	15.6	J	CD
COBALT		14.5			15.7			17.6			14.5		
COPPER		20.2			17.4			31.2			49.1		
IRON		27100			26300			33200			29300	J	C
LEAD		8.8	J	DK	6.3	J	DK	11.7	J	D	30.2	J	D
MAGNESIUM		1520	J	C	1200	J	C	3130	J	C	3150	J	C
MANGANESE		550			664			813			502		
MERCURY		0.037	U		0.036	U		0.039	U		0.04	U	
NICKEL		24.6			26			33			32.6		
POTASSIUM		398	J	D	414	J	D	257	J	DP	362	J	D
SELENIUM		0.29	J	P	0.35	U		0.34	U		0.37	U	
SILVER		0.17	U		0.16	U		0.16	U		0.17	U	
SODIUM		290	U		272	U		262	U		286	U	
THALLIUM		0.46	UJ	O	0.44	UJ	O	0.42	UJ	O	0.46	UJ	O
VANADIUM		16.6			13.4			14.8			24.3		
ZINC		86.1			97.4			74			88.6		

PROJ_NO: 00870	NSAMPLE	CRP-TP06-0405		
SDG: CARPT001	LAB_ID	0905122-06		
FRACTION: M	SAMP_DATE	5/13/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	83.5		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
ALUMINUM		11400	J	C
ANTIMONY		0.9	UJ	D
ARSENIC		10.4	J	D
BARIUM		20.1	J	D
BERYLLIUM		0.4	J	C
CADMIUM		0.23	J	P
CALCIUM		592	J	D
CHROMIUM		14.3	J	CD
COBALT		9.3		
COPPER		22.7		
IRON		28100		
LEAD		26	J	D
MAGNESIUM		2500	J	C
MANGANESE		293		
MERCURY		0.02	J	P
NICKEL		18.2		
POTASSIUM		386	J	D
SELENIUM		0.45		
SILVER		0.18	U	
SODIUM		299	U	
THALLIUM		0.48	UJ	O
VANADIUM		18.6		
ZINC		48		

TETRA TECH

INTERNAL CORRESPONDENCE

C-NAVY-08-09-3277W

Date: August 13, 2009

c: File G00870-4.10 (w/enc.-original)
T. Campbell (scan, w/o enc.)

To: Steve Parker (scan, w/o enc.)

From: Jennifer Cardinal (no copy)

Subject: Tier II Inorganic Data Validation, SDG CARPT005
Empirical Laboratories, LLC
CTO 406, MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island

Total Metals:

9/Groundwaters/

CRP-MW01-0609	CRP-MW02-0609
CRP-MW03-0609	CRP-MW04-0609
CRP-MW05-0609	CRP-MW06-0609
CRP-MW07-0609	CRP-MW08-0609
CRP-MW-DUP01	

(Field duplicate pair: CRP-MW08-0609/CRP-MW-DUP01)

1/Rinsate Blank/ CRP-MW-RB01-060209

Dissolved Metals:

9/Groundwaters/

CRP-MW01-0609-F	CRP-MW02-0609-F
CRP-MW03-0609-F	CRP-MW04-0609-F
CRP-MW05-0609-F	CRP-MW06-0609-F
CRP-MW07-0609-F	CRP-MW08-0609-F
CRP-MW-DUP01-F	

(Field duplicate pair: CRP-MW08-0609-F/CRP-MW-DUP01-F)

1/Rinsate Blank/ CRP-MW-RB01-060209-F

Tetra Tech NUS, Inc. (TtNUS) performed a Tier II data validation on the metals analytical data for the groundwater samples collected by TtNUS at MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island from June 1-4, 2009. Sample collection and analysis was performed according to the approved Work Plan and Quality Assurance Project Plan for MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island, dated April 2009.

The metals analysis was performed according to USEPA SW-846 Methods 6010B and 7470A. The Tier II data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, Part IV, Inorganic Data Validation Functional Guidelines, November 2008.

The sample results, validation qualifiers (VQL), and qualifier codes (QLCD) are presented in the enclosed data summary tables. A list of the qualifier codes, which provide the reasons for the validation qualifiers, is enclosed.

The analytical data in this SDG were evaluated based on the following parameters:

- Data Completeness
- * Holding Times
- Calibration Verification
- * Laboratory Blank Analyses
- * ICP Interference Check Sample Results
- Matrix Spike/Matrix Spike Duplicate
- * Laboratory Duplicate Results
- * Laboratory Control Sample Results
- Field Duplicate Precision
- * ICP Serial Dilution Results
- * Reporting Limits

* All quality control criteria were met for this parameter.

Data Completeness

On June 2, 2009, in an email to the laboratory TtNUS project manager, S. Parker, clarified that the "-F" suffix in select sample IDs indicates the sample is a filtered aliquot.

On July 9, 2009 the laboratory confirmed that the pH was checked and determined to be acceptable for all samples in this SDG.

On July 9, 2009 the laboratory confirmed that all ICB and CCB results were reported down to the MDL.

On July 23, 2009 the laboratory clarified that all samples were concentrated by a factor of 4; therefore, the reporting limits are four times lower than the ones listed in Form 10.

Calibration Verification

Total and Dissolved Metals

The following table summarizes the analytes that recovered outside of the 90-110% QC limits in the continuing calibration verifications:

Analyte	%R	Action		Affected Samples
		(+)	NDs	
Aluminum	89.2, 87.4, 87.0, 87.6	J	UJ	All total and dissolved metals samples
Magnesium	87.6, 85.9, 87.0, 85.7	J	UJ	
Chromium	85.8, 88.9, 86.2		UJ	
Silver	87.6, 87.0, 87.7		UJ	

Although the recoveries of aluminum, magnesium, and silver were outside of the QC limits in the continuing calibration verifications, the project accuracy goals are not impacted since there are no regulatory limits established for these metals for the groundwater samples. The positive and non-

detected aluminum, magnesium, and silver results in the affected samples are usable as estimated values and estimated quantitation limits which may be biased low.

Although the recoveries of chromium were outside of the QC limits in the continuing calibration verifications, the project accuracy goals are not impacted since the affected results are an order of magnitude or lower than the project action limit. The non-detected chromium results in the affected samples are usable as estimated quantitation limits which may be biased low.

The following table summarizes the analyte that recovered above the 130% QC limit in the reporting limit check standard:

Analyte	%R	2xTrue Value (TV) (µg/L)	Action		Affected Samples
			(+)<2xTV	NDs	
Lead	131	1.5*	J		CRP-MW05-0609, CRP-MW06-0609, CRP-MW08-0609-F

*True value is adjusted for preparation factors including 4x concentration.

Although the recovery of lead was below the QC limit in the reporting limit check standard, the project accuracy goals are not impacted since the affected results are much lower than the project action limit for lead. The positive lead results in the affected samples are usable as estimated values which may be biased high.

Matrix Spike/Matrix Spike Duplicate

Dissolved Metals

The following table summarizes the target metal matrix spiking recoveries that did not meet the laboratory QC limits in the matrix spike and matrix spike duplicate (MS/MSD) analysis and the qualifications applied to all filtered samples in the SDG:

CRP-MW07-0608-F				
Analyte	MSD %Rec.	%Rec. QC Limits	Action	
			(+)	ND
Dissolved Magnesium	65.9	75-125	J	

Although the MSD recovery criteria were not met for dissolved magnesium, the project accuracy goals are not impacted since there are no regulatory limits established for magnesium for the groundwater samples. The affected positive magnesium results in the affected filtered samples are usable as estimated values which may be biased low.

Field Duplicate Precision

The following table summarizes the analyte that recovered outside of the 30% RPD QC limit in the analysis of the field duplicate pair CRP-MW08-0609/CRP-MW-DUP01:

Analyte	Sample Result (µg/L)	Sample Result (µg/L)	RPD	Action	
	CRP-MW08-0609	CRP-MW-DUP01		(+)	NDs
Iron	539	956	55.8	J	

The positive iron results are estimated (J) in all total metals groundwater samples due to poor field duplicate precision.

Although the results of the field duplicate analysis exceeded the QC limits for iron, the project precision goals are not impacted since there are no regulatory limits established for iron for the groundwater samples. The positive iron results in all groundwater samples are usable as estimated values for which the bias is indeterminate.

Reporting Limits

All non-detected metals results were reported down to the laboratory's quantitation limit.

Positive results below the quantitation limit (QL) and above the method detection limit (MDL) are estimated (J) due to uncertainty below the QL.

All project action limits were achieved by the laboratory's reporting limits (RL).

Data Usability Assessment

The data usability assessment was performed to determine if the data met the project data quality objectives for acceptable accuracy, precision, sensitivity, and completeness; and to determine and define the impact of the exceeded quality control indicators on the technical usability of the data. Please refer to the specific sections in the above validation report for further details.

The project goals with respect to accuracy were met for the total and dissolved metals data set. Aluminum, magnesium, silver, and chromium were qualified as estimated in all samples due to low continuing calibration verification recoveries. Lead was qualified as estimated in select samples due to uncertainty near the reporting limit. Dissolved magnesium was qualified as estimated in all filtered samples due to a low MSD recovery. Although specific QC criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision were met for the total and dissolved metals data set. Iron was qualified as estimated in all total metals samples due to poor field duplicate precision. Although specific QC criteria were not met in this instance, data usability is not impacted and the affected positive results are usable as estimated values.

The project goals with respect to sensitivity and completeness were met for the total and dissolved metals data set. Data usability was not impacted with regards to sensitivity and completeness.

Tables: Data Validation Qualifiers and Codes
Data Summary Tables

Enclosures: Data Validation Worksheets

Data Validation Qualifiers and Codes

Data Validation Qualifiers:

= No qualifier attached to value (positive hit)
J = Value is estimated
U = Value is not detected
UJ = Value is not detected and estimated
R = Value (positive hit) is not usable
UR = Value was reported as ND but is not usable

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00870	NSAMPLE	CRP-MW01-0609			CRP-MW02-0609			CRP-MW03-0609			CRP-MW04-0609		
SDG: CARPT005	LAB_ID	0906013-01			0906028-01			0906028-02			0906056-02		
FRACTION: M	SAMP_DATE	6/1/2009			6/2/2009			6/2/2009			6/4/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		116	J	C	169	J	C	77.2	J	C	186	J	C
ANTIMONY		3.8	U		3.8	U		3.8	U		3.8	U	
ARSENIC		1.2	U		1.2	U		4			1.2	U	
BARIUM		29			29.7			32.2			16.3		
BERYLLIUM		1.2	U		1.2	U		1.2	U		1.2	U	
CADMIUM		1.2	U		1.2	U		1.2	U		1.2	U	
CALCIUM		11800			16800			12100			10500		
CHROMIUM		1.2	UJ	C	1.2	UJ	C	1.2	UJ	C	1.2	UJ	C
COBALT		4.7			8.2			16.1			5.1		
COPPER		2.5	U		2.5	U		2.5	U		2.5	U	
IRON		625	J	G	942	J	G	12800	J	G	509	J	G
LEAD		0.75	U		0.75	U		0.75	U		0.75	U	
MAGNESIUM		5420	J	C	7580	J	C	5780	J	C	2820	J	C
MANGANESE		1040			2480			2990			565		
MERCURY		0.2	U		0.2	U		0.2	U		0.2	U	
NICKEL		8.1			16.4			18			7.5		
POTASSIUM		1980			2590			1750			2160		
SELENIUM		1.6	U		1.6	U		1.6	U		1.6	U	
SILVER		0.75	UJ	C	0.75	UJ	C	0.75	UJ	C	0.75	UJ	C
SODIUM		23100			19000			10700			25000		
THALLIUM		2	U		2	U		2	U		2	U	
VANADIUM		3.1	U		3.1	U		3.1	U		3.1	U	
ZINC		3.1	J	P	3.8	J	P	21.9			2.7	J	P

PROJ_NO: 00870	NSAMPLE	CRP-MW05-0609			CRP-MW06-0609			CRP-MW07-0609			CRP-MW08-0609		
SDG: CARPT005	LAB_ID	0906041-03			0906041-04			0906041-02			0906041-01		
FRACTION: M	SAMP_DATE	6/3/2009			6/3/2009			6/3/2009			6/3/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		202	J	C	208	J	C	23.4	J	CP	99.7	J	C
ANTIMONY		3.8	U		3.8	U		3.8	U		3.8	U	
ARSENIC		1.2	U		1.2	U		1.2	U		1.2	U	
BARIUM		30.2			38.9			51.2			23.8		
BERYLLIUM		1.2	U		1.2	U		1.2	U		1.2	U	
CADMIUM		1.2	U		1.2	U		1.2	U		1.2	U	
CALCIUM		8750			18600			9500			9950		
CHROMIUM		1.2	UJ	C	1.2	UJ	C	1.2	UJ	C	1.2	UJ	C
COBALT		18.6			9.7			1.4	J	P	8.3		
COPPER		2.5	U		2.5	U		2.5	U		2.5	U	
IRON		9650	J	G	1140	J	G	14.1	J	GP	539	J	G
LEAD		0.48	J	CP	0.38	J	CP	0.75	U		0.75	U	
MAGNESIUM		4790	J	C	3720	J	C	2410	J	C	3910	J	C
MANGANESE		1410			3370			278			787		
MERCURY		0.2	U		0.2	U		0.2	U		0.2	U	
NICKEL		66.6			21.3			5.8			8.6		
POTASSIUM		1010	J	P	2920			2040			2030		
SELENIUM		1.6	U		1.6	U		1.6	U		1.6	U	
SILVER		0.75	UJ	C	0.75	UJ	C	0.75	UJ	C	0.75	UJ	C
SODIUM		10400			17700			9100			8190		
THALLIUM		2	U		2	U		2	U		2	U	
VANADIUM		3.1	U		3.1	U		3.1	U		3.1	U	
ZINC		67.3			10.1			1.6	J	P	3.5	J	P

PROJ_NO: 00870	NSAMPLE	CRP-MW-DUP01			CRP-MW-RB01-060209		
SDG: CARPT005	LAB_ID	0906041-05			0906028-06		
FRACTION: M	SAMP_DATE	6/3/2009			6/2/2009		
MEDIA: WATER	QC_TYPE	FD			RB		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS						
	DUP_OF	CRP-MW08-0609					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		197	J	C	50	UJ	C
ANTIMONY		3.8	U		3.8	U	
ARSENIC		1.2	U		1.2	U	
BARIUM		22.9			10	U	
BERYLLIUM		1.2	U		1.2	U	
CADMIUM		1.2	U		1.2	U	
CALCIUM		9350			1250	U	
CHROMIUM		1.2	UJ	C	1.2	UJ	C
COBALT		8.3			3.1	U	
COPPER		2.5	U		2.5	U	
IRON		956	J	G	25	U	
LEAD		0.75	U		0.75	U	
MAGNESIUM		3690	J	C	1250	UJ	C
MANGANESE		775			3.8	U	
MERCURY		0.2	U		0.2	U	
NICKEL		8.7			2.5	U	
POTASSIUM		1910			1250	U	
SELENIUM		1.6	U		1.6	U	
SILVER		0.75	UJ	C	0.75	UJ	C
SODIUM		7680			1250	U	
THALLIUM		2	U		2	U	
VANADIUM		3.1	U		3.1	U	
ZINC		3.5	J	P	5	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW01-0609-F			CRP-MW02-0609-F			CRP-MW03-0609-F			CRP-MW04-0609-F		
SDG: CARPT005	LAB_ID	0906013-02			0906028-03			0906028-04			0906056-03		
FRACTION: MF	SAMP_DATE	6/1/2009			6/2/2009			6/2/2009			6/4/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		21.4	J	CP	22.7	J	CP	21.3	J	CP	34.5	J	CP
ANTIMONY		3.8	U		3.8	U		3.8	U		3.8	U	
ARSENIC		1.2	U		1.2	U		4			1.2	U	
BARIUM		27.2			28.6			31.4			15.6		
BERYLLIUM		1.2	U		1.2	U		1.2	U		1.2	U	
CADMIUM		1.2	U		1.2	U		1.2	U		1.2	U	
CALCIUM		11700			16900			12000			10700		
CHROMIUM		1.2	UJ	C	1.2	UJ	C	1.2	UJ	C	1.2	UJ	C
COBALT		4.1			8.1			15.9			5.2		
COPPER		2.5	U		2.5	U		2.5	U		2.5	U	
IRON		287			482			12200			86.2		
LEAD		0.75	U		0.75	U		0.75	U		0.75	U	
MAGNESIUM		5270	J	CD	7450	J	CD	5680	J	CD	2810	J	CD
MANGANESE		932			2710			2930			606		
MERCURY		0.2	U		0.2	U		0.2	U		0.2	U	
NICKEL		7			15.4			17.4			7		
POTASSIUM		1760			2540			1710			2220		
SELENIUM		1.6	U		1.6	U		1.6	U		1.6	U	
SILVER		0.75	UJ	C	0.75	UJ	C	0.75	UJ	C	0.75	UJ	C
SODIUM		21900			19000			10700			26200		
THALLIUM		2	U		2	U		2	U		2	U	
VANADIUM		3.1	U		3.1	U		3.1	U		3.1	U	
ZINC		2.5	J	P	3.3	J	P	21.5			2.3	J	P

PROJ_NO: 00870	NSAMPLE	CRP-MW05-0609-F			CRP-MW06-0609-F			CRP-MW07-0609-F			CRP-MW08-0609-F		
SDG: CARPT005	LAB_ID	0906041-08			0906041-09			0906041-07			0906041-06		
FRACTION: MF	SAMP_DATE	6/3/2009			6/3/2009			6/3/2009			6/3/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		28.1	J	CP	27.9	J	CP	19	J	CP	20.9	J	CP
ANTIMONY		3.8	U		3.8	U		3.8	U		3.8	U	
ARSENIC		1.2	U		1.2	U		1.2	U		1.2	U	
BARIUM		24.7			36.9			50.2			19.9		
BERYLLIUM		1.2	U		1.2	U		1.2	U		1.2	U	
CADMIUM		1.2	U		1.2	U		1.2	U		1.2	U	
CALCIUM		7690			19100			9610			10100		
CHROMIUM		1.2	UJ	C	1.2	UJ	C	1.2	UJ	C	1.2	UJ	C
COBALT		15.8			9.8			1.3	J	P	5.6		
COPPER		2.5	U		2.5	U		2.5	U		2.5	U	
IRON		8080			123			25	U		191		
LEAD		0.75	U		0.75	U		0.75	U		0.44	J	CP
MAGNESIUM		4200	J	CD	3880	J	CD	2450	J	CD	4040	J	CD
MANGANESE		1220			3350			276			551		
MERCURY		0.2	U		0.2	U		0.2	U		0.2	U	
NICKEL		56.3			21.1			5.7			6.9		
POTASSIUM		860	J	P	2850			2030			1900		
SELENIUM		1.6	U		1.6	U		1.6	U		1.6	U	
SILVER		0.75	UJ	C	0.75	UJ	C	0.75	UJ	C	0.75	UJ	C
SODIUM		9090			18200			9210			8240		
THALLIUM		2	U		2	U		2	U		2	U	
VANADIUM		3.1	U		3.1	U		3.1	U		3.1	U	
ZINC		57.3			6.3			1.5	J	P	2	J	P

PROJ_NO: 00870	NSAMPLE	CRP-MW-DUP01-F			CRP-MW-RB01-060209-F		
SDG: CARPT005	LAB_ID	0906041-10			0906028-07		
FRACTION: MF	SAMP_DATE	6/3/2009			6/2/2009		
MEDIA: WATER	QC_TYPE	FD			RB		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS						
	DUP_OF	CRP-MW08-0609-F					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		22.1	J	CP	50	UJ	C
ANTIMONY		3.8	U		3.8	U	
ARSENIC		1.2	U		1.2	U	
BARIUM		18.4			10	U	
BERYLLIUM		1.2	U		1.2	U	
CADMIUM		1.2	U		1.2	U	
CALCIUM		9300			1250	U	
CHROMIUM		1.2	UJ	C	1.2	UJ	C
COBALT		5.2			3.1	U	
COPPER		2.5	U		2.5	U	
IRON		209			25	U	
LEAD		0.75	U		0.75	U	
MAGNESIUM		3790	J	CD	1250	UJ	C
MANGANESE		492			3.8	U	
MERCURY		0.2	U		0.2	U	
NICKEL		6.3			2.5	U	
POTASSIUM		1710			1250	U	
SELENIUM		1.6	U		1.6	U	
SILVER		0.75	UJ	C	0.75	UJ	C
SODIUM		7720			1250	U	
THALLIUM		2	U		2	U	
VANADIUM		3.1	U		3.1	U	
ZINC		2.1	J	P	5	U	

TETRA TECH

INTERNAL CORRESPONDENCE

C-NAVY-07-09-3246W

Date: July 28, 2009

c: File G00870-4.10 (w/enc.-original)
T. Campbell (scan, w/o enc.)

To: Steve Parker (scan, w/o enc.)

From: Jennifer Cardinal (no copy) (for)

Subject: Tier II Organic Data Validation, SDG CARPT002
Empirical Laboratories, LLC
CTO 406, MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island

VOC/SVOC/Pesticides/PCB/DRO/GRO:

7/Soils/	CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628
	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840
	CRP-SB09-DUP02		

(Field Duplicate Pair: CRP-SB09-3840/CRP-SB09-DUP02)

1/Field Blank/	CRP-SB-FB01-051909
1/Rinsate Blank/	CRP-SB-RB01-051809

SVOC:

9/Soils/	CRP-SO-ARC1A	CRP-SO-ARC1B	CRP-SO-ARC1C
	CRP-SO-ARC2A	CRP-SO-ARC2B	CRP-SO-ARC2C
	CRP-SO-ARC3A	CRP-SO-ARC3B	CRP-SO-ARC3C

VOC:

1/Trip Blank/	CRP-TB04-051809

VOC/GRO:

1/Trip Blank/	CRP-TB05-051909

Tetra Tech NUS, Inc. (TtNUS) performed a Tier II data validation on the volatile organic compound (VOC), semivolatile organic compound (SVOC), pesticide, polychlorinated biphenyl (PCB), gasoline range organics (GRO), and diesel range organics (DRO) analytical data for the soil samples collected by TtNUS at MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island from May 14-19, 2009. Sample collection and analysis was performed according to the approved Work Plan and Quality Assurance Project Plan for MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island, dated April 2009.

The SVOC samples CRP-SO-ARC1A, CRP-SO-ARC1B, CRP-SO-ARC1C, CRP-SO-ARC2A, CRP-SO-ARC2B, CRP-SO-ARC2C, CRP-SO-ARC3A, CRP-SO-ARC3B, and CRP-SO-ARC3C were collected using a 30-point multi increment sampling. The A, B, and C samples are triplicate samples for each firing point grid.

The VOC and SVOC analyses were performed according to USEPA SW-846 Methods 8260B and 8270C, respectively. The pesticides and PCB analyses were performed according to USEPA SW-846 Methods 8081 and 8082, respectively. The GRO and DRO analyses were both performed according to USEPA SW-846 Method 8015B.

The VOC, SVOC, GRO, and DRO data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996. The pesticides and PCB validation was performed in accordance with the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Organic Analyses, Part III, February 2004.

The sample results, validation qualifiers (VQ), and qualifier codes (QLCD) are presented in the enclosed data summary tables. A list of the qualifier codes, which provide the reasons for the validation qualifiers, is enclosed.

The data were evaluated based on the following parameters:

- Data Completeness
- * Preservation and Technical Holding Times
- * GC/MS Instrument Performance Check (Tuning)
- * Pesticide Degradation
- Initial and Continuing Calibrations
- Blanks
- Surrogate Compounds
- Internal Standards
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample/Laboratory Control Sample Duplicate
- * Field Duplicates
- Field Triplicates
- Analyte Identification/Quantitation
- * Percent Solids
- Reporting Limits

* All criteria were met for this parameter.

Data Completeness

Volatiles

The VOC surrogate recovery form did not indicate which samples were reanalyzed samples (RE) or methanol samples (DL). On July 15, 2009 the laboratory provided a surrogate recovery form which included the laboratory sample IDs to allow the determination of the run from which the results were reported.

On July 15, 2009 the laboratory clarified that LCS V5BLK0529LCS is associated with the volatiles analysis of samples CRP-SB09-DUP02DL and CRP-SB09-1214DL. This is the daily LCS associated with the samples analyzed from the low-level vials and methanol extracts.

On July 14, 2009 the laboratory provided a list of volatile target compounds associated with each internal standard used in the analysis since it was not provided in the original data package.

Semivolatiles

The percent solids determination for samples CRP-SO-ARC1A, CRP-SO-ARC1B, CRP-SO-ARC1C, CRP-SO-ARC2A, CRP-SO-ARC2B, CRP-SO-ARC2C, CRP-SO-ARC3A, CRP-SO-ARC3B, and CRP-SO-ARC3C was not provided in the original data package. On July 15, 2009 the laboratory provided the missing raw data pages.

On July 15, 2009 the laboratory provided the Form 5s for the semivolatiles initial calibrations since they were not provided in the original data package.

On July 15, 2009 the laboratory explained that the "R" qualifier on select internal standard form # 8 for samples analyzed 06/05/09 represented the recovery of the internal standard and not an area count.

Pesticides and PCBs

On July 6, 2009 the laboratory clarified that the Form 10s for the pesticide and PCB analyses report the relative percent difference (RPD) between the results in the dual column analysis and not the %D as indicated by the column header on the forms.

The method blank 9E26030-BLK1 was reported with incorrect reporting limits due to laboratory error. On July 22, 2009 the laboratory resubmitted the blank summary form to correct the reporting limits.

<u>Initial and Continuing Calibrations</u>

Volatiles

The following table summarizes the volatile compound that failed to meet the initial calibration verification criterion of %D < 25%:

Compound	%D	Action		Affected Samples
		(+)	ND	
Acetone	-34.9		UJ	CRP-SB09-0608, CRP-SB09-3840, CRP-SB09-DUP02, CRP-SB09-1214

Although the %D for acetone exceeded the QC criterion, the project accuracy goals are not impacted since the affected sample results are much lower than the project action limit for acetone. The non-detected acetone results in the affected samples are usable as estimated quantitation limits.

The following table summarizes the volatile compounds that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	%D	Action		Affected Samples
		(+)	NDs	
Acetone	40.1, 53.2, 61.8		UJ	CRP-SB09-0608, CRP-SB09-3840, CRP-SB09-DUP02, CRP-SB09-1214, CRP-TB04-051809, CRP-SB-RB01-051809, CRP-TB05-051909, CRP-SB-FB01-051909
2-Hexanone	26.3, 33.7, 38.1		UJ	
2-Butanone	32.6, 37.9		UJ	CRP-TB04-051809, CRP-SB-RB01-051809, CRP-TB05-051909, CRP-SB-FB01-051909
4-Methyl-2-pentanone	27.8		UJ	CRP-TB05-051909, CRP-SB-FB01-051909

Although the %D for acetone, 4-methyl-2-pentanone, and 2-butanone exceeded the QC criterion, the project accuracy goals are not impacted since the affected sample results are much lower than the project action limit for these compounds. The non-detected acetone, 4-methyl-2-pentanone, and 2-butanone results in the affected samples are usable as estimated quantitation limits.

Although the %D for 2-hexanone exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for 2-hexanone. The non-detected 2-hexanone results in the affected samples are usable as estimated quantitation limits.

Semivolatiles

The following table summarizes the semivolatile compounds that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	%D	Action		Affected Samples
		(+)	NDs	
Hexachlorocyclopentadiene	29.8, 32.2		UJ	CRP-SB-FB01-051909, CRP-SB01-0608, CRP-SB01-2022, CRP-SB01-2628, CRP-SB-RB01-051809, CRP-SB09-0608, CRP-SB09-3840, CRP-SB09-DUP02, CRP-SB09-1214
4-Nitrophenol	-48.4		UJ	CRP-SB-RB01-051809, CRP-SB09-0608, CRP-SB09-3840, CRP-SB09-DUP02, CRP-SB09-1214
Atrazine	-29.4		UJ	CRP-SO-ARC1A, CRP-SO-ARC1B, CRP-SO-ARC1C, CRP-SO-ARC2A, CRP-SO-ARC2B, CRP-SO-ARC2C, CRP-SO-ARC3A, CRP-SO-ARC3B, CRP-SO-ARC3C
Caprolactam	27.2		UJ	
Di-n-octylphthalate	35.2		UJ	

Although the %D for hexachlorocyclopentadiene and 4-nitrophenol exceeded the QC criterion, the project accuracy goals are not impacted since the affected sample results are much lower than the project action limits for these compounds. The non-detected hexachlorocyclopentadiene and 4-nitrophenol results in the affected samples are usable as estimated quantitation limits.

Although the %D for atrazine, caprolactam, and di-n-octylphthalate exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for these compounds.

The non-detected atrazine, caprolactam, and di-n-octylphthalate results in the affected samples are usable as estimated quantitation limits.

Blanks

Semivolatiles

The following table summarizes the level of blank contamination detected in the laboratory blank associated with the listed samples:

Compound	Type of Blank	Maximum Concentration	Action Level	Affected Samples
Bis(2-ethylhexyl) phthalate	Method	1.9 µg/L	19 µg/L	CRP-SB-RB01-051809, CRP-SB-FB01-051909
Caprolactam	Method	1.1 µg/L	5.5 µg/L	

Blank actions were applied to elevate the reporting limits for bis(2-ethylhexyl)phthalate and caprolactam in the affected field and rinsate blank samples due to laboratory blank contamination. The 10x rule applies for bis(2-ethylhexyl)phthalate while the 5x rule applies for caprolactam. The positive results below the blank action level and below the quantitation limit are changed to non-detected values at the quantitation limit (QL).

Although bis(2-ethylhexyl)phthalate and caprolactam contamination was found in the laboratory blank, the project sensitivity goals are not impacted since there are no regulatory limits established for the field and rinsate blank samples. The bis(2-ethylhexyl)phthalate and caprolactam results in the affected samples are usable as non-detected values.

Surrogate Compounds

DRO

The following samples had surrogate spike recoveries outside of the recovery limits:

Sample	Surrogate	% Recovery	QC Limits	Action	
				(+)	NDs
CRP-SB09-DUP02	Ortho-terphyl	45	47-142	J	
CRP-SB01-0608		45		J	

The surrogate ortho-terphyl recovered below the QC limits in samples CRP-SB09-DUP02 and CRP-SB01-0608. All positive DRO results are estimated (J) in the affected samples due to low surrogate recoveries.

Although the surrogate recovery QC criteria were not met for ortho-terphyl, the project accuracy goals are not impacted since the affected samples results are much lower than the DRO project action limit. The positive DRO results in samples CRP-SB09-DUP02 and CRP-SB01-0608 are usable as estimated values which may be biased low.

Internal Standards

Volatiles

The following table summarizes the volatile internal standards that failed to meet the acceptance criteria:

Internal Standard	IS Area	Acceptable Range	Action		Affected Samples
			(+)	NDs	
Fluorobenzene	245908	428059-1712236		UJ	CRP-SB09-DUP02
Chlorobenzene-d5	120494	205955-823820		UJ	
1,4-Dichlorobenzene-d4	98895	176390-705560		UJ	
	178638	188112-752446		UJ	CRP-SB01-2628
	151673	176390-705560		UJ	CRP-SB09-1214
	172056	188112-752446		UJ	CRP-SB01-2022

The internal standard areas of fluorobenzene, chlorobenzene-d5, and 1,4-dichlorobenzene-d4 failed to meet the acceptable range for the samples listed above. All results in sample CRP-SB09-DUP02 are estimated (UJ), and all non-detected results associated with 1,4-dichlorobenzene-d4 are estimated (UJ) in samples CRP-SB01-2628, CRP-SB09-1214, and CRP-SB01-2022 due to poor internal standard performance.

The target compounds associated with 1,4-dichlorobenzene-d4 are 1,1,2,2-tetrachloroethane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and 1,2-dibromo-3-chloropropane.

Although the QC criteria were not met for the internal standard areas of fluorobenzene, chlorobenzene-d5, and 1,4-dichlorobenzene-d4 for the above samples, the project accuracy goals are not impacted since the affected sample results are reported at values much lower than the project action limits. The non-detected results in the affected samples are usable as estimated quantitation limits.

Semivolatiles

The following table summarizes the semivolatile internal standards that failed to meet the acceptance criteria:

Internal Standard	IS Area	Acceptable Range	Action		Affected Samples
			(+)	NDs	
Chrysene-d12	3267457	722853-2891412	J		CRP-SB09-0608
Perylene-d12	2658584	525993-2103970	J		
Chrysene-d12	2999030	722853-2891412	J		CRP-SB09-DUP02
Chrysene-d12	3046454	722853-2891412	J		CRP-SB09-1214
Perylene-d12	738016	777450-3109800	J	UJ	CRP-SO-ARC1C
Perylene-d12	688474	777450-3109800	J	UJ	CRP-SO-ARC3A
Perylene-d12	743143	777450-3109800	J	UJ	CRP-SO-ARC3B
Perylene-d12	629541	777450-3109800	J	UJ	CRP-SO-ARC3C

The internal standard area of chrysene-d12 and perylene-d12 failed to meet the acceptable range for the samples listed above. The affected positive results for target compounds in sample CRP-SB09-0608 are bis(2-ethylhexyl)phthalate and benzo(a)pyrene. The affected positive results for target compounds in sample CRP-SB09-DUP02 are bis(2-ethylhexyl)phthalate and butylbenzylphthalate. The affected positive result for target compound in sample CRP-SB09-1214 is bis(2-ethylhexyl)phthalate.

The affected target compounds in samples CRP-SO-ARC1C, CRP-SO-ARC3A, CRP-SO-ARC3B, and CRP-SO-ARC3C are benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, dibenzo(a,h)anthracene, benzo(a)pyrene, di-n-octylphthalate, and indeno(1,2,3-cd)pyrene. The positive and non-detected results for these associated compounds are estimated (J, UJ) in the affected samples due to poor internal standard performances.

Although the QC criteria were not met for the internal standard area of chrysene-d12 and perylene-d12 for the above samples, the project accuracy goals for butylbenzylphthalate and di-n-octylphthalate are not impacted since there are no regulatory limits established for these compounds for the soil samples. The positive results in the affected samples are usable as estimated values.

Although the QC criteria were not met for the internal standard area of chrysene-d12 for the above samples, the project accuracy goals for bis(2-ethylhexyl)phthalate are not impacted since the affected results are much lower than the project action limit. The positive results in the affected samples are usable as estimated values.

The QC criteria were not met for the internal standard area of perylene-d12 for the above samples; therefore, the project accuracy goals may be impacted for benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, dibenzo(a,h)anthracene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene. The positive results in the affected samples are usable as estimated values.

Matrix Spike/Matrix Spike Duplicate

Volatiles

The matrix spike/matrix spike duplicate (MS/MSD) results for sample CRP-SB01-0608 recovered the majority of the volatile compounds below the compound-specific recovery limits. All positive results are estimated (J) and all non-detected results are estimated (UJ) in sample CRP-SB01-0608 due to low MS/MSD recoveries.

Although the matrix spike/matrix spike duplicate recoveries for the majority of the volatile compounds did not meet the QC limits, the project accuracy goals are not impacted since the affected results are much lower than the project action limits. The positive and non-detected volatile compound results in sample CRP-SB01-0608 are usable as estimated values and estimated quantitation limits which may be biased low.

Semivolatiles

The following table summarizes the semivolatile matrix spiking recovery that did not meet QC limits in the matrix spike and matrix spike duplicate analysis and the qualifications applied to the affected sample:

CRP-SB01-0608					
Compound	MS %REC	MSD %REC	QC Limits	Action	
			%REC	(+)	ND
Benzo(a)anthracene	116	118	50-110	J	
Bis(2-ethylhexyl)phthalate	-	128	45-125	J	

-Criterion met

Although the MS/MSD recovery criteria were not met for benzo(a)anthracene and bis(2-ethylhexyl)phthalate, the accuracy project goals are not impacted since the affected sample results are much lower than the project action limits. The positive benzo(a)anthracene and bis(2-ethylhexyl)phthalate results in sample CRP-SB01-0608 are usable as estimated values which may be biased high.

Laboratory Control Sample/Laboratory Control Sample Duplicates

Semivolatiles

The following table summarizes the semivolatile compounds that failed to meet the LCS recovery limits:

Compound	% Rec.	QC Limits	Action		Affected Samples
			(+)	NDs	
Anthracene	118	55-105	J		CRP-SO-ARC1A, CRP-SO-ARC1B, CRP-SO-ARC1C, CRP-SO-ARC2A, CRP-SO-ARC2B, CRP-SO-ARC2C, CRP-SO-ARC3A
Benzo(a)anthracene	117	50-110	J		CRP-SO-ARC1A, CRP-SO-ARC1B, CRP-SO-ARC1C, CRP-SO-ARC2A, CRP-SO-ARC2B, CRP-SO-ARC2C, CRP-SO-ARC3A, CRP-SO-ARC3B, CRP-SO-ARC3C
Chrysene	115	55-110	J		
Fluoranthene	120	55-115	J		
N-Nitrosodiphenylamine	122	50-115	J		CRP-SO-ARC1A, CRP-SO-ARC1B, CRP-SO-ARC1C, CRP-SO-ARC2A, CRP-SO-ARC2C
Caprolactam	13, 15, 17	20-110	J		CRP-SB-RB01-051809, CRP-SB-FB01-051909

Although the laboratory control sample recovery criteria were exceeded for anthracene, the project accuracy goals are not impacted since the affected results are lower than the project action limit. The affected positive results are usable as estimated values which may be biased high.

Although the laboratory control sample recovery criteria were not met for N-nitrosodiphenylamine and caprolactam, the project accuracy goals are not impacted since there are no regulatory limits established for n-nitrosodiphenylamine for the soil samples, and there are no regulatory limits established for the rinsate and field blank samples. The affected N-nitrosodiphenylamine positive

results are usable as estimated values which may be biased high and the affected caprolactam results may be biased low.

The laboratory control sample recovery criteria were not met for benzo(a)anthracene, chrysene, and fluoranthene; therefore, the project accuracy goals may be impacted. The affected positive results are usable as estimated values which may be biased high.

Pesticides

The following table summarizes the pesticide compounds that failed to meet the LCS/LCSD recovery limits:

Compound	% Rec.	% Rec. QC Limits	RPD	RPD QC Limits	Action		Affected Samples
					(+)	NDs	
Endrin aldehyde	45, 34	55-135	31	30		UJ	CRP-SB-RB01-051809, CRP-SB-FB01-051909
Endrin ketone	74	75-125	-	-		UJ	

-Criterion met

Although the LCS/LCSD recovery criteria were not met endrin aldehyde and endrin ketone, the project accuracy goals are not impacted since there are no regulatory limits established for the rinsate and field blank samples. The affected non-detected results are usable as estimated quantitation limits which may be biased low.

Although the LCS/LCSD relative percent difference (RPD) criterion was not met for endrin aldehyde, the project precision goals are not impacted since there are no regulatory limits established for the rinsate blank sample. The affected non-detected result is usable as an estimated quantitation limit for which the bias is indeterminate.

DRO

The following table summarizes the hydrocarbon range that failed to meet the LCS recovery limits:

Compound	RPD	RPD QC Limits	Action		Affected Samples
			(+)	NDs	
DRO	49	30	J		CRP-SB-RB01-051809, CRP-SB-FB01-051909

Although the laboratory control sample relative percent difference (RPD) criterion was not met for DRO, the project precision goals are not impacted since there are no regulatory limits established for the rinsate and field blank samples. The affected positive results are usable as estimated values for which the bias is indeterminate.

Field Triplicate Analysis

Semivolatiles

The field triplicate samples CRP-SO-ARC1A/CRP-SO-ARC1B/CRP-SO-ARC1C exceeded a relative standard deviation (RSD) of 50% for the following semivolatile compounds:

Compound	CRP-SO-ARC1A	CRP-SO-ARC1B	CRP-SO-ARC1C	RSD	Action	
	Result (µg/kg)	Result (µg/kg)	Result (µg/kg)		(+)	NDs
Benzo(a)anthracene	19000	5800	7400	67.1	J	
Benzo(a)pyrene	25000	8100	10000	64.4	J	
Benzo(b)fluoranthene	25000	9200	11000	57.4	J	
Benzo(g,h,i)perylene	19000	4800	7100	74.0	J	
Benzo(k)fluoranthene	10000	3300	4000	63.9	J	
Chrysene	22000	7200	9300	62.4	J	
Fluoranthene	24000	8400	9500	62.3	J	
Indeno(1,2,3-cd)pyrene	19000	5300	7100	71.1	J	
Phenanthrene	14000	4600	5600	64.0	J	
Pyrene	28000	8100	12000	65.8	J	

The field triplicate RSD for the above compounds exceeded the 50% criterion; therefore, the project precision goals may be impacted due to sample heterogeneity. The affected positive results in samples CRP-SO-ARC1A, CRP-SO-ARC1B, and CRP-SO-ARC1C are usable as estimated values.

The field duplicate triplicate CRP-SO-ARC2A/CRP-SO-ARC2B/CRP-SO-ARC2C exceeded a relative standard deviation (RSD) of 50% for the following semivolatile compound:

Compound	CRP-SO-ARC2A	CRP-SO-ARC2B	CRP-SO-ARC2C	RSD	Action	
	Result (µg/kg)	Result (µg/kg)	Result (µg/kg)		(+)	NDs
Dibenzo(a,h)anthracene	2100	ND	ND	173.2	J	

The field triplicate RSD for dibenzo(a,h)anthracene exceeded the QC criterion; therefore, the project precision goals may be impacted due to sample heterogeneity. The affected positive results in samples CRP-SO-ARC2A, CRP-SO-ARC2B, and CRP-SO-ARC2C are usable as estimated values.

The field duplicate triplicate CRP-SO-ARC3A/CRP-SO-ARC3B/CRP-SO-ARC3C exceeded a relative standard deviation (RSD) of 50% for the following semivolatile compound:

Compound	CRP-SO-ARC3A	CRP-SO-ARC3B	CRP-SO-ARC3C	RSD	Action	
	Result (µg/kg)	Result (µg/kg)	Result (µg/kg)		(+)	NDs
Chrysene	3000	1700	910	56.4	J	

The field triplicate RSD for chrysene exceeded the QC criterion; therefore, the project precision goals may be impacted due to sample heterogeneity. The affected positive results in samples CRP-SO-ARC3A, CRP-SO-ARC3B, and CRP-SO-ARC3C are usable as estimated values.

Analyte Identification/Quantitation

Pesticides

The relative percent difference (RPD) between the results of analytical columns 1 and 2 exceeded the 40% RPD QC criterion for the compounds in the following samples:

Sample	Analyte	%RPD	Action (+)
CRP-SB-RB01-051809	Gamma-chlordane	49.5	J
CRP-SB01-0608	4,4'-DDT	54.6	J
	Endosulfan sulfate	112.6	UJ at 2.5*
	Gamma-chlordane	50.8	J
CRP-SB01-2022	Alpha-BHC	126.4	UJ at 0.51*
	Beta-BHC	87.6	J
CRP-SB01-2628	4,4'-DDT	44.6	J

*Professional judgment was used to raise the sample reporting limit to the higher of the two results and qualify the value as estimated, non-detected (UJ).

Although the analyte quantitation relative percent differences exceeded the 40% RPD QC limit for gamma-chlordane, 4,4'-DDT, and beta-BHC in the samples listed above, the project accuracy goals are not impacted since the affected gamma-chlordane and 4,4'-DDT results are well below the project action limits and there are no regulatory limits established for beta-BHC. The positive results for the affected compounds in the affected samples are usable as estimated values.

Although analyte quantitation relative percent differences exceeded the 100% RPD QC limit for endosulfan sulfate and alpha-BHC in the samples listed above, the project sensitivity goals are not impacted by the elevated reporting limits in these samples since there are no regulatory limits established for these compounds for the soil samples. The results for the affected compounds in the affected samples are usable as estimated, non-detected values.

Reporting Limits

Results above the method detection limit (MDL) and below the quantitation limit (QL) are reported as estimated (J) due to uncertainty below the QL.

Semivolatiles

Blank actions were taken on bis(2-ethylhexyl)phthalate and caprolactam in the select samples due to method blank contamination. As described above in the Blanks section, the project sensitivity goals are not impacted.

Pesticides

The analyte quantitation relative percent differences exceeded the 100% RPD QC limit for endosulfan sulfate and alpha-BHC in select samples. As described in the Analyte Identification/Quantitation section, the project sensitivity goals are not impacted.

Data Usability Assessment

The data usability assessment was performed to determine if the data met the project data quality objectives for acceptable accuracy, precision, sensitivity and completeness; and to determine and define the impact of the exceeded quality control indicators on the technical usability of the data. Please refer to the specific sections in the above validation report for further details.

Volatiles

The project goals with respect to accuracy were met for the volatiles data set. Acetone was qualified as estimated in select samples due to a low initial calibration verification recovery. Acetone, 4-methyl-2-pentanone, 2-hexanone, and 2-butanone were qualified as estimated in select samples due to instrument calibration variability. Sample CRP-SB09-DUP02 was qualified as estimated due to poor internal standard performance. Compounds 1,1,2,2-Tetrachloroethane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and 1,2-dibromo-3-chloropropane were qualified as estimated in samples CRP-SB01-2628 Samples CRP-SB09-DUP02, CRP-SB09-1214, and CRP-SB01-2022 due to poor internal standard performance. Sample CRP-SB01-0608 was qualified as estimated due to low MS/MSD recoveries. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision, sensitivity, and completeness were met for the volatiles data set. Data usability was not impacted with regards to precision, sensitivity, and completeness.

Semivolatiles

The project goals with respect to accuracy were met for the semivolatiles data set with the following exception. Benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, dibenzo(a,h)anthracene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene were qualified as estimated in select samples due to poor internal standard performance. Although specific method criteria were not met in this instance, the affected positive and non-detected results are usable as estimated values and estimated quantitation limits which may have a minor impact on data usability. Additionally, hexachlorocyclopentadiene, 4-nitrophenol, atrazine, caprolactam, and di-n-octylphthalate were qualified as estimated in select samples due to instrument calibration variability. Butylbenzylphthalate, di-n-octylphthalate, and bis(2-ethylhexyl)phthalate were qualified as estimated in select samples due to poor internal standard performance. Benzo(a)anthracene and bis(2-ethylhexyl)phthalate were qualified as estimated in sample CRP-SB01-0608 due to high MS/MSD recoveries. Anthracene and n-nitrosodiphenylamine were qualified as estimated in select samples due to high LCS recoveries. Caprolactam was qualified as estimated in select samples due to low LCS recoveries. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision were met for the semivolatiles data set with the following exception. Several polycyclic aromatic hydrocarbons (PAH) compounds were qualified as estimated in the field triplicates CRP-SO-ARC1A/CRP-SO-ARC1B/CRP-SO-ARC1C, CRP-SO-ARC2A/CRP-SO-ARC2B/CRP-SO-ARC2C, and CRP-SO-ARC3A/CRP-SO-ARC3B/CRP-SO-ARC3C due to poor field triplicate precision. Although specific method criteria were not met in this instance, the affected positive results are usable as estimated values which may have a minor impact on data usability.

The project goals with respect to sensitivity and completeness were met for the semivolatiles data set. Data usability was not impacted with regards to sensitivity and completeness.

Pesticides

The project goals with respect to accuracy were met for the pesticides data set. Endrin aldehyde and endrin ketone were qualified as estimated in select samples due low LCS/LCSD recoveries. Gamma-chlordane, 4,4'-DDT, and beta-BHC were qualified as estimated in select samples due to analytical interferences detected in the dual column analysis. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision were met for the pesticides data set. Endrin aldehyde was qualified as estimated in select samples due to poor LCS/LCSD precision. Although specific method criteria were not met in this instance, data usability is not impacted and the affected non-detected result is usable as an estimated quantitation limits

The project goals with respect to sensitivity and completeness were met for the pesticides data set. Data usability was not impacted with regards to sensitivity and completeness.

PCBs

The project goals with respect to accuracy, precision, sensitivity, and completeness were met for the PCBs data set. Data usability was not impacted with regards to accuracy, precision, sensitivity, and completeness.

GRO

The project goals with respect to accuracy, precision, sensitivity, and completeness were met for the GRO data set. Data usability was not impacted with regards to accuracy, precision, sensitivity, and completeness.

DRO

The project goals with respect to accuracy were met for the DRO data set. DRO was qualified as estimated in samples CRP-SB09-DUP02 and CRP-SB01-0608 due to low surrogate recoveries. Although specific method criteria were not met in this instance, data usability is not impacted and the affected positive results are usable as estimated values.

The project goals with respect to precision were met for the DRO data set. DRO was qualified as estimated in select samples due to poor LCS/LCSD precision. Although specific method criteria were not met in this instance, data usability is not impacted and the affected positive results are usable as estimated values.

The project goals with respect to sensitivity and completeness were met for the DRO data set. Data usability was not impacted with regards to sensitivity and completeness.

Tables: Data Validation Qualifiers and Codes
Data Summary Tables

Enclosures: Data Validation Worksheets

Data Validation Qualifiers and Codes

Data Validation Qualifiers:

= No qualifier attached to value (positive hit)
J = Value is estimated
U = Value is not detected
UJ = Value is not detected and estimated
R = Value (positive hit) is not usable
UR = Value was reported as ND but is not usable

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0608			CRP-SB01-2022			CRP-SB01-2628			CRP-SB09-0608		
SDG: CARPT002	LAB_ID	0905178-01			0905178-02			0905178-03			0905162-01		
FRACTION: OV	SAMP_DATE	5/19/2009			5/19/2009			5/19/2009			5/18/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	81.2			97.4			92.6			86.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
1,1,2,2-TETRACHLOROETHANE		7.3	UJ	D	4.2	UJ	N	4.1	UJ	N	4.5	U	
1,1,2-TRICHLOROETHANE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
1,1-DICHLOROETHANE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
1,1-DICHLOROETHENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
1,2,4-TRICHLOROBENZENE		7.3	UJ	D	4.2	UJ	N	4.1	UJ	N	4.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		7.3	UJ	D	4.2	UJ	N	4.1	UJ	N	4.5	U	
1,2-DIBROMOETHANE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
1,2-DICHLOROBENZENE		7.3	UJ	D	4.2	UJ	N	4.1	UJ	N	4.5	U	
1,2-DICHLOROETHANE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
1,2-DICHLOROPROPANE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
1,3-DICHLOROBENZENE		7.3	UJ	D	4.2	UJ	N	4.1	UJ	N	4.5	U	
1,4-DICHLOROBENZENE		7.3	UJ	D	4.2	UJ	N	4.1	UJ	N	4.5	U	
2-BUTANONE		73	UJ	D	42	U		41	U		45	U	
2-HEXANONE		15	UJ	D	8.4	U		8.2	U		9	UJ	C
4-METHYL-2-PENTANONE		15	UJ	D	8.4	U		8.2	U		9	U	
ACETONE		73	UJ	D	42	U		5.4	J	P	1.8	UJ	C
BENZENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
BROMODICHLOROMETHANE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
BROMOFORM		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
BROMOMETHANE		15	UJ	D	8.4	U		8.2	U		9	U	
CARBON DISULFIDE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
CARBON TETRACHLORIDE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
CHLOROBENZENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
CHLORODIBROMOMETHANE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
CHLOROETHANE		15	UJ	D	8.4	U		8.2	U		9	U	
CHLOROFORM		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
CHLOROMETHANE		15	UJ	D	8.4	U		8.2	U		9	U	
CIS-1,2-DICHLOROETHENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
CIS-1,3-DICHLOROPROPENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
CYCLOHEXANE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
DICHLORODIFLUOROMETHANE		15	UJ	D	8.4	U		8.2	U		9	U	
ETHYLBENZENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
ISOPROPYLBENZENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
METHYL ACETATE		15	UJ	D	8.4	U		8.2	U		9	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB09-1214			CRP-SB09-3840			CRP-SB09-DUP02		
SDG: CARPT002	LAB_ID	0905162-04			0905162-03			0905162-02		
FRACTION: OV	SAMP_DATE	5/18/2009			5/18/2009			5/18/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			FD		
	UNITS	UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.2			86.1			84.9		
	DUP_OF							CRP-SB-9-3840		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		4.4	U		5	U		4.6	UJ	N
1,1,2,2-TETRACHLOROETHANE		4.4	UJ	N	5	U		4.6	UJ	N
1,1,2-TRICHLOROETHANE		4.4	U		5	U		4.6	UJ	N
1,1-DICHLOROETHANE		4.4	U		5	U		4.6	UJ	N
1,1-DICHLOROETHENE		4.4	U		5	U		4.6	UJ	N
1,2,4-TRICHLOROBENZENE		4.4	UJ	N	5	U		4.6	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE		4.4	UJ	N	5	U		4.6	UJ	N
1,2-DIBROMOETHANE		4.4	U		5	U		4.6	UJ	N
1,2-DICHLOROBENZENE		4.4	UJ	N	5	U		4.6	UJ	N
1,2-DICHLOROETHANE		4.4	U		5	U		4.6	UJ	N
1,2-DICHLOROPROPANE		4.4	U		5	U		4.6	UJ	N
1,3-DICHLOROBENZENE		4.4	UJ	N	5	U		4.6	UJ	N
1,4-DICHLOROBENZENE		4.4	UJ	N	5	U		4.6	UJ	N
2-BUTANONE		44	U		50	U		46	UJ	N
2-HEXANONE		8.8	UJ	C	10	UJ	C	9.2	UJ	N
4-METHYL-2-PENTANONE		8.8	U		10	U		9.2	UJ	N
ACETONE		1.8	UJ	C	2	UJ	C	1.8	UJ	CN
BENZENE		4.4	U		5	U		4.6	UJ	N
BROMODICHLOROMETHANE		4.4	U		5	U		4.6	UJ	N
BROMOFORM		4.4	U		5	U		4.6	UJ	N
BROMOMETHANE		8.8	U		10	U		9.2	UJ	N
CARBON DISULFIDE		4.4	U		5	U		4.6	UJ	N
CARBON TETRACHLORIDE		4.4	U		5	U		4.6	UJ	N
CHLOROBENZENE		4.4	U		5	U		4.6	UJ	N
CHLORODIBROMOMETHANE		4.4	U		5	U		4.6	UJ	N
CHLOROETHANE		8.8	U		10	U		9.2	UJ	N
CHLOROFORM		4.4	U		5	U		4.6	UJ	N
CHLOROMETHANE		8.8	U		10	U		9.2	UJ	N
CIS-1,2-DICHLOROETHENE		4.4	U		5	U		4.6	UJ	N
CIS-1,3-DICHLOROPROPENE		4.4	U		5	U		4.6	UJ	N
CYCLOHEXANE		4.4	U		5	U		4.6	UJ	N
DICHLORODIFLUOROMETHANE		8.8	U		10	U		9.2	UJ	N
ETHYLBENZENE		4.4	U		5	U		4.6	UJ	N
ISOPROPYLBENZENE		4.4	U		5	U		4.6	UJ	N
METHYL ACETATE		8.8	U		10	U		9.2	UJ	N

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0608			CRP-SB01-2022			CRP-SB01-2628			CRP-SB09-0608		
SDG: CARPT002	LAB_ID	0905178-01			0905178-02			0905178-03			0905162-01		
FRACTION: OV	SAMP_DATE	5/19/2009			5/19/2009			5/19/2009			5/18/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	81.2			97.4			92.6			86.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
METHYL TERT-BUTYL ETHER		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
METHYLENE CHLORIDE		15	UJ	D	8.4	U		8.2	U		9	U	
STYRENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
TETRACHLOROETHENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
TOLUENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
TOTAL XYLENES		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
TRANS-1,2-DICHLOROETHENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
TRANS-1,3-DICHLOROPROPENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
TRICHLOROETHENE		7.3	UJ	D	4.2	U		4.1	U		4.5	U	
TRICHLOROFLUOROMETHANE		15	UJ	D	8.4	U		8.2	U		9	U	
VINYL CHLORIDE		15	UJ	D	8.4	U		8.2	U		9	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB09-1214			CRP-SB09-3840			CRP-SB09-DUP02		
SDG: CARPT002	LAB_ID	0905162-04			0905162-03			0905162-02		
FRACTION: OV	SAMP_DATE	5/18/2009			5/18/2009			5/18/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			FD		
	UNITS	UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.2			86.1			84.9		
	DUP_OF							CRP-SB-9-3840		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		4.4	U		5	U		4.6	UJ	N
METHYL TERT-BUTYL ETHER		4.4	U		5	U		4.6	UJ	N
METHYLENE CHLORIDE		8.8	U		10	U		9.2	UJ	N
STYRENE		4.4	U		5	U		4.6	UJ	N
TETRACHLOROETHENE		4.4	U		5	U		4.6	UJ	N
TOLUENE		4.4	U		5	U		4.6	UJ	N
TOTAL XYLENES		4.4	U		5	U		4.6	UJ	N
TRANS-1,2-DICHLOROETHENE		4.4	U		5	U		4.6	UJ	N
TRANS-1,3-DICHLOROPROPENE		4.4	U		5	U		4.6	UJ	N
TRICHLOROETHENE		4.4	U		5	U		4.6	UJ	N
TRICHLOROFLUOROMETHANE		8.8	U		10	U		9.2	UJ	N
VINYL CHLORIDE		8.8	U		10	U		9.2	UJ	N

PROJ_NO: 00870	NSAMPLE	CRP-SB-FB01-051909			CRP-SB-RB01-051809			CRP-TB04-051809			CRP-TB05-051909		
SDG: CARPT002	LAB_ID	0905178-04			0905162-06			0905162-05			0905178-05		
FRACTION: OV	SAMP_DATE	5/19/2009			5/18/2009			5/18/2009			5/19/2009		
MEDIA: WATER	QC_TYPE	FB			RB			TB			TB		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5	U		5	U		5	U		5	U	
1,1,2,2-TETRACHLOROETHANE		5	U		5	U		5	U		5	U	
1,1,2-TRICHLOROETHANE		5	U		5	U		5	U		5	U	
1,1-DICHLOROETHANE		5	U		5	U		5	U		5	U	
1,1-DICHLOROETHENE		5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE		5	U		5	U		5	U		5	U	
1,2-DIBROMO-3-CHLOROPROPANE		5	U		5	U		5	U		5	U	
1,2-DIBROMOETHANE		5	U		5	U		5	U		5	U	
1,2-DICHLOROBENZENE		5	U		5	U		5	U		5	U	
1,2-DICHLOROETHANE		5	U		5	U		5	U		5	U	
1,2-DICHLOROPROPANE		5	U		5	U		5	U		5	U	
1,3-DICHLOROBENZENE		5	U		5	U		5	U		5	U	
1,4-DICHLOROBENZENE		5	U		5	U		5	U		5	U	
2-BUTANONE		50	UJ	C	50	UJ	C	50	UJ	C	50	UJ	C
2-HEXANONE		10	UJ	C	10	UJ	C	10	UJ	C	10	UJ	C
4-METHYL-2-PENTANONE		10	UJ	C	10	U		10	U		10	UJ	C
ACETONE		2.4	J	CP	50	UJ	C	50	UJ	C	50	UJ	C
BENZENE		5	U		5	U		5	U		5	U	
BROMODICHLOROMETHANE		5	U		5	U		5	U		5	U	
BROMOFORM		5	U		5	U		5	U		5	U	
BROMOMETHANE		10	U		10	U		10	U		10	U	
CARBON DISULFIDE		5	U		5	U		5	U		5	U	
CARBON TETRACHLORIDE		5	U		5	U		5	U		5	U	
CHLOROBENZENE		5	U		5	U		5	U		5	U	
CHLORODIBROMOMETHANE		5	U		5	U		5	U		5	U	
CHLOROETHANE		10	U		10	U		10	U		10	U	
CHLOROFORM		5	U		5	U		5	U		5	U	
CHLOROMETHANE		10	U		10	U		10	U		10	U	
CIS-1,2-DICHLOROETHENE		5	U		5	U		5	U		5	U	
CIS-1,3-DICHLOROPROPENE		5	U		5	U		5	U		5	U	
CYCLOHEXANE		5	U		5	U		5	U		5	U	
DICHLORODIFLUOROMETHANE		10	U		10	U		10	U		10	U	
ETHYLBENZENE		0.15	J	P	5	U		5	U		5	U	
ISOPROPYLBENZENE		5	U		5	U		5	U		5	U	
METHYL ACETATE		10	U		10	U		10	U		10	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-FB01-051909			CRP-SB-RB01-051809			CRP-TB04-051809			CRP-TB05-051909		
SDG: CARPT002	LAB_ID	0905178-04			0905162-06			0905162-05			0905178-05		
FRACTION: OV	SAMP_DATE	5/19/2009			5/18/2009			5/18/2009			5/19/2009		
MEDIA: WATER	QC_TYPE	FB			RB			TB			TB		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER		5	U		5	U		5	U		5	U	
METHYLENE CHLORIDE		0.85	J	P	0.46	J	P	10	U		10	U	
STYRENE		5	U		5	U		5	U		5	U	
TETRACHLOROETHENE		5	U		5	U		5	U		5	U	
TOLUENE		0.37	J	P	0.16	J	P	5	U		5	U	
TOTAL XYLENES		0.78	J	P	5	U		5	U		5	U	
TRANS-1,2-DICHLOROETHENE		5	U		5	U		5	U		5	U	
TRANS-1,3-DICHLOROPROPENE		5	U		5	U		5	U		5	U	
TRICHLOROETHENE		5	U		5	U		5	U		5	U	
TRICHLOROFLUOROMETHANE		10	U		10	U		10	U		10	U	
VINYL CHLORIDE		10	U		10	U		10	U		10	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0608			CRP-SB01-2022			CRP-SB01-2628			CRP-SB09-0608		
SDG: CARPT002	LAB_ID	0905178-01			0905178-02			0905178-03			0905162-01		
FRACTION: OS	SAMP_DATE	5/19/2009			5/19/2009			5/19/2009			5/18/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	81.2			97.4			92.6			86.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		410	U		340	U		360	U		390	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		820	U		680	U		720	U		780	U	
2,4,5-TRICHLOROPHENOL		410	U		340	U		360	U		390	U	
2,4,6-TRICHLOROPHENOL		410	U		340	U		360	U		390	U	
2,4-DICHLOROPHENOL		410	U		340	U		360	U		390	U	
2,4-DIMETHYLPHENOL		1600	U		1400	U		1400	U		1600	U	
2,4-DINITROPHENOL		4100	U		3400	U		3600	U		3900	U	
2,4-DINITROTOLUENE		410	U		340	U		360	U		390	U	
2,6-DINITROTOLUENE		410	U		340	U		360	U		390	U	
2-CHLORONAPHTHALENE		410	U		340	U		360	U		390	U	
2-CHLOROPHENOL		410	U		340	U		360	U		390	U	
2-METHYLNAPHTHALENE		410	U		340	U		360	U		390	U	
2-METHYLPHENOL		410	U		340	U		360	U		390	U	
2-NITROANILINE		1600	U		1400	U		1400	U		1600	U	
2-NITROPHENOL		410	U		340	U		360	U		390	U	
3,3'-DICHLOROBENZIDINE		410	U		340	U		360	U		390	U	
3-NITROANILINE		1600	U		1400	U		1400	U		1600	U	
4,6-DINITRO-2-METHYLPHENOL		1600	U		1400	U		1400	U		1600	U	
4-BROMOPHENYL PHENYL ETHER		410	U		340	U		360	U		390	U	
4-CHLORO-3-METHYLPHENOL		410	U		340	U		360	U		390	U	
4-CHLOROANILINE		410	U		340	U		360	U		390	U	
4-CHLOROPHENYL PHENYL ETHER		410	U		340	U		360	U		390	U	
4-METHYLPHENOL		410	U		340	U		360	U		390	U	
4-NITROANILINE		1600	U		1400	U		1400	U		1600	U	
4-NITROPHENOL		1600	U		1400	U		1400	U		1600	UJ	C
ACENAPHTHENE		410	U		340	U		360	U		390	U	
ACENAPHTHYLENE		410	U		340	U		360	U		390	U	
ACETOPHENONE		410	U		340	U		360	U		390	U	
ANTHRACENE		410	U		340	U		360	U		390	U	
ATRAZINE		410	U		340	U		360	U		390	U	
BENZALDEHYDE		410	U		340	U		360	U		390	U	
BENZO(A)ANTHRACENE		56	J	DP	340	U		360	U		390	U	
BENZO(A)PYRENE		82	U		68	U		72	U		27	J	NP
BENZO(B)FLUORANTHENE		53	J	P	340	U		360	U		390	U	
BENZO(G,H,I)PERYLENE		410	U		340	U		360	U		390	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB09-1214			CRP-SB09-3840			CRP-SB09-DUP02			CRP-SO-ARC1A		
SDG: CARPT002	LAB_ID	0905162-04			0905162-03			0905162-02			0905126-01		
FRACTION: OS	SAMP_DATE	5/18/2009			5/18/2009			5/18/2009			5/14/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			FD			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.2			86.1			84.9			75.2		
	DUP_OF							CRP-SB09-3840					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		360	U		390	U		390	U		200	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		730	U		770	U		780	U		340	U	
2,4,5-TRICHLOROPHENOL		360	U		390	U		390	U		180	U	
2,4,6-TRICHLOROPHENOL		360	U		390	U		390	U		230	U	
2,4-DICHLOROPHENOL		360	U		390	U		390	U		120	U	
2,4-DIMETHYLPHENOL		1500	U		1500	U		1600	U		140	U	
2,4-DINITROPHENOL		3600	U		3900	U		3900	U		890	U	
2,4-DINITROTOLUENE		360	U		390	U		390	U		160	U	
2,6-DINITROTOLUENE		360	U		390	U		390	U		250	U	
2-CHLORONAPHTHALENE		360	U		390	U		390	U		210	U	
2-CHLOROPHENOL		360	U		390	U		390	U		270	U	
2-METHYLNAPHTHALENE		360	U		390	U		390	U		230	U	
2-METHYLPHENOL		360	U		390	U		390	U		260	U	
2-NITROANILINE		1500	U		1500	U		1600	U		210	U	
2-NITROPHENOL		360	U		390	U		390	U		150	U	
3,3'-DICHLOROBENZIDINE		360	U		390	U		390	U		210	U	
3-NITROANILINE		1500	U		1500	U		1600	U		310	U	
4,6-DINITRO-2-METHYLPHENOL		1500	U		1500	U		1600	U		140	U	
4-BROMOPHENYL PHENYL ETHER		360	U		390	U		390	U		170	U	
4-CHLORO-3-METHYLPHENOL		360	U		390	U		390	U		180	U	
4-CHLOROANILINE		360	U		390	U		390	U		320	U	
4-CHLOROPHENYL PHENYL ETHER		360	U		390	U		390	U		200	U	
4-METHYLPHENOL		360	U		390	U		390	U		180	U	
4-NITROANILINE		1500	U		1500	U		1600	U		670	U	
4-NITROPHENOL		1500	UJ	C	1500	UJ	C	1600	UJ	C	540	U	
ACENAPHTHENE		360	U		390	U		390	U		2100	J	P
ACENAPHTHYLENE		360	U		390	U		390	U		130	U	
ACETOPHENONE		360	U		390	U		390	U		270	U	
ANTHRACENE		360	U		390	U		390	U		3400	J	E
ATRAZINE		360	U		390	U		390	U		190	UJ	C
BENZALDEHYDE		360	U		390	U		390	U		370	U	
BENZO(A)ANTHRACENE		360	U		390	U		390	U		19000	J	EG
BENZO(A)PYRENE		73	U		77	U		78	U		25000	J	G
BENZO(B)FLUORANTHENE		360	U		390	U		390	U		25000	J	G
BENZO(G,H,I)PERYLENE		360	U		390	U		390	U		19000	J	G

PROJ_NO: 00870	NSAMPLE	CRP-SO-ARC1B			CRP-SO-ARC1C			CRP-SO-ARC2A			CRP-SO-ARC2B		
SDG: CARPT002	LAB_ID	0905126-02			0905126-03			0905126-04			0905126-05		
FRACTION: OS	SAMP_DATE	5/14/2009			5/14/2009			5/14/2009			5/14/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	58.2			75.5			70.7			80.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		250	U		200	U		210	U		180	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		440	U		340	U		360	U		320	U	
2,4,5-TRICHLOROPHENOL		230	U		180	U		190	U		160	U	
2,4,6-TRICHLOROPHENOL		300	U		230	U		250	U		220	U	
2,4-DICHLOROPHENOL		160	U		120	U		130	U		120	U	
2,4-DIMETHYLPHENOL		180	U		140	U		150	U		130	U	
2,4-DINITROPHENOL		1100	U		880	U		940	U		820	U	
2,4-DINITROTOLUENE		210	U		160	U		170	U		150	U	
2,6-DINITROTOLUENE		320	U		250	U		270	U		230	U	
2-CHLORONAPHTHALENE		270	U		210	U		230	U		200	U	
2-CHLOROPHENOL		350	U		270	U		290	U		250	U	
2-METHYLNAPHTHALENE		300	U		230	U		250	U		220	U	
2-METHYLPHENOL		330	U		260	U		270	U		240	U	
2-NITROANILINE		280	U		210	U		230	U		200	U	
2-NITROPHENOL		190	U		150	U		160	U		140	U	
3,3'-DICHLOROBENZIDINE		270	U		210	U		220	U		190	U	
3-NITROANILINE		400	U		310	U		330	U		290	U	
4,6-DINITRO-2-METHYLPHENOL		190	U		140	U		150	U		140	U	
4-BROMOPHENYL PHENYL ETHER		220	U		170	U		180	U		160	U	
4-CHLORO-3-METHYLPHENOL		240	U		180	U		200	U		170	U	
4-CHLOROANILINE		410	U		320	U		340	U		300	U	
4-CHLOROPHENYL PHENYL ETHER		260	U		200	U		220	U		190	U	
4-METHYLPHENOL		230	U		180	U		190	U		160	U	
4-NITROANILINE		860	U		660	U		710	U		620	U	
4-NITROPHENOL		700	U		540	U		570	U		500	U	
ACENAPHTHENE		630	J	P	820	J	P	460	J	P	260	J	P
ACENAPHTHYLENE		170	U		130	U		140	U		120	U	
ACETOPHENONE		350	U		270	U		290	U		250	U	
ANTHRACENE		1000	J	EP	1300	J	EP	810	J	EP	380	J	EP
ATRAZINE		240	UJ	C	190	UJ	C	200	UJ	C	180	UJ	C
BENZALDEHYDE		480	U		370	U		390	U		340	U	
BENZO(A)ANTHRACENE		5800	J	EG	7400	J	EG	4400	J	E	2300	J	E
BENZO(A)PYRENE		8100	J	G	10000	J	GN	6100			3400		
BENZO(B)FLUORANTHENE		9200	J	G	11000	J	GN	6300			3700		
BENZO(G,H,I)PERYLENE		4800	J	G	7100	J	GN	4700			2600		

PROJ_NO: 00870	NSAMPLE	CRP-SO-ARC2C			CRP-SO-ARC3A			CRP-SO-ARC3B			CRP-SO-ARC3C		
SDG: CARPT002	LAB_ID	0905126-06			0905126-07			0905126-08			0905126-09		
FRACTION: OS	SAMP_DATE	5/14/2009			5/14/2009			5/14/2009			5/14/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	73.4			80.3			69.6			81.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		200	U		180	U		210	U		180	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		350	U		320	U		370	U		320	U	
2,4,5-TRICHLOROPHENOL		180	U		170	U		190	U		160	U	
2,4,6-TRICHLOROPHENOL		240	U		220	U		250	U		210	U	
2,4-DICHLOROPHENOL		130	U		120	U		140	U		120	U	
2,4-DIMETHYLPHENOL		140	U		130	U		150	U		130	U	
2,4-DINITROPHENOL		910	U		830	U		960	U		820	U	
2,4-DINITROTOLUENE		160	U		150	U		170	U		150	U	
2,6-DINITROTOLUENE		260	U		240	U		270	U		230	U	
2-CHLORONAPHTHALENE		220	U		200	U		230	U		200	U	
2-CHLOROPHENOL		280	U		250	U		290	U		250	U	
2-METHYLNAPHTHALENE		240	U		220	U		250	U		220	U	
2-METHYLPHENOL		260	U		240	U		280	U		240	U	
2-NITROANILINE		220	U		200	U		230	U		200	U	
2-NITROPHENOL		150	U		140	U		160	U		140	U	
3,3'-DICHLOROBENZIDINE		210	U		200	U		230	U		190	U	
3-NITROANILINE		320	U		290	U		340	U		290	U	
4,6-DINITRO-2-METHYLPHENOL		150	U		140	U		160	U		130	U	
4-BROMOPHENYL PHENYL ETHER		180	U		160	U		180	U		160	U	
4-CHLORO-3-METHYLPHENOL		190	U		170	U		200	U		170	U	
4-CHLOROANILINE		330	U		300	U		340	U		300	U	
4-CHLOROPHENYL PHENYL ETHER		210	U		190	U		220	U		190	U	
4-METHYLPHENOL		180	U		160	U		190	U		160	U	
4-NITROANILINE		680	U		620	U		720	U		620	U	
4-NITROPHENOL		550	U		500	U		580	U		500	U	
ACENAPHTHENE		290	J	P	260	J	P	190	U		160	U	
ACENAPHTHYLENE		130	U		120	U		140	U		120	U	
ACETOPHENONE		280	U		260	U		290	U		250	U	
ANTHRACENE		500	J	EP	400	J	EP	200	U		170	U	
ATRAZINE		190	UJ	C	180	UJ	C	200	UJ	C	170	UJ	C
BENZALDEHYDE		380	U		340	U		400	U		340	U	
BENZO(A)ANTHRACENE		2900	J	E	2300	J	E	1300	J	EP	660	J	EP
BENZO(A)PYRENE		4300			3600	J	N	2100	J	N	1300	J	N
BENZO(B)FLUORANTHENE		4900			4100	J	N	2200	J	NP	190	UJ	N
BENZO(G,H,I)PERYLENE		2500			2500	J	N	1500	J	NP	1000	J	NP

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0608			CRP-SB01-2022			CRP-SB01-2628			CRP-SB09-0608		
SDG: CARPT002	LAB_ID	0905178-01			0905178-02			0905178-03			0905162-01		
FRACTION: OS	SAMP_DATE	5/19/2009			5/19/2009			5/19/2009			5/18/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	81.2			97.4			92.6			86.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		410	U		340	U		360	U		390	U	
BIS(2-CHLOROETHOXY)METHANE		410	U		340	U		360	U		390	U	
BIS(2-CHLOROETHYL)ETHER		410	U		340	U		360	U		390	U	
BIS(2-ETHYLHEXYL)PHTHALATE		44	J	DP	340	U		360	U		48	J	NP
BUTYL BENZYL PHTHALATE		410	U		340	U		360	U		390	U	
CAPROLACTAM		410	U		340	U		360	U		390	U	
CARBAZOLE		820	U		680	U		720	U		780	U	
CHRYSENE		54	J	P	68	U		72	U		78	U	
DIBENZO(A,H)ANTHRACENE		82	U		68	U		72	U		78	U	
DIBENZOFURAN		410	U		340	U		360	U		390	U	
DIETHYL PHTHALATE		410	U		340	U		360	U		390	U	
DIMETHYL PHTHALATE		410	U		340	U		360	U		390	U	
DI-N-BUTYL PHTHALATE		410	U		340	U		360	U		390	U	
DI-N-OCTYL PHTHALATE		410	U		340	U		360	U		390	U	
FLUORANTHENE		110	J	P	340	U		360	U		390	U	
FLUORENE		410	U		340	U		360	U		390	U	
HEXACHLOROBENZENE		82	U		68	U		72	U		78	U	
HEXACHLOROBUTADIENE		410	U		340	U		360	U		390	U	
HEXACHLOROCYCLOPENTADIENE		410	UJ	C	340	UJ	C	360	UJ	C	390	UJ	C
HEXACHLOROETHANE		820	U		680	U		720	U		780	U	
INDENO(1,2,3-CD)PYRENE		410	U		340	U		360	U		390	U	
ISOPHORONE		410	U		340	U		360	U		390	U	
NAPHTHALENE		410	U		340	U		360	U		390	U	
NITROBENZENE		410	U		340	U		360	U		390	U	
N-NITROSO-DI-N-PROPYLAMINE		410	U		340	U		360	U		390	U	
N-NITROSODIPHENYLAMINE		410	U		340	U		360	U		390	U	
PENTACHLOROPHENOL		1600	U		1400	U		1400	U		1600	U	
PHENANTHRENE		72	J	P	340	U		360	U		390	U	
PHENOL		410	U		340	U		360	U		390	U	
PYRENE		93	J	P	340	U		360	U		390	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB09-1214			CRP-SB09-3840			CRP-SB09-DUP02			CRP-SO-ARC1A		
SDG: CARPT002	LAB_ID	0905162-04			0905162-03			0905162-02			0905126-01		
FRACTION: OS	SAMP_DATE	5/18/2009			5/18/2009			5/18/2009			5/14/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			FD			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.2			86.1			84.9			75.2		
	DUP_OF							CRP-SB09-3840					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		360	U		390	U		390	U		10000	J	G
BIS(2-CHLOROETHOXY)METHANE		360	U		390	U		390	U		200	U	
BIS(2-CHLOROETHYL)ETHER		360	U		390	U		390	U		270	U	
BIS(2-ETHYLHEXYL)PHTHALATE		60	J	NP	62	J	P	65	J	NP	240	U	
BUTYL BENZYL PHTHALATE		360	U		51	J	P	47	J	NP	200	U	
CAPROLACTAM		79	J	P	390	U		390	U		450	UJ	C
CARBAZOLE		730	U		770	U		780	U		2300	J	P
CHRYSENE		73	U		77	U		78	U		22000	J	EG
DIBENZO(A,H)ANTHRACENE		73	U		77	U		78	U		5000		
DIBENZOFURAN		360	U		390	U		390	U		750	J	P
DIETHYL PHTHALATE		360	U		390	U		390	U		220	U	
DIMETHYL PHTHALATE		360	U		390	U		390	U		200	U	
DI-N-BUTYL PHTHALATE		360	U		390	U		390	U		200	U	
DI-N-OCTYL PHTHALATE		360	U		390	U		390	U		180	UJ	C
FLUORANTHENE		360	U		390	U		390	U		24000	J	EG
FLUORENE		360	U		390	U		390	U		1200	J	P
HEXACHLOROBENZENE		73	U		77	U		78	U		230	U	
HEXACHLOROBUTADIENE		360	U		390	U		390	U		220	U	
HEXACHLOROCYCLOPENTADIENE		360	UJ	C	390	UJ	C	390	UJ	C	410	U	
HEXACHLOROETHANE		730	U		770	U		780	U		260	U	
INDENO(1,2,3-CD)PYRENE		360	U		390	U		390	U		19000	J	G
ISOPHORONE		360	U		390	U		390	U		190	U	
NAPHTHALENE		360	U		390	U		390	U		520	J	P
NITROBENZENE		360	U		390	U		390	U		230	U	
N-NITROSO-DI-N-PROPYLAMINE		360	U		390	U		390	U		360	U	
N-NITROSODIPHENYLAMINE		360	U		390	U		390	U		920	J	EP
PENTACHLOROPHENOL		1500	U		1500	U		1600	U		220	U	
PHENANTHRENE		360	U		390	U		390	U		14000	J	G
PHENOL		360	U		390	U		390	U		240	U	
PYRENE		360	U		390	U		390	U		28000	J	G

PROJ_NO: 00870	NSAMPLE	CRP-SO-ARC1B			CRP-SO-ARC1C			CRP-SO-ARC2A			CRP-SO-ARC2B		
SDG: CARPT002	LAB_ID	0905126-02			0905126-03			0905126-04			0905126-05		
FRACTION: OS	SAMP_DATE	5/14/2009			5/14/2009			5/14/2009			5/14/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	58.2			75.5			70.7			80.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		3300	J	G	4000	J	GN	2200	J	P	1300	J	P
BIS(2-CHLOROETHOXY)METHANE		260	U		200	U		220	U		190	U	
BIS(2-CHLOROETHYL)ETHER		350	U		270	U		290	U		250	U	
BIS(2-ETHYLHEXYL)PHTHALATE		310	U		240	U		260	U		220	U	
BUTYL BENZYL PHTHALATE		260	U		200	U		210	U		180	U	
CAPROLACTAM		580	UJ	C	450	UJ	C	480	UJ	C	420	UJ	C
CARBAZOLE		630	J	P	830	J	P	260	U		280	J	P
CHRYSENE		7200	J	EG	9300	J	EG	5800	J	E	2800	J	E
DIBENZO(A,H)ANTHRACENE		2300			2500	J	N	2100	J	G	370	UJ	G
DIBENZOFURAN		210	J	P	300	J	P	180	J	P	150	U	
DIETHYL PHTHALATE		290	U		220	U		240	U		210	U	
DIMETHYL PHTHALATE		260	U		200	U		220	U		190	U	
DI-N-BUTYL PHTHALATE		260	U		200	U		210	U		190	U	
DI-N-OCTYL PHTHALATE		230	UJ	C	180	UJ	CN	190	UJ	C	170	UJ	C
FLUORANTHENE		8400	J	EG	9500	J	EG	6300	J	E	3600	J	E
FLUORENE		350	J	P	460	J	P	180	U		160	U	
HEXACHLOROBENZENE		300	U		230	U		240	U		210	U	
HEXACHLOROBUTADIENE		280	U		220	U		230	U		200	U	
HEXACHLOROCYCLOPENTADIENE		530	U		400	U		430	U		380	U	
HEXACHLOROETHANE		340	U		260	U		280	U		240	U	
INDENO(1,2,3-CD)PYRENE		5300	J	G	7100	J	GN	5000			2900		
ISOPHORONE		240	U		190	U		200	U		180	U	
NAPHTHALENE		280	U		240	J	P	230	U		200	U	
NITROBENZENE		300	U		230	U		240	U		210	U	
N-NITROSO-DI-N-PROPYLAMINE		470	U		360	U		390	U		340	U	
N-NITROSODIPHENYLAMINE		450	J	EP	560	J	EP	420	J	EP	200	U	
PENTACHLOROPHENOL		290	U		220	U		240	U		210	U	
PHENANTHRENE		4600	J	G	5600	J	G	3600			1900	J	P
PHENOL		310	U		240	U		250	U		220	U	
PYRENE		8100	J	G	12000	J	G	6100			3500		

PROJ_NO: 00870	NSAMPLE	CRP-SO-ARC2C			CRP-SO-ARC3A			CRP-SO-ARC3B			CRP-SO-ARC3C		
SDG: CARPT002	LAB_ID	0905126-06			0905126-07			0905126-08			0905126-09		
FRACTION: OS	SAMP_DATE	5/14/2009			5/14/2009			5/14/2009			5/14/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	73.4			80.3			69.6			81.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		1600	J	P	1500	J	NP	500	J	NP	240	UJ	N
BIS(2-CHLOROETHOXY)METHANE		210	U		190	U		220	U		190	U	
BIS(2-CHLOROETHYL)ETHER		280	U		250	U		290	U		250	U	
BIS(2-ETHYLHEXYL)PHTHALATE		250	U		220	U		260	U		220	U	
BUTYL BENZYL PHTHALATE		200	U		180	U		210	U		180	U	
CAPROLACTAM		460	UJ	C	420	UJ	C	480	UJ	C	420	UJ	C
CARBAZOLE		310	J	P	280	J	P	260	U		220	U	
CHRYSENE		3700	J	E	3000	J	EG	1700	J	EG	910	J	EG
DIBENZO(A,H)ANTHRACENE		410	UJ	G	370	UJ	N	430	UJ	N	370	UJ	N
DIBENZOFURAN		170	U		150	U		180	U		150	U	
DIETHYL PHTHALATE		230	U		210	U		240	U		210	U	
DIMETHYL PHTHALATE		210	U		190	U		220	U		190	U	
DI-N-BUTYL PHTHALATE		210	U		190	U		220	U		190	U	
DI-N-OCTYL PHTHALATE		180	UJ	C	170	UJ	CN	190	UJ	CN	160	UJ	CN
FLUORANTHENE		4200	J	E	3400	J	E	1800	J	EP	910	J	EP
FLUORENE		180	U		160	U		190	U		160	U	
HEXACHLOROBENZENE		240	U		220	U		250	U		210	U	
HEXACHLOROBUTADIENE		220	U		200	U		240	U		200	U	
HEXACHLOROCYCLOPENTADIENE		420	U		380	U		440	U		380	U	
HEXACHLOROETHANE		270	U		240	U		280	U		240	U	
INDENO(1,2,3-CD)PYRENE		3000			2900	J	N	330	UJ	N	280	UJ	N
ISOPHORONE		190	U		180	U		200	U		170	U	
NAPHTHALENE		220	U		200	U		230	U		200	U	
NITROBENZENE		240	U		220	U		250	U		210	U	
N-NITROSO-DI-N-PROPYLAMINE		370	U		340	U		390	U		340	U	
N-NITROSODIPHENYLAMINE		500	J	EP	200	U		230	U		200	U	
PENTACHLOROPHENOL		230	U		210	U		240	U		210	U	
PHENANTHRENE		2400			1900	J	P	920	J	P	450	J	P
PHENOL		240	U		220	U		260	U		220	U	
PYRENE		4300			4200			2300	J	P	1300	J	P

PROJ_NO: 00870	NSAMPLE	CRP-SB-FB01-051909			CRP-SB-RB01-051809		
SDG: CARPT002	LAB_ID	0905178-04			0905162-06		
FRACTION: OS	SAMP_DATE	5/19/2009			5/18/2009		
MEDIA: WATER	QC_TYPE	FB			RB		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS						
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		4.9	U		4.7	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		9.8	U		9.4	U	
2,4,5-TRICHLOROPHENOL		4.9	U		4.7	U	
2,4,6-TRICHLOROPHENOL		4.9	U		4.7	U	
2,4-DICHLOROPHENOL		4.9	U		4.7	U	
2,4-DIMETHYLPHENOL		20	U		19	U	
2,4-DINITROPHENOL		49	U		47	U	
2,4-DINITROTOLUENE		4.9	U		4.7	U	
2,6-DINITROTOLUENE		4.9	U		4.7	U	
2-CHLORONAPHTHALENE		4.9	U		4.7	U	
2-CHLOROPHENOL		4.9	U		4.7	U	
2-METHYLNAPHTHALENE		4.9	U		4.7	U	
2-METHYLPHENOL		4.9	U		4.7	U	
2-NITROANILINE		20	U		19	U	
2-NITROPHENOL		4.9	U		4.7	U	
3,3'-DICHLOROBENZIDINE		4.9	U		4.7	U	
3-NITROANILINE		20	U		19	U	
4,6-DINITRO-2-METHYLPHENOL		20	U		19	U	
4-BROMOPHENYL PHENYL ETHER		4.9	U		4.7	U	
4-CHLORO-3-METHYLPHENOL		4.9	U		4.7	U	
4-CHLOROANILINE		4.9	U		4.7	U	
4-CHLOROPHENYL PHENYL ETHER		4.9	U		4.7	U	
4-METHYLPHENOL		4.9	U		4.7	U	
4-NITROANILINE		20	U		19	U	
4-NITROPHENOL		20	U		19	UJ	C
ACENAPHTHENE		4.9	U		4.7	U	
ACENAPHTHYLENE		4.9	U		4.7	U	
ACETOPHENONE		4.9	U		4.7	U	
ANTHRACENE		4.9	U		4.7	U	
ATRAZINE		4.9	U		4.7	U	
BENZALDEHYDE		4.9	U		4.7	U	
BENZO(A)ANTHRACENE		4.9	U		4.7	U	
BENZO(A)PYRENE		0.98	U		0.94	U	
BENZO(B)FLUORANTHENE		4.9	U		4.7	U	
BENZO(G,H,I)PERYLENE		4.9	U		4.7	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-FB01-051909			CRP-SB-RB01-051809		
SDG: CARPT002	LAB_ID	0905178-04			0905162-06		
FRACTION: OS	SAMP_DATE	5/19/2009			5/18/2009		
MEDIA: WATER	QC_TYPE	FB			RB		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS						
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		4.9	U		4.7	U	
BIS(2-CHLOROETHOXY)METHANE		4.9	U		4.7	U	
BIS(2-CHLOROETHYL)ETHER		4.9	U		4.7	U	
BIS(2-ETHYLHEXYL)PHTHALATE		4.9	U		4.7	U	
BUTYL BENZYL PHTHALATE		4.9	U		4.7	U	
CAPROLACTAM		4.9	UJ	AE	4.7	UJ	AE
CARBAZOLE		9.8	U		9.4	U	
CHRYSENE		2.9	U		2.8	U	
DIBENZO(A,H)ANTHRACENE		4.9	U		4.7	U	
DIBENZOFURAN		4.9	U		4.7	U	
DIETHYL PHTHALATE		4.9	U		4.7	U	
DIMETHYL PHTHALATE		4.9	U		4.7	U	
DI-N-BUTYL PHTHALATE		4.9	U		4.7	U	
DI-N-OCTYL PHTHALATE		4.9	U		4.7	U	
FLUORANTHENE		4.9	U		4.7	U	
FLUORENE		4.9	U		4.7	U	
HEXACHLOROBENZENE		0.98	U		0.94	U	
HEXACHLOROBUTADIENE		4.9	U		4.7	U	
HEXACHLOROCYCLOPENTADIENE		4.9	UJ	C	4.7	UJ	C
HEXACHLOROETHANE		9.8	U		9.4	U	
INDENO(1,2,3-CD)PYRENE		4.9	U		4.7	U	
ISOPHORONE		4.9	U		4.7	U	
NAPHTHALENE		4.9	U		4.7	U	
NITROBENZENE		4.9	U		4.7	U	
N-NITROSO-DI-N-PROPYLAMINE		4.9	U		4.7	U	
N-NITROSODIPHENYLAMINE		4.9	U		4.7	U	
PENTACHLOROPHENOL		20	U		19	U	
PHENANTHRENE		4.9	U		4.7	U	
PHENOL		4.9	U		4.7	U	
PYRENE		4.9	U		4.7	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0608			CRP-SB01-2022			CRP-SB01-2628			CRP-SB09-0608		
SDG: CARPT002	LAB_ID	0905178-01RE1			0905178-02			0905178-03			0905162-01		
FRACTION: PEST/PCB	SAMP_DATE	5/19/2009			5/19/2009			5/19/2009			5/18/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	81.2			97.4			92.6			86.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.82	U		0.68	U		0.72	U		0.78	U	
4,4'-DDE		0.82	U		0.68	U		0.72	U		0.78	U	
4,4'-DDT		0.74	J	PU	0.68	U		0.48	J	PU	0.78	U	
ALDRIN		0.41	U		0.34	U		0.36	U		0.39	U	
ALPHA-BHC		0.41	U		0.51	UJ	PU	0.36	U		0.39	U	
ALPHA-CHLORDANE		0.41	U		0.34	U		0.36	U		0.39	U	
AROCLOR-1016		20	U		17	U		18	U		19	U	
AROCLOR-1221		20	U		17	U		18	U		19	U	
AROCLOR-1232		20	U		17	U		18	U		19	U	
AROCLOR-1242		20	U		17	U		18	U		19	U	
AROCLOR-1248		20	U		17	U		18	U		19	U	
AROCLOR-1254		20	U		17	U		18	U		19	U	
AROCLOR-1260		9.8	J	P	17	U		18	U		19	U	
BETA-BHC		0.41	U		0.16	J	PU	0.36	U		0.39	U	
DELTA-BHC		0.41	U		0.34	U		0.36	U		0.39	U	
DIELDRIN		0.82	U		0.68	U		0.72	U		0.78	U	
ENDOSULFAN I		0.41	U		0.34	U		0.36	U		0.39	U	
ENDOSULFAN II		0.8	J	P	0.4	J	P	1.8			1.3		
ENDOSULFAN SULFATE		2.5	UJ	U	0.68	U		0.72	U		0.78	U	
ENDRIN		0.82	U		0.68	U		0.72	U		0.78	U	
ENDRIN ALDEHYDE		0.82	U		0.68	U		0.72	U		0.78	U	
ENDRIN KETONE		0.82	U		0.68	U		0.72	U		0.78	U	
GAMMA-BHC (LINDANE)		0.41	U		0.34	U		0.36	U		0.39	U	
GAMMA-CHLORDANE		0.24	J	PU	0.34	U		0.26	J	P	0.39	U	
HEPTACHLOR		0.41	U		0.34	U		0.36	U		0.39	U	
HEPTACHLOR EPOXIDE		0.41	U		0.34	U		0.36	U		0.39	U	
METHOXYCHLOR		0.41	U		0.34	U		0.36	U		0.39	U	
TOXAPHENE		41	U		34	U		36	U		39	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB09-1214			CRP-SB09-3840			CRP-SB09-DUP02		
SDG: CARPT002	LAB_ID	0905162-04			0905162-03			0905162-02		
FRACTION: PEST/PCB	SAMP_DATE	5/18/2009			5/18/2009			5/18/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			FD		
	UNITS	UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.2			86.1			84.9		
	DUP_OF							CRP-SB09-3840		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.73	U		0.77	U		0.78	U	
4,4'-DDE		0.73	U		0.77	U		0.78	U	
4,4'-DDT		0.73	U		0.77	U		0.78	U	
ALDRIN		0.36	U		0.39	U		0.39	U	
ALPHA-BHC		0.36	U		0.39	U		0.39	U	
ALPHA-CHLORDANE		0.36	U		0.39	U		0.39	U	
AROCLOR-1016		18	U		19	U		20	U	
AROCLOR-1221		18	U		19	U		20	U	
AROCLOR-1232		18	U		19	U		20	U	
AROCLOR-1242		18	U		19	U		20	U	
AROCLOR-1248		18	U		19	U		20	U	
AROCLOR-1254		18	U		19	U		20	U	
AROCLOR-1260		18	U		19	U		20	U	
BETA-BHC		0.36	U		0.39	U		0.39	U	
DELTA-BHC		0.36	U		0.39	U		0.39	U	
DIELDRIN		0.73	U		0.77	U		0.78	U	
ENDOSULFAN I		0.36	U		0.39	U		0.39	U	
ENDOSULFAN II		1.7			2.8			3		
ENDOSULFAN SULFATE		0.73	U		0.77	U		0.78	U	
ENDRIN		0.73	U		0.77	U		0.78	U	
ENDRIN ALDEHYDE		0.73	U		0.77	U		0.78	U	
ENDRIN KETONE		0.73	U		0.77	U		0.78	U	
GAMMA-BHC (LINDANE)		0.36	U		0.39	U		0.39	U	
GAMMA-CHLORDANE		0.36	U		0.39	U		0.39	U	
HEPTACHLOR		0.36	U		0.39	U		0.39	U	
HEPTACHLOR EPOXIDE		0.36	U		0.39	U		0.39	U	
METHOXYCHLOR		0.36	U		0.39	U		0.39	U	
TOXAPHENE		36	U		39	U		39	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-FB01-051909			CRP-SB-RB01-051809		
SDG: CARPT002	LAB_ID	0905178-04			0905162-06		
FRACTION: PEST/PCB	SAMP_DATE	5/19/2009			5/18/2009		
MEDIA: WATER	QC_TYPE	FB			RB		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS						
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.021	U		0.021	U	
4,4'-DDE		0.021	U		0.021	U	
4,4'-DDT		0.021	U		0.021	U	
ALDRIN		0.01	U		0.011	U	
ALPHA-BHC		0.01	U		0.011	U	
ALPHA-CHLORDANE		0.01	U		0.011	U	
AROCLOR-1016		0.52	U		0.53	U	
AROCLOR-1221		0.52	U		0.53	U	
AROCLOR-1232		0.52	U		0.53	U	
AROCLOR-1242		0.52	U		0.53	U	
AROCLOR-1248		0.52	U		0.53	U	
AROCLOR-1254		0.52	U		0.53	U	
AROCLOR-1260		0.52	U		0.53	U	
BETA-BHC		0.01	U		0.011	U	
DELTA-BHC		0.01	U		0.011	U	
DIELDRIN		0.021	U		0.021	U	
ENDOSULFAN I		0.01	U		0.011	U	
ENDOSULFAN II		0.021	U		0.021	U	
ENDOSULFAN SULFATE		0.021	U		0.021	U	
ENDRIN		0.021	U		0.021	U	
ENDRIN ALDEHYDE		0.021	UJ	E	0.021	UJ	E
ENDRIN KETONE		0.021	UJ	E	0.021	UJ	E
GAMMA-BHC (LINDANE)		0.01	U		0.011	U	
GAMMA-CHLORDANE		0.01	U		0.01	J	PU
HEPTACHLOR		0.012			0.011	U	
HEPTACHLOR EPOXIDE		0.01	U		0.011	U	
METHOXYCHLOR		0.01	U		0.011	U	
TOXAPHENE		1	U		1.1	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0608			CRP-SB01-2022			CRP-SB01-2628			CRP-SB09-0608		
SDG: CARPT002	LAB_ID	0905178-01			0905178-02			0905178-03			0905162-01		
FRACTION: PET	SAMP_DATE	5/19/2009			5/19/2009			5/19/2009			5/18/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	81.2			97.4			92.6			86.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		17	J	R	13			7.7			9		
GASOLINE RANGE ORGANICS		3.2	U		3.8			11			51		

PROJ_NO: 00870	NSAMPLE	CRP-SB09-1214			CRP-SB09-3840			CRP-SB09-DUP02		
SDG: CARPT002	LAB_ID	0905162-04			0905162-03			0905162-02		
FRACTION: PET	SAMP_DATE	5/18/2009			5/18/2009			5/18/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			FD		
	UNITS	MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	91.2			86.1			84.9		
	DUP_OF							CRP-SB09-3840		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		8.9			9.3			7.6	J	R
GASOLINE RANGE ORGANICS		4.3			4.4			6.8		

PROJ_NO: 00870	NSAMPLE	CRP-SB-FB01-051909			CRP-SB-RB01-051809			CRP-TB05-051909		
SDG: CARPT002	LAB_ID	0905178-04			0905162-06			0905178-05		
FRACTION: PET	SAMP_DATE	5/19/2009			5/18/2009			5/19/2009		
MEDIA: WATER	QC_TYPE	FB			RB			TB		
	UNITS	MG/L			MG/L			MG/L		
	PCT_SOLIDS									
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		0.23	J	E	0.33	J	E			
GASOLINE RANGE ORGANICS		0.055	U		0.055	U		0.055	U	

TETRA TECH

INTERNAL CORRESPONDENCE

C-NAVY-08-09-3258W

Date: August 4, 2009

c: File G00870-4.10 (w/enc.-original)
T. Campbell (scan, w/o enc.)

To: Steve Parker (scan, w/o enc.)

From: Jennifer Cardinal (no copy) JC (for)

Subject: Tier II Organic Data Validation, SDG CARPT006
Empirical Laboratories, LLC
CTO 406, MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island

PAH:

6/Sediments/	CRP-SD05-0006	CRP-SD06-0006	CRP-SD06-0612
	CRP-SD07-0006	CRP-SD07-0612	CRP-SD-DUP01

(Field Duplicate Pairs: CRP-SD06-0006/CRP-SD-DUP01)

1/Rinsate Blank/ CRP-SD-RB01-061609

Tetra Tech NUS, Inc. (TtNUS) performed a Tier II data validation on the polycyclic aromatic hydrocarbons (PAH) analytical data for the sediment samples collected by TtNUS at MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island from June 15-16, 2009. Sample collection and analysis was performed according to the approved Work Plan and Quality Assurance Project Plan for MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island, dated April 2009.

The PAH analysis was performed according to USEPA SW-846 Method 8270C. The PAH data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996.

The sample results, validation qualifiers (VQ), and qualifier codes (QLCD) are presented in the enclosed data summary tables. A list of the qualifier codes, which provide the reasons for the validation qualifiers, is enclosed.

The data were evaluated based on the following parameters:

* • Data Completeness
* • Preservation and Technical Holding Times
* • GC/MS Instrument Performance Check (Tuning)
* • Initial and Continuing Calibrations
* • Blanks
* • Surrogate Compounds
* • Internal Standards
* • Matrix Spike/Matrix Spike Duplicate
* • Laboratory Control Sample/Laboratory Control Sample Duplicate
* • Field Duplicates
* • Percent Solids
* • Reporting Limits

* All criteria were met for this parameter.

Tetra Tech NUS, Inc.
55 Jonspin Road, Wilmington, MA 01887-1020
Tel 978.474.8400 Fax 978.474.8499 www.ttnus.com

Reporting Limits

Results above the method detection limit (MDL) and below the quantitation limit (QL) are reported as estimated (J) due to uncertainty below the QL.

Data Usability Assessment

The data usability assessment was performed to determine if the data met the project data quality objectives for acceptable accuracy, precision, sensitivity and completeness; and to determine and define the impact of the exceeded quality control indicators on the technical usability of the data. Please refer to the specific sections in the above validation report for further details.

The project goals with respect to accuracy, precision, sensitivity, and completeness were met for the PAH data set. Data usability was not impacted with regards to accuracy, precision, sensitivity, and completeness.

Tables: Data Validation Qualifiers and Codes
Data Summary Tables

Enclosures: Data Validation Worksheets

Data Validation Qualifiers and Codes

Data Validation Qualifiers:

	=	No qualifier attached to value (positive hit)
J	=	Value is estimated
U	=	Value is not detected
UJ	=	Value is not detected and estimated
R	=	Value (positive hit) is not usable
UR	=	Value was reported as ND but is not usable

Qualifier Codes:

A	=	Lab Blank Contamination
B	=	Field Blank Contamination
C	=	Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01	=	GC/MS Tuning Noncompliance
D	=	MS/MSD Recovery Noncompliance
E	=	LCS/LCSD Recovery Noncompliance
F	=	Lab Duplicate Imprecision
G	=	Field Duplicate Imprecision
H	=	Holding Time Exceedance
I	=	ICP Serial Dilution Noncompliance
J	=	GFAA PDS - GFAA MSA's $r < 0.995$
K	=	ICP Interference - includes ICS % R Noncompliance
L	=	Instrument Calibration Range Exceedance
M	=	Sample Preservation Noncompliance
N	=	Internal Standard Noncompliance
N01	=	Internal Standard Recovery Noncompliance Dioxins
N02	=	Recovery Standard Noncompliance Dioxins
N03	=	Clean-up Standard Noncompliance Dioxins
O	=	Poor Instrument Performance (e.g. base-line drifting)
P	=	Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q	=	Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R	=	Surrogates Recovery Noncompliance
S	=	Pesticide/PCB Resolution
T	=	% Breakdown Noncompliance for DDT and Endrin
U	=	% Difference between columns/detectors >25% for positive results determined via GC/HPLC
V	=	Non-linear calibrations; correlation coefficient $r < 0.995$
W	=	EMPC result
X	=	Signal to noise response drop
Y	=	Percent solids <30%
Z	=	Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00870	NSAMPLE	CRP-SD05-0006			CRP-SD06-0006			CRP-SD06-0612			CRP-SD07-0006		
SDG: CARPT006	LAB_ID	0906141-05			0906141-01			0906141-02			0906141-03		
FRACTION: OS	SAMP_DATE	6/15/2009			6/15/2009			6/15/2009			6/15/2009		
MEDIA: SEDIMENT	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	81.0			81.7			83.2			82.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		250	U		240	U		240	U		240	U	
ACENAPHTHENE		250	U		240	U		240	U		240	U	
ACENAPHTHYLENE		250	U		240	U		240	U		240	U	
ANTHRACENE		250	U		240	U		240	U		240	U	
BENZO(A)ANTHRACENE		250	U		68	J	P	240	U		64	J	P
BENZO(A)PYRENE		250	U		240	U		240	U		240	U	
BENZO(B)FLUORANTHENE		250	U		100	J	P	240	U		240	U	
BENZO(G,H,I)PERYLENE		250	U		180	J	P	240	U		240	U	
BENZO(K)FLUORANTHENE		250	U		240	U		240	U		240	U	
CHRYSENE		250	U		76	J	P	240	U		62	J	P
DIBENZO(A,H)ANTHRACENE		250	U		240	U		240	U		240	U	
FLUORANTHENE		250	U		87	J	P	240	U		130	J	P
FLUORENE		250	U		240	U		240	U		240	U	
INDENO(1,2,3-CD)PYRENE		250	U		240	U		240	U		240	U	
NAPHTHALENE		250	U		240	U		240	U		240	U	
PHENANTHRENE		250	U		52	J	P	35	J	P	110	J	P
PYRENE		57	J	P	110	J	P	240	U		130	J	P

PROJ_NO: 00870	NSAMPLE	CRP-SD07-0612			CRP-SD-DUP01		
SDG: CARPT006	LAB_ID	0906141-04			0906141-06		
FRACTION: OS	SAMP_DATE	6/15/2009			6/15/2009		
MEDIA: SEDIMENT	QC_TYPE	NM			FD		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	83.0			82.5		
	DUP_OF				CRP-SD06-0006		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		240	U		240	U	
ACENAPHTHENE		240	U		240	U	
ACENAPHTHYLENE		240	U		240	U	
ANTHRACENE		240	U		240	U	
BENZO(A)ANTHRACENE		240	U		60	J	P
BENZO(A)PYRENE		240	U		240	U	
BENZO(B)FLUORANTHENE		240	U		240	U	
BENZO(G,H,I)PERYLENE		240	U		160	J	P
BENZO(K)FLUORANTHENE		240	U		240	U	
CHRYSENE		240	U		65	J	P
DIBENZO(A,H)ANTHRACENE		240	U		240	U	
FLUORANTHENE		240	U		85	J	P
FLUORENE		240	U		240	U	
INDENO(1,2,3-CD)PYRENE		240	U		240	U	
NAPHTHALENE		240	U		240	U	
PHENANTHRENE		240	U		54	J	P
PYRENE		240	U		92	J	P

PROJ_NO: 00870	NSAMPLE	CRP-SD-RB01-061609		
SDG: CARPT006	LAB_ID	0906153-11		
FRACTION: OS	SAMP_DATE	6/16/2009		
MEDIA: WATER	QC_TYPE	RB		
	UNITS	UG/L		
	PCT_SOLIDS			
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		4.8	U	
ACENAPHTHENE		4.8	U	
ACENAPHTHYLENE		4.8	U	
ANTHRACENE		4.8	U	
BENZO(A)ANTHRACENE		4.8	U	
BENZO(A)PYRENE		4.8	U	
BENZO(B)FLUORANTHENE		4.8	U	
BENZO(G,H,I)PERYLENE		4.8	U	
BENZO(K)FLUORANTHENE		4.8	U	
CHRYSENE		4.8	U	
DIBENZO(A,H)ANTHRACENE		4.8	U	
FLUORANTHENE		4.8	U	
FLUORENE		4.8	U	
INDENO(1,2,3-CD)PYRENE		4.8	U	
NAPHTHALENE		4.8	U	
PHENANTHRENE		4.8	U	
PYRENE		4.8	U	

TETRA TECH

INTERNAL CORRESPONDENCE

C-NAVY-06-09-3193W

Date: June 18, 2009

c: File G00870-4.10 (w/enc.-original)
T. Campbell (scan, w/o enc.)

To: Steve Parker (scan, w/o enc.)

From: Jennifer Cardinal (no copy) (for)

Subject: Tier II Organic Data Validation, SDG 58898
APPL, Inc.
CTO 406, MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island

Propellants:

9/Soils/	CRP-SO-ARC1A	CRP-SO-ARC1B
	CRP-SO-ARC1C	CRP-SO-ARC2A
	CRP-SO-ARC2B	CRP-SO-ARC2C
	CRP-SO-ARC3A	CRP-SO-ARC3B
	CRP-SO-ARC3C	
1/Rinsate Blank/	CRP-SO-RB01-051409	

Tetra Tech NUS, Inc. (TtNUS) performed a Tier II data validation on the propellants analytical data for soil samples collected by TtNUS at MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island on May 14, 2009. Sample collection and analysis was performed according to the approved Work Plan and Quality Assurance Project Plan for MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island, dated April 2009.

Sample CRP-SO-ARC1A was analyzed in triplicate for by the laboratory for the propellant target compounds nitroglycerin, 2,4-dinitrotoluene, and 2,6-dinitrotoluene. The average of the triplicate results is reported in the data summary tables for these samples under the sample ID CRP-SO-ARC1A.

The samples were subject to the following project-specific requirements as requested in the statement of work:

- Triplicate analysis on one per five field samples processed.
- Samples were air dried and the entire sample must be sieved prior to grinding and analysis.
- One verification blank was processed after ring mill decontamination and after processing of the first sample.
- Ring mill, sieves, and any equipment used in the preparation process must be decontaminated between treatments of each individual sample.
- All positive HPLC identifications must be confirmed by a second column.
- A Sample Processing and Analysis Log Sheet must be completed for each sample.

The propellants analysis was performed according to the USEPA SW-846 Method 8330B Appendix A. The Tier II validation was performed in accordance with the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Organic Analyses, Part II, December 1996.

The data were evaluated based on the following parameters:

	• Data Completeness
*	• Preservation and Technical Holding Times
*	• Initial and Continuing Calibrations
*	• Blanks
*	• Surrogate Compounds
	• Matrix Spike/Matrix Spike Duplicate
*	• Laboratory Control Sample/Laboratory Control Sample Duplicate
*	• Laboratory Triplicates
	• Field Triplicates
*	• Analyte Identification/Quantitation
NA	• Percent Solids
*	• Reporting Limits

* Criteria met for this parameter.
NA Not applicable for this SDG.

Data Completeness

On June 10, 2009, Leonard Fong of APPL, Inc. confirmed that the ring mill, sieves, and any equipment used in the sample preparation process were decontaminated between treatments of each individual sample.

On June 10, 2009, APPL, Inc. confirmed that a sand "verification blank" was ground immediately following the grinding of one sample. The first sample required four separate grinding bowls (due to the volume of the first sample); therefore there additional sand blanks were ground to verify the remaining three bowls (total of 4 sand verification blanks). These four blanks were composited and analyzed as a "method blank" in accordance with the DOD QSM (March 2009). No target analyte was detected at or above the MDL in the method blank, and no further action was required.

On June 10, 2009, APPL, Inc. submitted Form I equivalents for the results of the second column. On June 11, 2009, APPL, Inc. further explained that during data review, the analyst calculates RPD between column 1 and column 2 to confirm the positive results reported. In the case that an RPD result is above 40% the analyst would note it on the chromatogram.

Matrix Spike/Matrix Spike Duplicate

The following table summarizes the target compound matrix spiking recovery and RPD that did not meet the statistically derived laboratory QC limits in the matrix spike and matrix spike duplicate (MS/MSD) analysis and the qualifications applied to the affected sample:

CRP-SO-ARC1A						
Aroclor	MS/MSD %Rec.	%Rec. QC Limits	RPD	RPD QC Limits	Action	
					(+)	ND
Nitroglycerin	0/Critera met	70-135	200	20	J	

The MS recovery criteria were not met for nitroglycerin; therefore, the project accuracy goals may be impacted. The nitroglycerin response in the unspiked sample was ten times the amount used as

spiking level; consequently, professional judgment was used to estimate the nitroglycerine result in sample CRP-SO_ARC1AC instead of reject it. The positive nitroglycerin result in sample CRP-SO-ARC1A is usable as an estimated value which may be biased low.

The MS/MSD RPD criterion was not met for nitroglycerin; therefore, the project precision goals may be impacted. The positive nitroglycerin result in sample CRP-SO-ARC1A is usable as an estimated value for which the bias is indeterminate.

Field Triplicates

The following field triplicate results exceeded the relative standard deviation (RSD) project-specific criterion of 20% for the noted target compounds:

Samples	Metal	RSD	Action	
			(+)	NDs
CRP-SO-ARC1C CRP-SO-ARC2C CRP-SO-ARC3C	Nitroglycerin	20.8	J	

The relative standard deviation for nitroglycerine exceeded the 20% project-specific criterion in the firld triplicate samples listed above; therefore, the project precision goals may be impacted. Professional judgment is used to qualify only the result in the applicable samples since all other relative standard deviations met the QC criterion. The positive nitroglycerin results in samples CRP-SOARC1C, CRP-SO-ARC2C, and CRP-SO-ARC3C are usable as estimated values for which the bias is indeterminate.

2,4-Dinitrotoluene was reported as a positive hit slightly above the MDL in sample CRP-SOARC1B, however, it was detected below the MDL or it was not detected in samples CRP-SO-ARC2B and CRP-SO-ARC3B. Professional judgment was used not to qualify these samples even when the mathematical RSD is above the limits since the nitroglycerin positive result in sample CRP-SOARC1B is only a trace.

Reporting Limits

Positive results below the quantitation limit (QL) and above the method detection limit (MDL) are estimated (J) due to uncertainty below the QL.

All project action limits were achieved by the laboratory's reporting limits.

Data Usability Assessment

The data usability assessment was performed to determine if the data met the project data quality objectives for acceptable accuracy, precision, sensitivity, and completeness; and to determine and define the impact of the exceeded quality control indicators on the technical usability of the data. Please refer to the specific sections in the above validation report for further details.

The project goals with respect to accuracy were met for the propellants data set with the following exception. Nitroglycerin was qualified as estimated in sample CRP-SO-ARC1A due to a low MS/MSD recovery; the affected result may be biased low. Although a specific QC criterion was not met in this instance, the affected positive result is usable as an estimated value which may have a minor impact on data usability.

The project goals with respect to precision were met for the propellants data set with the following exceptions. Nitroglycerin was qualified as estimated in sample CRP-SO-ARC1A due to poor MS/MSD precision. Nitroglycerin was also qualified as estimated in samples CRP-SOARC1C, CRP-SO-ARC2C, and CRP-SO-ARC3C due to poor field triplicate precision. Although specific QC criteria were not met in these instances, the affected positive and non-detected results are usable as estimated values and estimated quantitation limits which may have a minor impact on data usability.

The project goals with respect to sensitivity and completeness were met for the propellants data set. Data usability was not impacted with regards to sensitivity and completeness.

Tables: Data Validation Qualifiers and Codes
Data Summary Tables
Sample Processing Log Sheet

Enclosures: Data Validation Worksheets

Data Validation Qualifiers and Codes

Data Validation Qualifiers:

= No qualifier attached to value (positive hit)
J = Value is estimated
U = Value is not detected
UJ = Value is not detected and estimated
R = Value (positive hit) is not usable
UR = Value was reported as ND but is not usable

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00870	NSAMPLE	CRP-SO-ARC1A			CRP-SO-ARC1B			CRP-SO-ARC1C			CRP-SO-ARC2A		
SDG: 58898	LAB_ID	AX96835			AX96836			AX96837			AX96838		
FRACTION: EXP	SAMP_DATE	5/14/2009			5/14/2009			5/14/2009			5/14/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	100.0			100.0			100.0			100.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4-DINITROTOLUENE		0.16	J	P	0.13	J	P	0.13	J	P	0.098	J	P
2,6-DINITROTOLUENE		0.5	U		0.5	U		0.5	U		0.5	U	
NITROGLYCERIN		16	J	D	12			11			7.5		

PROJ_NO: 00870	NSAMPLE	CRP-SO-ARC2B			CRP-SO-ARC2C			CRP-SO-ARC3A			CRP-SO-ARC3B		
SDG: 58898	LAB_ID	AX96839			AX96840			AX96841			AX96842		
FRACTION: EXP	SAMP_DATE	5/14/2009			5/14/2009			5/14/2009			5/14/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	100.0			100.0			100.0			100.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4-DINITROTOLUENE		0.3	U		0.3	U		0.3	U		0.3	U	
2,6-DINITROTOLUENE		0.5	U		0.5	U		0.5	U		0.5	U	
NITROGLYCERIN		7.6			7			1.8	J	G	1.4	J	G

PROJ_NO: 00870	NSAMPLE	CRP-SO-ARC3C		
SDG: 58898	LAB_ID	AX96843		
FRACTION: EXP	SAMP_DATE	5/14/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	100.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
2,4-DINITROTOLUENE		0.3	U	
2,6-DINITROTOLUENE		0.5	U	
NITROGLYCERIN		1.2	J	G

PROJ_NO: 00870	NSAMPLE	CRP-SO-RB01-051409		
SDG: 58898	LAB_ID	AX96844		
FRACTION: EXP	SAMP_DATE	5/14/2009		
MEDIA: WATER	QC_TYPE	RB		
	UNITS	UG/L		
	PCT_SOLIDS			
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
2,4-DINITROTOLUENE		0.5	U	
2,6-DINITROTOLUENE		0.5	U	
NITROGLYCERIN		0.5	U	

TETRA TECH

INTERNAL CORRESPONDENCE

C-NAVY-08-09-5254W

Date: August 3, 2009

c: File G00870-4.10 (w/enc.-original)
T. Campbell (scan, w/o enc.)

To: Steve Parker (scan, w/o enc.)

From: Jennifer Cardinal (no copy) JC (for)

Subject: Tier II Organic Data Validation, SDG CARPT001
Empirical Laboratories, LLC
CTO 406, MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island

VOC/SVOC/Pesticides/PCB/DRO/GRO:

21/Soils/	CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001
	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001
	CRP-SB08-0001	CRP-SB09-0001	CRP-SB10-0001
	CRP-SB11-0001	CRP-SB-DUP01	CRP-SS01-0006
	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612
	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708
	CRP-TP04-0506	CRP-TP05-0102	CRP-TP06-0405

(Field Duplicate Pair: CRP-SB07-0001/CRP-SB-DUP01)

VOC/GRO:

3/Trip Blanks/	CRP-TB01-051109	CRP-TB02-052109	CRP-TB03-051309

Tetra Tech NUS, Inc. (TtNUS) performed a Tier II data validation on the volatile organic compound (VOC), semivolatile organic compound (SVOC), pesticide, polychlorinated biphenyl (PCB), gasoline range organics (GRO), and diesel range organics (DRO) analytical data for the soil samples collected by TtNUS at MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island from May 11-13, 2009. Sample collection and analysis was performed according to the approved Work Plan and Quality Assurance Project Plan for MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island, dated April 2009.

The VOC and SVOC analyses were performed according to USEPA SW-846 Methods 8260B and 8270C, respectively. The pesticides and PCB analyses were performed according to USEPA SW-846 Methods 8081 and 8082, respectively. The GRO and DRO analyses were both performed according to USEPA SW-846 Method 8015B.

The VOC, SVOC, GRO, and DRO data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996. The pesticides and PCB validation was performed in accordance with the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Organic Analyses, Part III, February 2004.

The sample results, validation qualifiers (VQ), and qualifier codes (QLCD) are presented in the enclosed data summary tables. A list of the qualifier codes, which provide the reasons for the validation qualifiers, is enclosed.

The data were evaluated based on the following parameters:

- Data Completeness

Tetra Tech NUS, Inc.
55 Jonspin Road, Wilmington, MA 01887-1020
Tel 978.474.8400 Fax 978.474.8499 www.ttnus.com

- Preservation and Technical Holding Times
- * GC/MS Instrument Performance Check (Tuning)
- * Pesticide Degradation
- Initial and Continuing Calibrations
- Blanks
- Surrogate Compounds
- Internal Standards
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample/Laboratory Control Sample Duplicate
- * Field Duplicates
- Analyte Identification/Quantitation
- * Percent Solids
- Reporting Limits

* All criteria were met for this parameter.

Data Completeness

The laboratory logged in samples CRP-TP01A-0506 and CRP-TP01B-0506 with the suffix "-0509". On July 6, 2009 the laboratory resubmitted all affected forms to revise the sample IDs.

On July 8, 2009 the laboratory clarified that the trip blanks associated with the samples in this SDG are aqueous. The TtNUS data validator, J. Cardinal, used professional judgment not to apply the trip blank results to determine blank action levels due to matrix mismatch.

Volatiles

On July 6, 2009 the laboratory clarified that select initial calibration pages should not have been included in the data package. The summary pages which correspond to the volatile samples in this data package include pages 214-216, 266-268, and 325-327.

The Form I for the volatiles sample CRP-SB02-0001 was labeled with a percent moisture value of 0% in the original data package. On July 13, 2009 the laboratory resubmitted the Form I to show the correct percent moisture.

Semivolatiles

On July 6, 2009 the laboratory clarified that select initial calibration pages should not have been included in the data package. The summary pages which correspond to the semivolatile samples in this data package include pages 320-322, 490, 528-530, and 711.

The original data package was missing the Form 5s for the semivolatiles initial calibration run. On July 7, 2009 the laboratory submitted the missing forms.

On July 13, 2009 the laboratory submitted a list of semivolatile internal standards and their associated target compounds since this was not included in the original data package.

Pesticides and PCBs

On July 6, 2009 the laboratory clarified that the Form 10s for the pesticide and PCB analyses report the relative percent difference (RPD) between the results in the dual column analysis and not the %D as indicated by the column header on the forms.

On July 13, 2009 the laboratory explained that for select samples the pesticide and PCB analysis was performed together. In these cases, the surrogate recoveries were reported together on the Form 2 labeled "Pesticide".

The endosulfan sulfate result in sample CRP-SS01-0612 was flagged by the laboratory with an "E" (above the calibration range) in the original data package. On July 13, 2009 the laboratory explained that the flag was incorrect and the laboratory provided a revised Form I.

The pesticide sample results for CRP-SB11-0001 did not coincide with the Form 10 in the original data package. On July 15, 2009 the laboratory provided a corrected Form 1 since the sample results reported in the original package were incorrect. On July 16, 2009 the laboratory provided a revised Form 10 to include endosulfan II since it was missing from the original package.

On July 16, 2009 the laboratory confirmed that the Form 10s provided in pages 434 through 479 are duplicate of the forms provided in pages 480 through 498 with the following exception. The Form 10 for sample CRP-SB02-0001 did not match. On July 20, 2009 the laboratory submitted the correct Form 10.

On August 3, 2009 the laboratory confirmed the date extracted for sample CRP-SB02-0001DL to be May 22, 2009.

<u>Preservation and Technical Holding Times</u>

Pesticides

The undiluted pesticide sample CRP-SB02-0001 was extracted one day beyond the 14-day technical holding time criterion. The non-detected pesticide results for this sample are estimated (UJ) due the exceeded holding time criterion.

Although the method required holding time criterion was not met for the pesticide sample CRP-SB02-0001, the project accuracy goals are not impacted since the affected results do not exceed the project action limits. The non-detected results in the affected sample are usable as estimated quantitation limits which may be biased low.

<u>Initial and Continuing Calibrations</u>

Volatiles

The following table summarizes the volatile compound that failed to meet the initial calibration verification criterion of %D < 25%:

Compound	%D	Action		Affected Samples
		(+)	ND	
Dichlorodifluoromethane	29.8		UJ	CRP-TB01-051109, CRP-TB02-051209
Acetone	-34.9	J	UJ	All soil samples

Although the %D for dichlorodifluoromethane exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for this compound. The non-detected dichlorodifluoromethane results in the affected samples are usable as estimated quantitation limits.

Although the %D for acetone exceeded the QC criterion, the project accuracy goals are not impacted since the affected sample results are much lower than the project action limit for acetone. The positive and non-detected acetone results in the affected samples are usable as estimated values and estimated quantitation limits.

The following table summarizes the volatile compounds that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	%D	Action		Affected Samples
		(+)	NDs	
Bromoform	34.0, 36.1		UJ	CRP-TB01-051109, CRP-TB02-051209
Tetrachloroethene	29.9, 31.1		UJ	CRP-TB01-051109, CRP-TB02-051209
Dibromochloromethane	26.4		UJ	CRP-TB02-051209
Acetone	50.1, 50.0, 37.4	J	UJ	All soils and CRP-TB03-051309
2-Butanone	133.4, 70.6		UJ	All soil samples
2-Hexanone	25.2		UJ	CRP-TB03-051309

Although the %D for bromoform, tetrachloroethene, dibromochloromethane, and 2-hexanone exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for the trip blanks. The non-detected bromoform, tetrachloroethene, dibromochloromethane, and 2-hexanone results in the affected samples are usable as estimated quantitation limits.

Although the %D for acetone and 2-butanone exceeded the QC criterion, the project accuracy goals are not impacted since the affected results are much lower than the project action limits (and there are no regulatory limits established for acetone for the trip blank samples). The positive and non-detected acetone and 2-butanone results in the affected samples are usable as estimated values and estimated quantitation limits.

Semivolatiles

The following table summarizes the semivolatile compounds that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	%D	Action		Affected Samples
		(+)	NDs	
Hexachlorocyclopentadiene	32.2		UJ	CRP-TP01A-0506, CRP-TP01B-0506,
4-Nitrophenol	-48.4		UJ	CRP-TP01B-0708, CRP-TP04-0506,

Compound	%D	Action		Affected Samples
		(+)	NDs	
				CRP-TP05-0102, CRP-SB10-0001, CRP-SB08-0001, CRP-SS02-0006
2,4-Dinitrotoluene	-99.9		UJ	CRP-SS01-0612, CRP-SS02-0612, CRP-SS01-0006, CRP-TP06-0405, CRP-SB-DUP01, CRP-SB06-0001, CRP-SB11-0001
Atrazine	-29.4		UJ	CRP-SB09-0001, CRP-SB05-0001, CRP-SB01-0001, CRP-SB03-0001, CRP-SB02-0001
Caprolactam	27.2		UJ	
Di-n-octylphthalate	35.2, 27.2		UJ	CRP-SB09-0001, CRP-SB05-0001, CRP-SB01-0001, CRP-SB03-0001, CRP-SB02-0001, CRP-SB07-0001
2,4-Dinitrophenol	-25.3		UJ	CRP-SB07-0001

Although the %D for hexachlorocyclopentadiene, 4-nitrophenol, and 2,4-dinitrophenol exceeded the QC criterion, the project accuracy goals are not impacted since the affected sample results are much lower than the project action limits for these compounds. The non-detected hexachlorocyclopentadiene, 4-nitrophenol, and 2,4-dinitrophenol results in the affected samples are usable as estimated quantitation limits.

Although the %D for atrazine, caprolactam, and di-n-octylphthalate exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for these compounds. The non-detected atrazine, caprolactam, and di-n-octylphthalate results in the affected samples are usable as estimated quantitation limits.

The %D for 2,4-dinitrotoluene exceeded the QC criterion; therefore, the project accuracy goals may be impacted. The non-detected 2,4-dinitrotoluene results in the affected samples are usable as estimated quantitation limits.

Pesticides

The following table summarizes the pesticide compounds that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	Col. 1 %D	Col. 2 %D	Action		Affected Samples
			(+)	NDs	
Methoxychlor	-28.6, -32.3, -43.5, -64.9	-28.5, 32.5, -55.6, -62.8	J	UJ	CRP-TP01A-0506, CRP-TP01B-0506, CRP-TP01B-0708, CRP-TP04-0506, CRP-SB09-0001, CRP-SB05-0001, CRP-SB01-0001, CRPSB02-0001, CRP-SB03-0001, CRP-SS02-0006, CRP-SS01-0612, CRP-SS02-0612, CRP-SS01-0001, CRP-TP05-0102, CRP-TP06-0405, CRP-SB10-0001, CRP-SB-DUP01, CRP-SB06-0001, CRP-SB08-0001, CRP-SB07-0001, CRP-SB11-0001
Endrin	-31.2,	-26.3,	J	UJ	CRP-SB03-0001, CRP-SS02-0006, CRP-SS01-0612,

Compound	Col. 1 %D	Col. 2 %D	Action		Affected Samples
			(+)	NDs	
	-51.9, -47.1	-36.7, -47.8, -47.2			CRP-SS02-0612, CRP-TP05-0102, CRP-TP06-0405, CRP-SB10-0001, CRP-SB-DUP01, CRP-SB06-0001, CRP-SB08-0001, CRP-SB07-0001, CRP-SB11-0001
4,4'-DDT	-59.4, -65.8	25.2, -28.4, -53.8, -65.0	J	UJ	CRP-TP01B-0708, CRP-TP04-0506, CRP-SB05-0001, CRP-SB01-0001, CRP-SS02-0006, CRP-SS02-0612, CRP-SS01-0001, CRP-TP05-0102, CRP-TP06-0405, CRP-SB10-0001, CRP-SB-DUP01, CRP-SB06-0001, CRP-SB08-0001, CRP-SB07-0001, CRP-SB11-0001
Heptachlor	-39.4, -47.1	-25.3, -39.7, -49.1		UJ	CRP-SS02-0006, CRP-SS01-0612, CRP-SS02-0612, CRP-SS01-0001, CRP-TP05-0102, CRP-TP06-0405, CRP-SB10-0001, CRP-SB-DUP01, CRP-SB06-0001, CRP-SB08-0001, CRP-SB07-0001, CRP-SB11-0001
Endosulfan II	-28.6	-	J		CRP-SB10-0001, CRP-SB11-0001, CRP-SS01-0612, CRP-TP06-0405

- Criterion met

Although the %D for methoxychlor, endrin, heptachlor, and endosulfan II exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for these compounds. The positive and non-detected methoxychlor, endrin, heptachlor, and endosulfan II results in the affected samples are usable as estimated values and estimated quantitation limits.

The %D for 4,4'-DDT exceeded the QC criterion; therefore, the project accuracy goals may be impacted. The positive and non-detected 4,4'-DDT results in the affected samples are usable as estimated values and estimated quantitation limits.

Blanks

Volatiles

The following table summarizes the level of blank contamination detected in the laboratory blank associated with the listed samples:

Compound	Type of Blank	Maximum Concentration	Action Level	Affected Samples
1,2,4-Trichlorobenzene	Method	0.26 µg/L	1.3 µg/L	CRP-TB03-051309

Blank actions were applied to elevate the reporting limits for 1,2,4-trichlorobenzene in the affected samples due to laboratory blank contamination. The 5x rule applies for 1,2,4-trichlorobenzene. The positive result below the blank action level and below the quantitation limit is changed to a non-detected value at the quantitation limit (QL).

Although 1,2,4-trichlorobenzene contamination was found in the laboratory blank, the project sensitivity goals are not impacted since there are no regulatory limits established for the trip blank samples. The 1,2,4-trichlorobenzene result in the affected sample is usable as a non-detected value.

Semivolatiles

The following table summarizes the level of blank contamination detected in the laboratory blank associated with the listed samples:

Compound	Type of Blank	Maximum Concentration	Action Level	Affected Samples
Bis(2-ethylhexyl) phthalate	Method	45 µg/kg	450 µg/kg	CRP-SB08-0001, CRP-SB10-0001, CRP-SS02-0006, CRP-TP01A-0506, CRP-TP01B-0708, CRP-TP04-0506, CRP-TP05-0102
Caprolactam	Method	82 µg/kg	410 µg/kg	CRP-TP01A-0506, CRP-TP04-0506

Blank actions were applied to elevate the reporting limits for bis(2-ethylhexyl)phthalate and caprolactam in the affected samples due to laboratory blank contamination. The 10x rule applies for bis(2-ethylhexyl)phthalate while the 5x rule applies for caprolactam. The positive results below the blank action level and below the quantitation limit are changed to non-detected values at the quantitation limit (QL).

Although bis(2-ethylhexyl)phthalate and caprolactam contamination was found in the laboratory blank, the project sensitivity goals are not impacted since there are no regulatory limits established for these compounds. The bis(2-ethylhexyl)phthalate and caprolactam results in the affected samples are usable as non-detected values.

Pesticides

The following table summarizes the level of blank contamination detected in the laboratory blank associated with the listed samples:

Compound	Type of Blank	Maximum Concentration	Action Level	Affected Sample
Gamma-Chlordane	Method	0.19 µg/kg	0.95 µg/kg	CRP-TP01A-0506

Blank actions were applied to elevate the reporting limit for gamma-chlordane in the affected sample due to laboratory blank contamination. The 5x rule applies for gamma-chlordane. The positive result below the blank action level and below the quantitation limit is changed to a non-detected value at the quantitation limit (QL).

Although gamma-chlordane contamination was found in the laboratory blank, the project sensitivity goals are not impacted since the elevated non-detected result in the affected sample is below the action limit. The gamma-chlordane result in the affected sample is usable as a non-detected value.

Surrogate Compounds

Volatiles

The following samples had surrogate spike recoveries outside of the recovery QC limits:

Sample	Surrogate	% Recovery	QC Limits	Action	
				(+)	NDs
CRP-SB05-0001	Dibromofluoromethane	127	80-125	J	
CRP-SS01-0006		134		J	
CRP-TP01A-0506		132		J	
CRP-SS02-0612		135		J	
CRP-SB08-0001		129		J	
CRP-SB07-0001		133		J	
	1,2-Dichloroethane-d4	142	75-140		

The surrogates dibromofluoromethane and 1,2-dichloroethane-d4 recovered above the QC limits in the samples listed above. All positive volatile compound results are estimated (J) in the affected samples due to high surrogate recoveries.

Although the surrogate recovery QC criteria were not met for dibromofluoromethane and 1,2-dichloroethane-d4, the project accuracy goals are not impacted since the affected sample results are much lower than the project action limits. The affected positive volatile compound results in the affected samples are usable as estimated values which may be biased high.

PCBs

The following sample had a surrogate spike recoveries outside of the recovery QC limits:

Sample	Surrogate	% Recovery		QC Limits	Action	
		Col 1	Col 2		(+)	NDs
CRP-SB02-0001	Decachlorobiphenyl	192	196	35-140	J	

For sample CRP-SB02-0001, the sample was re-analyzed at a dilution and the surrogates were diluted out of this analysis. The Aroclor-1260 result from the dilution analysis was selected to be reported and professional judgment was used to apply similar actions to the dilution analysis that would have been applied to the undiluted analysis.

The surrogate recovery QC criteria were not met for the above listed sample; therefore, the project accuracy goals may be impacted. The Aroclor-1260 result in the affected sample is usable as an estimated value which may be biased high.

Internal Standards

Semivolatiles

The following table summarizes the semivolatile internal standards that failed to meet the acceptance criteria:

Internal Standard	IS Area	Acceptable Range	Action		Affected Samples
			(+)	NDs	
Phenanthrene-d10	5126938	1078760-4315038	J		CRP-TP01A-0506
Chrysene-d12	2940465	722853-2891412	J		
Perylene-d12	2341890	525993-2103970	J		
Phenanthrene-d12	5055611	1078760-4315038	J		CRP-SB10-0001
Chrysene-d12	1012693	1287186-5148744	J	UJ	CRP-SB09-0001
Perylene-d12	421299	777450-3109800	J	UJ	
Perylene-d12	771819	777450-3109800	J	UJ	CRP-SB05-0001

The internal standard area of phenanthrene-d10, chrysene-d12, and perylene-d12 failed to meet the acceptable range for the samples listed above.

The affected target compounds in sample CRP-TP01A-0506 are fluoranthene, benzo(a)anthracene, bis(2-ethylhexyl)phthalate, chrysene, pyrene, benzo(b)fluoranthene, benzo(a)pyrene, and benzo(k)fluoranthene.

The affected target compounds in sample CRP-SB10-0001 are fluoranthene and phenanthrene.

The positive results for the associated compounds are estimated (J) in samples CRP-TP01A-0506 and CRP-SB10-0001 due to high internal standard areas.

The affected target compounds in sample CRP-SB09-0001 are bis(2-ethylhexyl)phthalate, butylbenzylphthalate, 3,3'-dichlorobenzidine, dibenzo(a,h)anthracene, and di-n-octylphthalate.

The affected target compounds in CRP-SB05-0001 are benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, dibenzo(a,h)anthracene, benzo(a)pyrene, di-n-octylphthalate, and indeno(1,2,3-cd)pyrene.

The positive and non-detected results for the associated compounds are estimated (J, UJ) in samples CRP-SB09-0001 and CRP-SB05-0001 due to low internal standard areas.

Although the QC criteria were not met for the internal standard area of phenanthrene-d10, chrysene-d12, and perylene-d12 for the above samples, the project accuracy goals for butylbenzylphthalate and di-n-octylphthalate in samples CRP-SB09-0001 and CRP-SB05-0001 are not impacted since there are no regulatory limits established for these compounds for the soil samples. The affected positive and non-detected results in the affected samples are usable as estimated values and estimated quantitation limits.

Although the QC criteria were not met for the internal standard area of phenanthrene-d10, chrysene-d12, and perylene-d12 for the above samples, the project accuracy goals are not impacted for fluoranthene, benzo(a)anthracene, bis(2-ethylhexyl)phthalate, chrysene, pyrene, benzo(b)fluoranthene, benzo(a)pyrene, and benzo(k)fluoranthene in sample CRP-TP01A-0506; fluoranthene and phenanthrene in sample CRP-SB10-0001; and bis(2-ethylhexyl)phthalate in sample CRP-SB09-0001. The affected results are much lower than the project action limits. The affected positive and non-detected results in the affected samples are usable as estimated values and estimated quantitation limits.

The QC criteria were not met for the internal standard area of perylene-d12 for the above samples; therefore, the project accuracy goals may be impacted for 3,3'-dichlorobenzidine and dibenzo(a,h)anthracene in sample CRP-SB09-0001; and benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, dibenzo(a,h)anthracene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene in sample CRP-SB05-0001. The affected positive and non-detected results in the affected samples are usable as estimated values and estimated quantitation limits.

Matrix Spike/Matrix Spike Duplicate

Semivolatiles

The following table summarizes the semivolatile matrix spiking recovery that did not meet QC limits in the matrix spike and matrix spike duplicate analysis and the qualifications applied to the affected sample:

CRP-SB07-0001					
Compound	MS %REC	MSD %REC	QC Limits	Action	
			%REC	(+)	ND
Pyrene	-	126	45-125	J	

-Criterion met

Although the MS/MSD recovery criteria were not met for pyrene, the project accuracy goals are not impacted since the affected sample results are much lower than the project action limits. The positive pyrene result in sample CRP-SB07-0001 is usable as an estimated value which may be biased high.

The following table summarizes the semivolatile matrix spiking recovery and relative percent difference (RPD) that did not meet QC limits in the matrix spike and matrix spike duplicate analysis and the qualifications applied to the affected sample:

CRP-SS02-0006						
Compound	MS/MSD %REC	%REC QC LIMITS	RPD	RPD QC LIMITS	Action	
					(+)	ND
2,6-Dinitrotoluene	38/ 22	50-110	55	30		UJ

Although the MS/MSD recovery criteria were not met for 2,6-dinitrotoluene, the project accuracy goals are not impacted since there are no regulatory limits established for this compound for the soil samples. The non-detected 2,6-dinitrotoluene result in sample CRP-SS02-0006 is usable as an estimated quantitation limit which may be biased low.

Although the MS/MSD RPD criterion was not met for 2,6-dinitrotoluene, the project precision goals are not impacted since there are no regulatory limits established for this compound for the soil samples. The non-detected 2,6-dinitrotoluene result in sample CRP-SS02-0006 is usable as an estimated quantitation limit.

Laboratory Control Sample/Laboratory Control Sample Duplicates

Volatiles

The following table summarizes the volatile compounds that failed to meet the LCS/LCSD relative percent difference (RPD) QC limits:

Compound	RPD	QC Limits	Action		Affected Samples
			(+)	NDs	
Bromomethane	42	30		UJ	CRP-TB02-051209
Acetone	37	30	J	UJ	CRP-SB05-0001, CRP-SS01-0006, CRP-TP01A-0506, CRP-TP01B-0506, CRP-TP01B-0708, CRP-TP04-0506, CRP-SB09-0001, CRP-SB01-0001, CRP-SB03-0001, CRP-SB02-0001, CRP-SS02-0006, CRP-SS01-0612

Although the laboratory control sample RPD criteria were not met for bromomethane, the project precision goals are not impacted since there are no regulatory limits established for the trip blank samples. The affected non-detected result in the affected trip blank sample is usable as an estimated quantitation limit for which the bias is indeterminate.

Although the laboratory control sample RPD criteria were not met for acetone, the project precision goals are not impacted since there affected sample results are much lower than the project action limit. The affected positive and non-detected acetone results in the affected samples are usable as estimated values and estimated quantitation limits for which the bias is indeterminate.

Semivolatiles

The following table summarizes the semivolatile compounds that failed to meet the LCS recovery limits:

Compound	% Rec.	QC Limits	Action		Affected Samples
			(+)	NDs	
Acenaphthylene	121	45-105	J		CRP-TP06-0405, CRP-SB05-0001
Anthracene	120, 118	55-105	J		CRP-TP06-0405, CRP-SB09-0001, CRP-SB05-0001, CRP-SB11-0001
Benzo(a)anthracene	120, 129, 117	50-110	J		CRP-TP06-0405, CRP-SB06-0001, CRP-SB05-0001, CRP-SB01-0001, CRP-SB09-0001DL, CRP-TP01A-0506, CRP-SB10-0001, CRP-SB11-0001
Chrysene	116, 112, 115	55-110	J		CRP-TP06-0405, CRP-SB06-0001, CRP-SB05-0001, CRP-SB01-0001, CRP-SB09-0001DL, CRP-TP01A-0506, CRP-SB10-0001, CRP-SB11-0001
Fluoranthene	121, 120	55-115	J		CRP-TP06-0405, CRP-SB06-0001, CRP-SB05-0001, CRP-SB01-0001, CRP-SB09-0001DL, CRP-SB10-0001 CRP-SB11-0001

Compound	% Rec.	QC Limits	Action		Affected Samples
			(+)	NDs	
Benzo(k)fluoranthene	117	45-115	J		CRP-TP01A-0506, CRP-SB10-0001
Bis(2-ethylhexyl)phthalate	131	45-125	J		CRP-TP01A-0506, CRP-TP01B-0708, CRP-TP04-0506, CRP-TP05-0102, CRP-SB10-0001, CRP-SB08-0001, CRP-SS02-0006

Although the laboratory control sample recovery criteria were not met for acenaphthylene, anthracene, and bis(2-ethylhexyl)phthalate the project accuracy goals are not impacted since the affected results are lower than the project action limit. The affected positive results are usable as estimated values which may be biased high.

The laboratory control sample recovery criteria were not met for benzo(a)anthracene, benzo(k)fluoranthene, chrysene, and fluoranthene; therefore, the project accuracy goals may be impacted. The affected positive results are usable as estimated values which may be biased high.

Analyte Identification/Quantitation

Pesticides

The relative percent difference (RPD) between the results of analytical columns 1 and 2 exceeded the 40% RPD QC criterion for the compounds in the following samples:

Sample	Analyte	%RPD	Action
			(+)
CRP-TP01A-0506	4,4'-DDT	111.6	UJ* at 1.0
CRP-TP04-0506	Beta-BHC	110.4	UJ* at 0.57
	4,4'-DDT	55.6	J
CRP-SB09-0001	4,4'-DDD	60.1	J
	Dieldrin	126.8	UJ* at 7.0
CRP-SB05-0001	4,4'-DDD	118.4	UJ* at 8.1
CRP-SB01-0001	4,4'-DDD	42.2	J
	Dieldrin	168.6	UJ* at 3.0
	Methoxychlor	146.6	UJ* at 11
CRP-SB03-0001	4,4'-DDD	171.0	UJ* at 5.7
	Endosulfan II	123.1	UJ* at 1.0
	Endrin	87.3	J
	Heptachlor epoxide	121.6	UJ* at 1.2
CRP-SB02-0001DL	4,4'-DDT	143.3	UJ* at 3700
	Dieldrin	108.3	UJ* at 1100
	Endosulfan II	58.1	J
	Endosulfan sulfate	167.3	UJ* at 1200
	Endrin	82.9	J
	Methoxychlor	188.9	UJ* at 11000
CRP-SS02-0006	4,4'-DDT	145.1	UJ* at 2.8
	Dieldrin	78.7	J
	Endrin ketone	135.3	UJ* at 3.2

Sample	Analyte	%RPD	Action (+)
CRP-SS01-0612	4,4'-DDD	193.7	UJ* at 520
	4,4'-DDE	63.1	J
	Dieldrin	63.8	J
	Endosulfan sulfate	162.2	UJ* at 170
	Endrin	66.4	J
	Methoxychlor	107.1	UJ* at 110
CRP-SS01-0612DL	4,4'-DDT	119.4	UJ* at 760
CRP-SS02-0612	4,4'-DDT	144.5	UJ* at 16
	Dieldrin	91.5	J
	Endosulfan sulfate	96.4	J
	Endrin ketone	177.2	UJ* at 20
	Heptachlor epoxide	53.9	J
CRP-SS01-0006	4,4'-DDD	195.9	UJ* at 1700
	4,4-DDE	96.7	J
	Endosulfan sulfate	161.9	UJ* at 480
	Methoxychlor	138.8	UJ* at 320
CRP-SS01-0006DL	Dieldrin	80.8	J
	Endrin	64.1	J
CRP-SB11-0001	Alpha-chlordane	43.1	J
	4,4'-DDD	98.5	J
	Endrin	57.4	J
	Gamma-chlordane	42.9	J
	Heptachlor epoxide	100.1	J
CRP-TP05-0102	4,4-DDE	165.5	UJ* at 3.8
	4,4'-DDT	121.6	UJ* at 13
	Dieldrin	59.2	J
	Endosulfan II	130.0	UJ* at 3.7
	Endrin	56.9	J
	Endrin aldehyde	142.6	UJ* at 4.4
	Gamma-chlordane	44.1	J
	Heptachlor epoxide	161.0	UJ* at 3.1
CRP-TP06-0405	4,4'-DDD	133.2	UJ* at 24
	Endosulfan II	83.0	J
CRP-SB10-0001	4,4'-DDE	118.0	UJ* at 9.7
	4,4'-DDT	125.8	UJ* at 130
	Dieldrin	42.9	J
	Endosulfan sulfate	167.6	UJ* at 39
	Endrin	66.4	J
	Endrin aldehyde	115.8	UJ* at 15
	Methoxychlor	189.8	UJ* at 290
CRP-SB-DUP01	4,4'-DDT	66.9	J
CRP-SB06-0001	4,4'-DDD	118.0	UJ* at 3.8
	Heptachlor epoxide	132.8	UJ* at 5.0
CRP-SB08-0001	4,4'-DDT	105.3	UJ* at 0.70
	Endrin ketone	44.2	J
	Methoxychlor	144.7	UJ* at 1.8

Sample	Analyte	%RPD	Action (+)
CRP-SB07-0001	Alpha-BHC	127.5	UJ* at 0.93
	4,4'-DDT	54.6	J
	Gamma-BHC	103.9	UJ* at 0.90
	Heptachlor epoxide	128.4	UJ* at 2.5

*Professional judgment was used to raise the result to the higher of the two results and qualify the result as estimated, non-detected (UJ).

Although the analyte quantitation relative percent differences exceeded the 40% RPD QC limit for endrin ketone, endrin, endosulfan II, heptachlor epoxide, 4,4'-DDD, 4,4'-DDE, and endosulfan sulfate in the samples listed above, the project accuracy goals are not impacted since there are no regulatory limits established these compounds for the soil samples. The positive results for the affected compounds in the affected samples are usable as estimated values.

Although the analyte quantitation relative percent differences exceeded the 40% RPD QC limit for 4,4'-DDT, alpha-chlordane, and gamma-chlordane in the samples listed above, the project accuracy goals are not impacted since the affected sample results are below the project action limits. The positive results for the affected compounds in the affected samples are usable as estimated values.

The analyte quantitation relative percent differences exceeded the 40% RPD QC limit for dieldrin in the samples listed above; therefore, the project accuracy goals may be impacted. The positive results for the affected compounds in the affected samples are usable as estimated values.

Although the analyte quantitation relative percent differences exceeded the 100% RPD QC limit for beta-BHC, 4,4'DDD, methoxychlor, endosulfan II, heptachlor epoxide, endosulfan sulfate, endrin ketone, 4,4'-DDE, endrin aldehyde, alpha-BHC, and gamma-BHC in the samples listed above, the project sensitivity goals are not impacted since there are no regulatory limits established for these compounds for the soil samples. The results for the affected compounds in the affected samples are usable as estimated, non-detected values.

The analyte quantitation relative percent differences exceeded the 100% RPD QC limit for 4,4'-DDT and dieldrin in the samples listed above; therefore, the project sensitivity goals may be impacted since the affected results exceed the project action limits. The results for the affected compounds in the affected samples are usable as estimated, non-detected values.

PCBs

The relative percent difference (RPD) between the results of analytical columns 1 and 2 exceeded the 40% RPD QC criterion for the compound in the following sample:

Sample	Analyte	%RPD	Action (+)
CRP-SB02-0001DL	Aroclor-1260	43.3	J

The analyte quantitation relative percent differences exceeded the 40% RPD QC limit for Aroclor-1260 in sample CRP-SB02-0001DL; therefore, the project accuracy goals may be impacted. The positive result for the affected Aroclor in sample CRP-SB02-0001DL is usable as an estimated value.

Reporting Limits

Results above the method detection limit (MDL) and below the quantitation limit (QL) are reported as estimated (J) due to uncertainty below the QL.

Volatiles

Blank actions were taken on 1,2,4-trichlorobenzene in the select samples due to method blank contamination. As described above in the Blanks section, the project sensitivity goals are not impacted.

Semivolatiles

The following samples were initially analyzed at 5x dilution: CRP-SB01-0001, CRP-SB02-0001, CRP-SB03-0001, CRP-SB05-0001, CRP-SB06-0001, CRP-SB09-0001, CRP-SB11-0001, CRP-SB-DUP01, CRP-SS01-0006, CRP-SS01-0612, CRP-SS02-0612, CRP-TP06-0405. Several project action limits were not achieved by the laboratory's reporting limits for the diluted samples listed above. Data usability may be impacted.

Blank actions were taken on bis(2-ethylhexyl)phthalate and caprolactam in the select samples due to method blank contamination. As described above in the Blanks section, the project sensitivity goals are not impacted.

Pesticides

The analyte quantitation relative percent differences exceeded the 100% RPD QC limit for beta-BHC, 4,4'DDD, methoxychlor, endosulfan II, heptachlor epoxide, endosulfan sulfate, endrin ketone, 4,4'-DDE, endrin aldehyde, alpha-BHC, gamma-BHC, 4,4'-DDT, and dieldrin in select samples. As described in the Analyte Identification/Quantitation section, the project sensitivity goals may be impacted for 4,4'-DDT and dieldrin in select samples. Data usability may be impacted for these results.

Data Usability Assessment

The data usability assessment was performed to determine if the data met the project data quality objectives for acceptable accuracy, precision, sensitivity and completeness; and to determine and define the impact of the exceeded quality control indicators on the technical usability of the data. Please refer to the specific sections in the above validation report for further details.

Volatiles

The project goals with respect to accuracy were met for the volatiles data set. Acetone and dichlorodifluoromethane were qualified as estimated in select samples due to a poor initial calibration verification performance. Bromoform, tetrachloroethene, dibromochloromethane, 2-hexanone, acetone, and 2-butanone were qualified as estimated in select samples due to instrument calibration variability. Several compounds in select volatiles samples were qualified as estimated due to high surrogate recoveries. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision were met for the volatiles data set. Bromomethane and acetone were qualified as estimated in select samples due to poor LCS/LCSD precision. Although

specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to sensitivity and completeness were met for the volatiles data set. Data usability was not impacted with regards to sensitivity and completeness.

Semivolatiles

The project goals with respect to accuracy were met for the semivolatiles data set with the following exceptions. 2,4-Dinitrotoluene was qualified as estimated in select samples due to instrument calibration variability. 3,3'-Dichlorobenzidine and dibenzo(a,h)anthracene in sample CRP-SB09-0001; and benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, dibenzo(a,h)anthracene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene in sample CRP-SB05-0001 were qualified as estimated due to poor internal standard performance. Benzo(a)anthracene, benzo(k)fluoranthene, chrysene, and fluoranthene were qualified as estimated in select samples due to high LCS/LCSD recoveries; the affected results may be biased high. Although specific method criteria were not met in these instances, the affected positive and non-detected results are usable as estimated values and estimated quantitation limits which may have a minor impact on data usability. Additionally, hexachlorocyclopentadiene, 4-nitrophenol, 2,4-dinitrophenol, atrazine, caprolactam, and di-n-octylphthalate were qualified as estimated in select samples due to instrument calibration variability. Select compounds were qualified as estimated in select samples due to poor internal standard performance. Pyrene was qualified as estimated in sample CRP-SB07-0001 due to a high MSD recovery. 2,6-Dinitrotoluene was qualified as estimated in sample CRP-SS02-0006 due to low MS/MSD recoveries. Acenaphthylene, anthracene, and bis(2-ethylhexyl)phthalate were qualified as estimated in select samples due to high LCS recoveries. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision were met for the semivolatiles data set. 2,6-Dinitrotoluene was qualified as estimated in sample CRP-SS02-0006 due to poor MS/MSD precision. Although specific method criteria were not met in this instance, data usability is not impacted and the affected non-detected result is usable as an estimated quantitation limit.

The project goals with respect to sensitivity were met for the semivolatiles data set with the following exception. Several project action limits were not achieved by the laboratory's reporting limits for the diluted samples. Data usability may be impacted.

The project goals with respect to completeness were met for the semivolatiles data set. Data usability was not impacted with regards to completeness.

Pesticides

The project goals with respect to accuracy were met for the pesticides data set with the following exceptions. 4,4'-DDT was qualified as estimated in select samples due to instrument calibration variably. Dieldrin was qualified as estimated in select samples due to analytical interferences detected in the dual column analysis. Although specific method criteria were not met in these instances, the affected positive and non-detected results are usable as estimated values and estimated quantitation limits which may have a minor impact on data usability. In addition, the pesticide results in sample CRP-SB02-0001 were qualified as estimated due to holding time exceedances. Methoxychlor, endrin, heptachlor, and endosulfan II were qualified as estimated in select samples due to instrument calibration

variability. Select pesticides were qualified as estimated in select samples due to analytical interferences detected in the dual column analysis. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to sensitivity were met for the pesticides data set with the following exception. The reporting limits were elevated due to analyte quantitation relative percent differences exceeded the 100% RPD QC limit for 4,4'-DDT and dieldrin in select samples. Data usability may be impacted for these results.

The project goals with respect to precision and completeness were met for the pesticides data set. Data usability was not impacted with regards to precision and completeness.

PCBs

The project goals with respect to accuracy were met for the PCB data set with the following exceptions. The positive Aroclor-1260 result in sample CRP-SB02-0001DL was qualified as estimated due to high surrogate recoveries. Aroclor-1260 in sample CRP-SB02-0001DL was qualified as estimated due to analytical interferences detected in the dual column analysis. Although specific method criteria were not met in these instances, the affected positive results are usable as estimated values which may have a minor impact on data usability.

The project goals with respect to precision, sensitivity, and completeness were met for the PCB data set. Data usability was not impacted with regards to precision, sensitivity, and completeness.

GRO and DRO

The project goals with respect to accuracy, precision, sensitivity, and completeness were met for the GRO and DRO data sets. Data usability was not impacted with regards to accuracy, precision, sensitivity, and completeness.

Tables: Data Validation Qualifiers and Codes
Data Summary Tables

Enclosures: Data Validation Worksheets

Data Validation Qualifiers and Codes

Data Validation Qualifiers:

= No qualifier attached to value (positive hit)
J = Value is estimated
U = Value is not detected
UJ = Value is not detected and estimated
R = Value (positive hit) is not usable
UR = Value was reported as ND but is not usable

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0001			CRP-SB02-0001			CRP-SB03-0001			CRP-SB05-0001		
SDG: CARPT001	LAB_ID	0905101-04			0905101-06			0905101-05			0905101-03		
FRACTION: OV	SAMP_DATE	5/12/2009			5/12/2009			5/12/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	83.8			85.3			93.1			71.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		7.2	U		5.3	U		5.6	U		9.4	U	
1,1,2,2-TETRACHLOROETHANE		7.2	U		5.3	U		5.6	U		9.4	U	
1,1,2-TRICHLOROETHANE		7.2	U		5.3	U		5.6	U		9.4	U	
1,1-DICHLOROETHANE		7.2	U		5.3	U		5.6	U		9.4	U	
1,1-DICHLOROETHENE		7.2	U		5.3	U		5.6	U		9.4	U	
1,2,4-TRICHLOROBENZENE		7.2	U		5.3	U		5.6	U		9.4	U	
1,2-DIBROMO-3-CHLOROPROPANE		7.2	U		5.3	U		5.6	U		9.4	U	
1,2-DIBROMOETHANE		7.2	U		5.3	U		5.6	U		9.4	U	
1,2-DICHLOROBENZENE		7.2	U		5.3	U		5.6	U		9.4	U	
1,2-DICHLOROETHANE		7.2	U		5.3	U		5.6	U		9.4	U	
1,2-DICHLOROPROPANE		7.2	U		5.3	U		5.6	U		9.4	U	
1,3-DICHLOROBENZENE		7.2	U		5.3	U		5.6	U		9.4	U	
1,4-DICHLOROBENZENE		7.2	U		5.3	U		5.6	U		9.4	U	
2-BUTANONE		72	UJ	C	53	UJ	C	56	UJ	C	94	UJ	C
2-HEXANONE		14	U		11	U		11	U		19	U	
4-METHYL-2-PENTANONE		14	U		11	U		11	U		19	U	
ACETONE		72	UJ	CE	53	UJ	CE	56	UJ	CE	9.6	J	CEPR
BENZENE		7.2	U		5.3	U		5.6	U		9.4	U	
BROMODICHLOROMETHANE		7.2	U		5.3	U		5.6	U		9.4	U	
BROMOFORM		7.2	U		5.3	U		5.6	U		9.4	U	
BROMOMETHANE		14	U		11	U		11	U		19	U	
CARBON DISULFIDE		7.2	U		5.3	U		5.6	U		9.4	U	
CARBON TETRACHLORIDE		7.2	U		5.3	U		5.6	U		9.4	U	
CHLOROBENZENE		7.2	U		5.3	U		5.6	U		9.4	U	
CHLORODIBROMOMETHANE		7.2	U		5.3	U		5.6	U		9.4	U	
CHLOROETHANE		14	U		11	U		11	U		19	U	
CHLOROFORM		7.2	U		5.3	U		5.6	U		9.4	U	
CHLOROMETHANE		14	U		11	U		11	U		19	U	
CIS-1,2-DICHLOROETHENE		7.2	U		5.3	U		5.6	U		9.4	U	
CIS-1,3-DICHLOROPROPENE		7.2	U		5.3	U		5.6	U		9.4	U	
CYCLOHEXANE		7.2	U		5.3	U		5.6	U		9.4	U	
DICHLORODIFLUOROMETHANE		14	U		11	U		11	U		19	U	
ETHYLBENZENE		7.2	U		5.3	U		5.6	U		9.4	U	
ISOPROPYLBENZENE		7.2	U		5.3	U		5.6	U		9.4	U	
METHYL ACETATE		14	U		11	U		11	U		19	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB06-0001			CRP-SB07-0001			CRP-SB08-0001			CRP-SB09-0001		
SDG: CARPT001	LAB_ID	0905122-09			0905122-11			0905122-10			0905101-02		
FRACTION: OV	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.6			82.2			87.3			82.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5.2	U		6	U		5.6	U		8	U	
1,1,2,2-TETRACHLOROETHANE		5.2	U		6	U		5.6	U		8	U	
1,1,2-TRICHLOROETHANE		5.2	U		6	U		5.6	U		8	U	
1,1-DICHLOROETHANE		5.2	U		6	U		5.6	U		8	U	
1,1-DICHLOROETHENE		5.2	U		6	U		5.6	U		8	U	
1,2,4-TRICHLOROBENZENE		5.2	U		6	U		5.6	U		8	U	
1,2-DIBROMO-3-CHLOROPROPANE		5.2	U		6	U		5.6	U		8	U	
1,2-DIBROMOETHANE		5.2	U		6	U		5.6	U		8	U	
1,2-DICHLOROBENZENE		5.2	U		6	U		5.6	U		8	U	
1,2-DICHLOROETHANE		5.2	U		6	U		5.6	U		8	U	
1,2-DICHLOROPROPANE		5.2	U		6	U		5.6	U		8	U	
1,3-DICHLOROBENZENE		5.2	U		6	U		5.6	U		8	U	
1,4-DICHLOROBENZENE		5.2	U		6	U		5.6	U		8	U	
2-BUTANONE		52	UJ	C	60	UJ	C	56	UJ	C	80	UJ	C
2-HEXANONE		10	U		12	U		11	U		16	U	
4-METHYL-2-PENTANONE		10	U		12	U		11	U		16	U	
ACETONE		52	UJ	C	76	J	CR	12	J	CPR	80	UJ	CE
BENZENE		5.2	U		6	U		5.6	U		8	U	
BROMODICHLOROMETHANE		5.2	U		6	U		5.6	U		8	U	
BROMOFORM		5.2	U		6	U		5.6	U		8	U	
BROMOMETHANE		10	U		12	U		11	U		16	U	
CARBON DISULFIDE		5.2	U		6	U		5.6	U		8	U	
CARBON TETRACHLORIDE		5.2	U		6	U		5.6	U		8	U	
CHLOROBENZENE		5.2	U		6	U		5.6	U		8	U	
CHLORODIBROMOMETHANE		5.2	U		6	U		5.6	U		8	U	
CHLOROETHANE		10	U		12	U		11	U		16	U	
CHLOROFORM		5.2	U		6	U		5.6	U		8	U	
CHLOROMETHANE		10	U		12	U		11	U		16	U	
CIS-1,2-DICHLOROETHENE		5.2	U		6	U		5.6	U		8	U	
CIS-1,3-DICHLOROPROPENE		5.2	U		6	U		5.6	U		8	U	
CYCLOHEXANE		5.2	U		6	U		5.6	U		8	U	
DICHLORODIFLUOROMETHANE		10	U		12	U		11	U		16	U	
ETHYLBENZENE		5.2	U		6	U		5.6	U		8	U	
ISOPROPYLBENZENE		5.2	U		6	U		5.6	U		8	U	
METHYL ACETATE		10	U		12	U		11	U		16	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB10-0001			CRP-SB11-0001			CRP-SB-DUP01			CRP-SS01-0006		
SDG: CARPT001	LAB_ID	0905122-07			0905122-12			0905122-08			0905122-04		
FRACTION: OV	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			FD			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	89.9			90.4			81.9			88.5		
	DUP_OF							CRP-SB07-0001					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		4.5	U		5.6	U		5.9	U		4.5	U	
1,1,2,2-TETRACHLOROETHANE		4.5	U		5.6	U		5.9	U		4.5	U	
1,1,2-TRICHLOROETHANE		4.5	U		5.6	U		5.9	U		4.5	U	
1,1-DICHLOROETHANE		4.5	U		5.6	U		5.9	U		4.5	U	
1,1-DICHLOROETHENE		4.5	U		5.6	U		5.9	U		4.5	U	
1,2,4-TRICHLOROBENZENE		4.5	U		5.6	U		5.9	U		4.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		4.5	U		5.6	U		5.9	U		4.5	U	
1,2-DIBROMOETHANE		4.5	U		5.6	U		5.9	U		4.5	U	
1,2-DICHLOROBENZENE		4.5	U		5.6	U		5.9	U		4.5	U	
1,2-DICHLOROETHANE		4.5	U		5.6	U		5.9	U		4.5	U	
1,2-DICHLOROPROPANE		4.5	U		5.6	U		5.9	U		4.5	U	
1,3-DICHLOROBENZENE		4.5	U		5.6	U		5.9	U		4.5	U	
1,4-DICHLOROBENZENE		4.5	U		5.6	U		5.9	U		4.5	U	
2-BUTANONE		45	UJ	C	56	UJ	C	59	UJ	C	45	UJ	C
2-HEXANONE		8.9	U		11	U		12	U		8.9	U	
4-METHYL-2-PENTANONE		8.9	U		11	U		12	U		8.9	U	
ACETONE		45	UJ	C	56	UJ	C	42	J	CP	7.2	J	CEPR
BENZENE		4.5	U		5.6	U		5.9	U		4.5	U	
BROMODICHLOROMETHANE		4.5	U		5.6	U		5.9	U		4.5	U	
BROMOFORM		4.5	U		5.6	U		5.9	U		4.5	U	
BROMOMETHANE		8.9	U		11	U		12	U		8.9	U	
CARBON DISULFIDE		4.5	U		5.6	U		5.9	U		4.5	U	
CARBON TETRACHLORIDE		4.5	U		5.6	U		5.9	U		4.5	U	
CHLOROBENZENE		4.5	U		5.6	U		5.9	U		4.5	U	
CHLORODIBROMOMETHANE		4.5	U		5.6	U		5.9	U		4.5	U	
CHLOROETHANE		8.9	U		11	U		12	U		8.9	U	
CHLOROFORM		4.5	U		5.6	U		5.9	U		4.5	U	
CHLOROMETHANE		8.9	U		11	U		12	U		8.9	U	
CIS-1,2-DICHLOROETHENE		4.5	U		5.6	U		5.9	U		4.5	U	
CIS-1,3-DICHLOROPROPENE		4.5	U		5.6	U		5.9	U		4.5	U	
CYCLOHEXANE		4.5	U		5.6	U		5.9	U		4.5	U	
DICHLORODIFLUOROMETHANE		8.9	U		11	U		12	U		8.9	U	
ETHYLBENZENE		4.5	U		5.6	U		5.9	U		4.5	U	
ISOPROPYLBENZENE		4.5	U		5.6	U		5.9	U		4.5	U	
METHYL ACETATE		8.9	U		11	U		12	U		8.9	U	

PROJ_NO: 00870	NSAMPLE	CRP-SS01-0612			CRP-SS02-0006			CRP-SS02-0612			CRP-TP01A-0506		
SDG: CARPT001	LAB_ID	0905122-02			0905122-01			0905122-03			0905083-01		
FRACTION: OV	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/11/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.5			80.2			84.2			86.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5.1	U		5.6	U		5.3	U		4.9	U	
1,1,2,2-TETRACHLOROETHANE		5.1	U		5.6	U		5.3	U		4.9	U	
1,1,2-TRICHLOROETHANE		5.1	U		5.6	U		5.3	U		4.9	U	
1,1-DICHLOROETHANE		5.1	U		5.6	U		5.3	U		4.9	U	
1,1-DICHLOROETHENE		5.1	U		5.6	U		5.3	U		4.9	U	
1,2,4-TRICHLOROBENZENE		5.1	U		5.6	U		5.3	U		4.9	U	
1,2-DIBROMO-3-CHLOROPROPANE		5.1	U		5.6	U		5.3	U		4.9	U	
1,2-DIBROMOETHANE		5.1	U		5.6	U		5.3	U		4.9	U	
1,2-DICHLOROBENZENE		5.1	U		5.6	U		5.3	U		4.9	U	
1,2-DICHLOROETHANE		5.1	U		5.6	U		5.3	U		4.9	U	
1,2-DICHLOROPROPANE		5.1	U		5.6	U		5.3	U		4.9	U	
1,3-DICHLOROBENZENE		5.1	U		5.6	U		5.3	U		4.9	U	
1,4-DICHLOROBENZENE		5.1	U		5.6	U		5.3	U		4.9	U	
2-BUTANONE		51	UJ	C	56	UJ	C	53	UJ	C	49	UJ	C
2-HEXANONE		10	U		11	U		11	U		9.8	U	
4-METHYL-2-PENTANONE		10	U		11	U		11	U		9.8	U	
ACETONE		51	UJ	CE	56	UJ	CE	53	UJ	C	49	UJ	CE
BENZENE		5.1	U		5.6	U		5.3	U		4.9	U	
BROMODICHLOROMETHANE		5.1	U		5.6	U		5.3	U		4.9	U	
BROMOFORM		5.1	U		5.6	U		5.3	U		4.9	U	
BROMOMETHANE		10	U		11	U		11	U		9.8	U	
CARBON DISULFIDE		5.1	U		5.6	U		5.3	U		4.9	U	
CARBON TETRACHLORIDE		5.1	U		5.6	U		5.3	U		4.9	U	
CHLOROBENZENE		5.1	U		5.6	U		5.3	U		4.9	U	
CHLORODIBROMOMETHANE		5.1	U		5.6	U		5.3	U		4.9	U	
CHLOROETHANE		10	U		11	U		11	U		9.8	U	
CHLOROFORM		5.1	U		5.6	U		5.3	U		4.9	U	
CHLOROMETHANE		10	U		11	U		11	U		9.8	U	
CIS-1,2-DICHLOROETHENE		5.1	U		5.6	U		5.3	U		4.9	U	
CIS-1,3-DICHLOROPROPENE		5.1	U		5.6	U		5.3	U		4.9	U	
CYCLOHEXANE		5.1	U		5.6	U		5.3	U		4.9	U	
DICHLORODIFLUOROMETHANE		10	U		11	U		11	U		9.8	U	
ETHYLBENZENE		5.1	U		5.6	U		5.3	U		4.9	U	
ISOPROPYLBENZENE		5.1	U		5.6	U		5.3	U		4.9	U	
METHYL ACETATE		10	U		11	U		11	U		9.8	U	

PROJ_NO: 00870	NSAMPLE	CRP-TP01B-0506			CRP-TP01B-0708			CRP-TP04-0506			CRP-TP05-0102		
SDG: CARPT001	LAB_ID	0905083-02			0905083-03			0905101-01			0905122-05		
FRACTION: OV	SAMP_DATE	5/11/2009			5/11/2009			5/12/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.6			88.4			92.3			86.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5.2	U		4	U		4.7	U		4.9	U	
1,1,2,2-TETRACHLOROETHANE		5.2	U		4	U		4.7	U		4.9	U	
1,1,2-TRICHLOROETHANE		5.2	U		4	U		4.7	U		4.9	U	
1,1-DICHLOROETHANE		5.2	U		4	U		4.7	U		4.9	U	
1,1-DICHLOROETHENE		5.2	U		4	U		4.7	U		4.9	U	
1,2,4-TRICHLOROBENZENE		5.2	U		4	U		4.7	U		4.9	U	
1,2-DIBROMO-3-CHLOROPROPANE		5.2	U		4	U		4.7	U		4.9	U	
1,2-DIBROMOETHANE		5.2	U		4	U		4.7	U		4.9	U	
1,2-DICHLOROBENZENE		5.2	U		4	U		4.7	U		4.9	U	
1,2-DICHLOROETHANE		5.2	U		4	U		4.7	U		4.9	U	
1,2-DICHLOROPROPANE		5.2	U		4	U		4.7	U		4.9	U	
1,3-DICHLOROBENZENE		5.2	U		4	U		4.7	U		4.9	U	
1,4-DICHLOROBENZENE		5.2	U		4	U		4.7	U		4.9	U	
2-BUTANONE		52	UJ	C	40	UJ	C	47	UJ	C	49	UJ	C
2-HEXANONE		10	U		8	U		9.3	U		9.8	U	
4-METHYL-2-PENTANONE		10	U		8	U		9.3	U		9.8	U	
ACETONE		52	UJ	CE	40	UJ	CE	47	UJ	CE	49	UJ	C
BENZENE		5.2	U		4	U		4.7	U		4.9	U	
BROMODICHLOROMETHANE		5.2	U		4	U		4.7	U		4.9	U	
BROMOFORM		5.2	U		4	U		4.7	U		4.9	U	
BROMOMETHANE		10	U		8	U		9.3	U		9.8	U	
CARBON DISULFIDE		5.2	U		4	U		4.7	U		4.9	U	
CARBON TETRACHLORIDE		5.2	U		4	U		4.7	U		4.9	U	
CHLOROBENZENE		5.2	U		4	U		4.7	U		4.9	U	
CHLORODIBROMOMETHANE		5.2	U		4	U		4.7	U		4.9	U	
CHLOROETHANE		10	U		8	U		9.3	U		9.8	U	
CHLOROFORM		5.2	U		4	U		4.7	U		4.9	U	
CHLOROMETHANE		10	U		8	U		9.3	U		9.8	U	
CIS-1,2-DICHLOROETHENE		5.2	U		4	U		4.7	U		4.9	U	
CIS-1,3-DICHLOROPROPENE		5.2	U		4	U		4.7	U		4.9	U	
CYCLOHEXANE		5.2	U		4	U		4.7	U		4.9	U	
DICHLORODIFLUOROMETHANE		10	U		8	U		9.3	U		9.8	U	
ETHYLBENZENE		5.2	U		4	U		4.7	U		4.9	U	
ISOPROPYLBENZENE		5.2	U		4	U		4.7	U		4.9	U	
METHYL ACETATE		10	U		8	U		9.3	U		9.8	U	

PROJ_NO: 00870	NSAMPLE	CRP-TP06-0405		
SDG: CARPT001	LAB_ID	0905122-06		
FRACTION: OV	SAMP_DATE	5/13/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	83.5		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5.2	U	
1,1,2,2-TETRACHLOROETHANE		5.2	U	
1,1,2-TRICHLOROETHANE		5.2	U	
1,1-DICHLOROETHANE		5.2	U	
1,1-DICHLOROETHENE		5.2	U	
1,2,4-TRICHLOROBENZENE		5.2	U	
1,2-DIBROMO-3-CHLOROPROPANE		5.2	U	
1,2-DIBROMOETHANE		5.2	U	
1,2-DICHLOROBENZENE		5.2	U	
1,2-DICHLOROETHANE		5.2	U	
1,2-DICHLOROPROPANE		5.2	U	
1,3-DICHLOROBENZENE		5.2	U	
1,4-DICHLOROBENZENE		5.2	U	
2-BUTANONE		52	UJ	C
2-HEXANONE		10	U	
4-METHYL-2-PENTANONE		10	U	
ACETONE		52	UJ	C
BENZENE		5.2	U	
BROMODICHLOROMETHANE		5.2	U	
BROMOFORM		5.2	U	
BROMOMETHANE		10	U	
CARBON DISULFIDE		5.2	U	
CARBON TETRACHLORIDE		5.2	U	
CHLOROBENZENE		5.2	U	
CHLORODIBROMOMETHANE		5.2	U	
CHLOROETHANE		10	U	
CHLOROFORM		5.2	U	
CHLOROMETHANE		10	U	
CIS-1,2-DICHLOROETHENE		5.2	U	
CIS-1,3-DICHLOROPROPENE		5.2	U	
CYCLOHEXANE		5.2	U	
DICHLORODIFLUOROMETHANE		10	U	
ETHYLBENZENE		5.2	U	
ISOPROPYLBENZENE		5.2	U	
METHYL ACETATE		10	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0001			CRP-SB02-0001			CRP-SB03-0001			CRP-SB05-0001		
SDG: CARPT001	LAB_ID	0905101-04			0905101-06			0905101-05			0905101-03		
FRACTION: OV	SAMP_DATE	5/12/2009			5/12/2009			5/12/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	83.8			85.3			93.1			71.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		7.2	U		5.3	U		5.6	U		9.4	U	
METHYL TERT-BUTYL ETHER		7.2	U		5.3	U		5.6	U		9.4	U	
METHYLENE CHLORIDE		14	U		11	U		0.74	J	P	19	U	
STYRENE		7.2	U		5.3	U		5.6	U		9.4	U	
TETRACHLOROETHENE		7.2	U		5.3	U		5.6	U		9.4	U	
TOLUENE		7.2	U		5.3	U		5.6	U		9.4	U	
TOTAL XYLENES		7.2	U		5.3	U		5.6	U		9.4	U	
TRANS-1,2-DICHLOROETHENE		7.2	U		5.3	U		5.6	U		9.4	U	
TRANS-1,3-DICHLOROPROPENE		7.2	U		5.3	U		5.6	U		9.4	U	
TRICHLOROETHENE		7.2	U		5.3	U		5.6	U		9.4	U	
TRICHLOROFLUOROMETHANE		14	U		11	U		11	U		19	U	
VINYL CHLORIDE		14	U		11	U		11	U		19	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB06-0001			CRP-SB07-0001			CRP-SB08-0001			CRP-SB09-0001		
SDG: CARPT001	LAB_ID	0905122-09			0905122-11			0905122-10			0905101-02		
FRACTION: OV	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.6			82.2			87.3			82.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		5.2	U		6	U		5.6	U		8	U	
METHYL TERT-BUTYL ETHER		5.2	U		6	U		5.6	U		8	U	
METHYLENE CHLORIDE		10	U		12	U		11	U		16	U	
STYRENE		5.2	U		6	U		5.6	U		8	U	
TETRACHLOROETHENE		5.2	U		6	U		5.6	U		8	U	
TOLUENE		5.2	U		6	U		5.6	U		8	U	
TOTAL XYLENES		5.2	U		6	U		5.6	U		8	U	
TRANS-1,2-DICHLOROETHENE		5.2	U		6	U		5.6	U		8	U	
TRANS-1,3-DICHLOROPROPENE		5.2	U		6	U		5.6	U		8	U	
TRICHLOROETHENE		5.2	U		6	U		5.6	U		8	U	
TRICHLOROFLUOROMETHANE		10	U		12	U		11	U		16	U	
VINYL CHLORIDE		10	U		12	U		11	U		16	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB10-0001			CRP-SB11-0001			CRP-SB-DUP01			CRP-SS01-0006		
SDG: CARPT001	LAB_ID	0905122-07			0905122-12			0905122-08			0905122-04		
FRACTION: OV	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			FD			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	89.9			90.4			81.9			88.5		
	DUP_OF							CRP-SB07-0001					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		4.5	U		5.6	U		5.9	U		4.5	U	
METHYL TERT-BUTYL ETHER		4.5	U		5.6	U		5.9	U		4.5	U	
METHYLENE CHLORIDE		8.9	U		11	U		12	U		8.9	U	
STYRENE		4.5	U		5.6	U		5.9	U		4.5	U	
TETRACHLOROETHENE		4.5	U		5.6	U		5.9	U		4.5	U	
TOLUENE		4.5	U		5.6	U		5.9	U		4.5	U	
TOTAL XYLENES		4.5	U		5.6	U		5.9	U		4.5	U	
TRANS-1,2-DICHLOROETHENE		4.5	U		5.6	U		5.9	U		4.5	U	
TRANS-1,3-DICHLOROPROPENE		4.5	U		5.6	U		5.9	U		4.5	U	
TRICHLOROETHENE		4.5	U		5.6	U		5.9	U		4.5	U	
TRICHLOROFLUOROMETHANE		8.9	U		11	U		12	U		8.9	U	
VINYL CHLORIDE		8.9	U		11	U		12	U		8.9	U	

PROJ_NO: 00870	NSAMPLE	CRP-SS01-0612			CRP-SS02-0006			CRP-SS02-0612			CRP-TP01A-0506		
SDG: CARPT001	LAB_ID	0905122-02			0905122-01			0905122-03			0905083-01		
FRACTION: OV	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/11/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.5			80.2			84.2			86.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		5.1	U		5.6	U		5.3	U		4.9	U	
METHYL TERT-BUTYL ETHER		5.1	U		5.6	U		5.3	U		4.9	U	
METHYLENE CHLORIDE		10	U		11	U		11	U		9.8	U	
STYRENE		5.1	U		5.6	U		5.3	U		4.9	U	
TETRACHLOROETHENE		5.1	U		5.6	U		1.1	J	PR	2.5	J	PR
TOLUENE		5.1	U		5.6	U		5.3	U		4.9	U	
TOTAL XYLENES		5.1	U		5.6	U		5.3	U		4.9	U	
TRANS-1,2-DICHLOROETHENE		5.1	U		5.6	U		5.3	U		4.9	U	
TRANS-1,3-DICHLOROPROPENE		5.1	U		5.6	U		5.3	U		4.9	U	
TRICHLOROETHENE		5.1	U		5.6	U		5.3	U		4.9	U	
TRICHLOROFLUOROMETHANE		10	U		11	U		11	U		9.8	U	
VINYL CHLORIDE		10	U		11	U		11	U		9.8	U	

PROJ_NO: 00870	NSAMPLE	CRP-TP01B-0506			CRP-TP01B-0708			CRP-TP04-0506			CRP-TP05-0102		
SDG: CARPT001	LAB_ID	0905083-02			0905083-03			0905101-01			0905122-05		
FRACTION: OV	SAMP_DATE	5/11/2009			5/11/2009			5/12/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.6			88.4			92.3			86.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		5.2	U		4	U		4.7	U		4.9	U	
METHYL TERT-BUTYL ETHER		5.2	U		4	U		4.7	U		4.9	U	
METHYLENE CHLORIDE		10	U		8	U		9.3	U		9.8	U	
STYRENE		5.2	U		4	U		4.7	U		4.9	U	
TETRACHLOROETHENE		5.2	U		4	U		4.7	U		4.9	U	
TOLUENE		5.2	U		4	U		4.7	U		4.9	U	
TOTAL XYLENES		5.2	U		4	U		4.7	U		4.9	U	
TRANS-1,2-DICHLOROETHENE		5.2	U		4	U		4.7	U		4.9	U	
TRANS-1,3-DICHLOROPROPENE		5.2	U		4	U		4.7	U		4.9	U	
TRICHLOROETHENE		5.2	U		4	U		4.7	U		4.9	U	
TRICHLOROFLUOROMETHANE		10	U		8	U		9.3	U		9.8	U	
VINYL CHLORIDE		10	U		8	U		9.3	U		9.8	U	

PROJ_NO: 00870	NSAMPLE	CRP-TP06-0405		
SDG: CARPT001	LAB_ID	0905122-06		
FRACTION: OV	SAMP_DATE	5/13/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	83.5		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
METHYL CYCLOHEXANE		5.2	U	
METHYL TERT-BUTYL ETHER		5.2	U	
METHYLENE CHLORIDE		10	U	
STYRENE		5.2	U	
TETRACHLOROETHENE		5.2	U	
TOLUENE		5.2	U	
TOTAL XYLENES		5.2	U	
TRANS-1,2-DICHLOROETHENE		5.2	U	
TRANS-1,3-DICHLOROPROPENE		5.2	U	
TRICHLOROETHENE		5.2	U	
TRICHLOROFLUOROMETHANE		10	U	
VINYL CHLORIDE		10	U	

PROJ_NO: 00870	NSAMPLE	CRP-TB01-051109			CRP-TB02-051209			CRP-TB03-051309		
SDG: CARPT001	LAB_ID	0905083-04			0905101-07			0905122-13		
FRACTION: OV	SAMP_DATE	5/11/2009			5/12/2009			5/13/2009		
MEDIA: WATER	QC_TYPE	TB			TB			TB		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS									
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5	U		5	U		5	U	
1,1,2,2-TETRACHLOROETHANE		5	U		5	U		5	U	
1,1,2-TRICHLOROETHANE		5	U		5	U		5	U	
1,1-DICHLOROETHANE		5	U		5	U		5	U	
1,1-DICHLOROETHENE		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE		5	U		5	U		5	U	A
1,2-DIBROMO-3-CHLOROPROPANE		5	U		5	U		5	U	
1,2-DIBROMOETHANE		5	U		5	U		5	U	
1,2-DICHLOROBENZENE		5	U		5	U		5	U	
1,2-DICHLOROETHANE		5	U		5	U		5	U	
1,2-DICHLOROPROPANE		5	U		5	U		5	U	
1,3-DICHLOROBENZENE		5	U		5	U		5	U	
1,4-DICHLOROBENZENE		5	U		5	U		5	U	
2-BUTANONE		50	U		50	U		50	U	
2-HEXANONE		10	U		10	U		10	UJ	C
4-METHYL-2-PENTANONE		10	U		10	U		10	U	
ACETONE		50	U		50	U		50	UJ	C
BENZENE		5	U		5	U		5	U	
BROMODICHLOROMETHANE		5	U		5	U		5	U	
BROMOFORM		5	UJ	C	5	UJ	C	5	U	
BROMOMETHANE		10	U		10	UJ	E	10	U	
CARBON DISULFIDE		5	U		5	U		5	U	
CARBON TETRACHLORIDE		5	U		5	U		5	U	
CHLOROBENZENE		5	U		5	U		5	U	
CHLORODIBROMOMETHANE		5	U		5	UJ	C	5	U	
CHLOROETHANE		10	U		10	U		10	U	
CHLOROFORM		5	U		5	U		5	U	
CHLOROMETHANE		10	U		10	U		10	U	
CIS-1,2-DICHLOROETHENE		5	U		5	U		5	U	
CIS-1,3-DICHLOROPROPENE		5	U		5	U		5	U	
CYCLOHEXANE		5	U		5	U		5	U	
DICHLORODIFLUOROMETHANE		10	UJ	C	10	UJ	C	10	U	
ETHYLBENZENE		5	U		5	U		5	U	
ISOPROPYLBENZENE		5	U		5	U		5	U	
METHYL ACETATE		10	U		10	U		10	U	

PROJ_NO: 00870 SDG: CARPT001 FRACTION: OV MEDIA: WATER	NSAMPLE	CRP-TB01-051109			CRP-TB02-051209			CRP-TB03-051309		
	LAB_ID	0905083-04			0905101-07			0905122-13		
	SAMP_DATE	5/11/2009			5/12/2009			5/13/2009		
	QC_TYPE	TB			TB			TB		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS									
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER		5	U		5	U		5	U	
METHYLENE CHLORIDE		10	U		10	U		10	U	
STYRENE		5	U		5	U		5	U	
TETRACHLOROETHENE		5	UJ	C	5	UJ	C	5	U	
TOLUENE		5	U		5	U		5	U	
TOTAL XYLENES		5	U		5	U		5	U	
TRANS-1,2-DICHLOROETHENE		5	U		5	U		5	U	
TRANS-1,3-DICHLOROPROPENE		5	U		5	U		5	U	
TRICHLOROETHENE		5	U		5	U		5	U	
TRICHLOROFLUOROMETHANE		10	U		10	U		10	U	
VINYL CHLORIDE		10	U		10	U		10	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0001			CRP-SB02-0001			CRP-SB03-0001			CRP-SB05-0001		
SDG: CARPT001	LAB_ID	0905101-04			0905101-06			0905101-05			0905101-03		
FRACTION: OS	SAMP_DATE	5/12/2009			5/12/2009			5/12/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	83.8			85.3			93.1			71.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		2000	U		2000	U		1800	U		2300	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		4000	U		3900	U		3600	U		4700	U	
2,4,5-TRICHLOROPHENOL		2000	U		2000	U		1800	U		2300	U	
2,4,6-TRICHLOROPHENOL		2000	U		2000	U		1800	U		2300	U	
2,4-DICHLOROPHENOL		2000	U		2000	U		1800	U		2300	U	
2,4-DIMETHYLPHENOL		8000	U		7800	U		7200	U		9400	U	
2,4-DINITROPHENOL		20000	U		20000	U		18000	U		23000	U	
2,4-DINITROTOLUENE		2000	U		2000	U		1800	U		2300	U	
2,6-DINITROTOLUENE		2000	U		2000	U		1800	U		2300	U	
2-CHLORONAPHTHALENE		2000	U		2000	U		1800	U		2300	U	
2-CHLOROPHENOL		2000	U		2000	U		1800	U		2300	U	
2-METHYLNAPHTHALENE		2000	U		2000	U		1800	U		2300	U	
2-METHYLPHENOL		2000	U		2000	U		1800	U		2300	U	
2-NITROANILINE		8000	U		7800	U		7200	U		9400	U	
2-NITROPHENOL		2000	U		2000	U		1800	U		2300	U	
3,3'-DICHLOROBENZIDINE		2000	U		2000	U		1800	U		2300	U	
3-NITROANILINE		8000	U		7800	U		7200	U		9400	U	
4,6-DINITRO-2-METHYLPHENOL		8000	U		7800	U		7200	U		9400	U	
4-BROMOPHENYL PHENYL ETHER		2000	U		2000	U		1800	U		2300	U	
4-CHLORO-3-METHYLPHENOL		2000	U		2000	U		1800	U		2300	U	
4-CHLOROANILINE		2000	U		2000	U		1800	U		2300	U	
4-CHLOROPHENYL PHENYL ETHER		2000	U		2000	U		1800	U		2300	U	
4-METHYLPHENOL		2000	U		2000	U		1800	U		2300	U	
4-NITROANILINE		8000	U		7800	U		7200	U		9400	U	
4-NITROPHENOL		8000	U		7800	U		7200	U		9400	U	
ACENAPHTHENE		2000	U		2000	U		1800	U		2300	U	
ACENAPHTHYLENE		2000	U		2000	U		1800	U		1200	J	EP
ACETOPHENONE		2000	U		2000	U		1800	U		2300	U	
ANTHRACENE		2000	U		2000	U		1800	U		2800	J	E
ATRAZINE		2000	UJ	C	2000	UJ	C	1800	UJ	C	2300	UJ	C
BENZALDEHYDE		2000	U		2000	U		1800	U		2300	U	
BENZO(A)ANTHRACENE		1100	J	EP	2000	U		1800	U		22000	J	E
BENZO(A)PYRENE		1700			390	U		360	U		13000	J	N
BENZO(B)FLUORANTHENE		1200	J	P	2000	U		1800	U		30000	J	N
BENZO(G,H,I)PERYLENE		1300	J	P	2000	U		1800	U		7900	J	N

PROJ_NO: 00870	NSAMPLE	CRP-SB06-0001			CRP-SB07-0001			CRP-SB08-0001			CRP-SB09-0001		
SDG: CARPT001	LAB_ID	0905122-09			0905122-11			0905122-10			0905101-02		
FRACTION: OS	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.6			82.2			87.3			82.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		1800	U		400	U		380	U		300	J	P
2,2'-OXYBIS(1-CHLOROPROPANE)		3600	U		810	U		760	U		4100	U	
2,4,5-TRICHLOROPHENOL		1800	U		400	U		380	U		2000	U	
2,4,6-TRICHLOROPHENOL		1800	U		400	U		380	U		2000	U	
2,4-DICHLOROPHENOL		1800	U		400	U		380	U		2000	U	
2,4-DIMETHYLPHENOL		7300	U		1600	U		1500	U		8100	U	
2,4-DINITROPHENOL		18000	U		4000	UJ	C	3800	U		20000	U	
2,4-DINITROTOLUENE		1800	U		400	U		380	U		2000	U	
2,6-DINITROTOLUENE		1800	UJ	C	400	U		380	U		2000	U	
2-CHLORONAPHTHALENE		1800	U		400	U		380	U		2000	U	
2-CHLOROPHENOL		1800	U		400	U		380	U		2000	U	
2-METHYLNAPHTHALENE		1800	U		400	U		380	U		1400	J	P
2-METHYLPHENOL		1800	U		400	U		380	U		2000	U	
2-NITROANILINE		7300	U		1600	U		1500	U		8100	U	
2-NITROPHENOL		1800	U		400	U		380	U		2000	U	
3,3'-DICHLOROBENZIDINE		1800	U		400	U		380	U		2000	UJ	N
3-NITROANILINE		7300	U		1600	U		1500	U		8100	U	
4,6-DINITRO-2-METHYLPHENOL		7300	U		1600	U		1500	U		8100	U	
4-BROMOPHENYL PHENYL ETHER		1800	U		400	U		380	U		2000	U	
4-CHLORO-3-METHYLPHENOL		1800	U		400	U		380	U		2000	U	
4-CHLOROANILINE		1800	U		400	U		380	U		2000	U	
4-CHLOROPHENYL PHENYL ETHER		1800	U		400	U		380	U		2000	U	
4-METHYLPHENOL		1800	U		400	U		380	U		2000	U	
4-NITROANILINE		7300	U		1600	U		1500	U		8100	U	
4-NITROPHENOL		7300	U		1600	U		1500	UJ	C	8100	U	
ACENAPHTHENE		1800	U		400	U		380	U		15000		
ACENAPHTHYLENE		1800	U		400	U		380	U		2000	U	
ACETOPHENONE		1800	U		400	U		380	U		2000	U	
ANTHRACENE		1800	U		400	U		380	U		16000	J	E
ATRAZINE		1800	U		400	U		380	U		2000	UJ	C
BENZALDEHYDE		1800	U		400	U		380	U		2000	U	
BENZO(A)ANTHRACENE		240	J	EP	400	U		380	U				
BENZO(A)PYRENE		360	U		81	U		76	U				
BENZO(B)FLUORANTHENE		1800	U		400	U		49	J	P			
BENZO(G,H,I)PERYLENE		1800	U		400	U		380	U				

PROJ_NO: 00870	NSAMPLE	CRP-SB09-0001DL			CRP-SB10-0001			CRP-SB11-0001			CRP-SB-DUP01		
SDG: CARPT001	LAB_ID	0905101-02DL			0905122-07			0905122-12			0905122-08		
FRACTION: OS	SAMP_DATE	5/12/2009			5/13/2009			5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			FD		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	82.1			89.9			90.4			81.9		
	DUP_OF										CRP-SB07-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL					370	U		1800	U		2000	U	
2,2'-OXYBIS(1-CHLOROPROPANE)					740	U		3700	U		4100	U	
2,4,5-TRICHLOROPHENOL					370	U		1800	U		2000	U	
2,4,6-TRICHLOROPHENOL					370	U		1800	U		2000	U	
2,4-DICHLOROPHENOL					370	U		1800	U		2000	U	
2,4-DIMETHYLPHENOL					1500	U		7400	U		8100	U	
2,4-DINITROPHENOL					3700	U		18000	U		20000	U	
2,4-DINITROTOLUENE					370	U		1800	UJ	C	2000	UJ	C
2,6-DINITROTOLUENE					370	U		1800	U		2000	U	
2-CHLORONAPHTHALENE					370	U		1800	U		2000	U	
2-CHLOROPHENOL					370	U		1800	U		2000	U	
2-METHYLNAPHTHALENE					370	U		1800	U		2000	U	
2-METHYLPHENOL					370	U		1800	U		2000	U	
2-NITROANILINE					1500	U		7400	U		8100	U	
2-NITROPHENOL					370	U		1800	U		2000	U	
3,3'-DICHLOROBENZIDINE					370	U		1800	U		2000	U	
3-NITROANILINE					1500	U		7400	U		8100	U	
4,6-DINITRO-2-METHYLPHENOL					1500	U		7400	U		8100	U	
4-BROMOPHENYL PHENYL ETHER					370	U		1800	U		2000	U	
4-CHLORO-3-METHYLPHENOL					370	U		1800	U		2000	U	
4-CHLOROANILINE					370	U		1800	U		2000	U	
4-CHLOROPHENYL PHENYL ETHER					370	U		1800	U		2000	U	
4-METHYLPHENOL					370	U		1800	U		2000	U	
4-NITROANILINE					1500	U		7400	U		8100	U	
4-NITROPHENOL					1500	UJ	C	7400	U		8100	U	
ACENAPHTHENE					370	U		1800	U		2000	U	
ACENAPHTHYLENE					370	U		1800	U		2000	U	
ACETOPHENONE					370	U		1800	U		2000	U	
ANTHRACENE					370	U		150	J	EP	2000	U	
ATRAZINE					370	U		1800	U		2000	U	
BENZALDEHYDE					370	U		1800	U		2000	U	
BENZO(A)ANTHRACENE		91000	J	E	70	J	EP	640	J	EP	2000	U	
BENZO(A)PYRENE		120000			74	J	P	940			410	U	
BENZO(B)FLUORANTHENE		130000			120	J	P	970	J	P	2000	U	
BENZO(G,H,I)PERYLENE		78000			370	U		850	J	P	2000	U	

PROJ_NO: 00870	NSAMPLE	CRP-SS01-0006			CRP-SS01-0612			CRP-SS02-0006			CRP-SS02-0612		
SDG: CARPT001	LAB_ID	0905122-04			0905122-02			0905122-01			0905122-03		
FRACTION: OS	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.5			90.5			80.2			84.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		1900	U		1800	U		420	U		2000	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		3800	U		3700	U		830	U		4000	U	
2,4,5-TRICHLOROPHENOL		1900	U		1800	U		420	U		2000	U	
2,4,6-TRICHLOROPHENOL		1900	U		1800	U		420	U		2000	U	
2,4-DICHLOROPHENOL		1900	U		1800	U		420	U		2000	U	
2,4-DIMETHYLPHENOL		7500	U		7400	U		1700	U		7900	U	
2,4-DINITROPHENOL		19000	U		18000	U		4200	U		20000	U	
2,4-DINITROTOLUENE		1900	UJ	C	1800	UJ	C	420	U		2000	UJ	C
2,6-DINITROTOLUENE		1900	U		1800	U		420	UJ	D	2000	U	
2-CHLORONAPHTHALENE		1900	U		1800	U		420	U		2000	U	
2-CHLOROPHENOL		1900	U		1800	U		420	U		2000	U	
2-METHYLNAPHTHALENE		580	J	P	1800	U		420	U		2000	U	
2-METHYLPHENOL		1900	U		1800	U		420	U		2000	U	
2-NITROANILINE		7500	U		7400	U		1700	U		7900	U	
2-NITROPHENOL		1900	U		1800	U		420	U		2000	U	
3,3'-DICHLOROBENZIDINE		1900	U		1800	U		420	U		2000	U	
3-NITROANILINE		7500	U		7400	U		1700	U		7900	U	
4,6-DINITRO-2-METHYLPHENOL		7500	U		7400	U		1700	U		7900	U	
4-BROMOPHENYL PHENYL ETHER		1900	U		1800	U		420	U		2000	U	
4-CHLORO-3-METHYLPHENOL		1900	U		1800	U		420	U		2000	U	
4-CHLOROANILINE		1900	U		1800	U		420	U		2000	U	
4-CHLOROPHENYL PHENYL ETHER		1900	U		1800	U		420	U		2000	U	
4-METHYLPHENOL		1900	U		1800	U		420	U		2000	U	
4-NITROANILINE		7500	U		7400	U		1700	U		7900	U	
4-NITROPHENOL		7500	U		7400	U		1700	UJ	C	7900	U	
ACENAPHTHENE		1900	U		1800	U		420	U		2000	U	
ACENAPHTHYLENE		1900	U		1800	U		420	U		2000	U	
ACETOPHENONE		1900	U		1800	U		420	U		2000	U	
ANTHRACENE		1900	U		1800	U		420	U		2000	U	
ATRAZINE		1900	U		1800	U		420	U		2000	U	
BENZALDEHYDE		1900	U		1800	U		420	U		2000	U	
BENZO(A)ANTHRACENE		1900	U		1800	U		420	U		2000	U	
BENZO(A)PYRENE		380	U		370	U		83	U		400	U	
BENZO(B)FLUORANTHENE		1900	U		1800	U		420	U		2000	U	
BENZO(G,H,I)PERYLENE		1900	U		1800	U		420	U		2000	U	

PROJ_NO: 00870	NSAMPLE	CRP-TP01A-0506			CRP-TP01B-0506			CRP-TP01B-0708			CRP-TP04-0506		
SDG: CARPT001	LAB_ID	0905083-01			0905083-02			0905083-03			0905101-01		
FRACTION: OS	SAMP_DATE	5/11/2009			5/11/2009			5/11/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.6			86.6			88.4			92.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		380	U		380	U		380	U		360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		770	U		770	U		750	U		720	U	
2,4,5-TRICHLOROPHENOL		380	U		380	U		380	U		360	U	
2,4,6-TRICHLOROPHENOL		380	U		380	U		380	U		360	U	
2,4-DICHLOROPHENOL		380	U		380	U		380	U		360	U	
2,4-DIMETHYLPHENOL		1500	U		1500	U		1500	U		1400	U	
2,4-DINITROPHENOL		3800	U		3800	U		3800	U		3600	U	
2,4-DINITROTOLUENE		380	U		380	U		380	U		360	U	
2,6-DINITROTOLUENE		380	U		380	U		380	U		360	U	
2-CHLORONAPHTHALENE		380	U		380	U		380	U		360	U	
2-CHLOROPHENOL		380	U		380	U		380	U		360	U	
2-METHYLNAPHTHALENE		380	U		380	U		380	U		360	U	
2-METHYLPHENOL		380	U		380	U		380	U		360	U	
2-NITROANILINE		1500	U		1500	U		1500	U		1400	U	
2-NITROPHENOL		380	U		380	U		380	U		360	U	
3,3'-DICHLOROBENZIDINE		380	U		380	U		380	U		360	U	
3-NITROANILINE		1500	U		1500	U		1500	U		1400	U	
4,6-DINITRO-2-METHYLPHENOL		1500	U		1500	U		1500	U		1400	U	
4-BROMOPHENYL PHENYL ETHER		380	U		380	U		380	U		360	U	
4-CHLORO-3-METHYLPHENOL		380	U		380	U		380	U		360	U	
4-CHLOROANILINE		380	U		380	U		380	U		360	U	
4-CHLOROPHENYL PHENYL ETHER		380	U		380	U		380	U		360	U	
4-METHYLPHENOL		380	U		380	U		380	U		360	U	
4-NITROANILINE		1500	U		1500	U		1500	U		1400	U	
4-NITROPHENOL		1500	UJ	C	1500	UJ	C	1500	UJ	C	1400	UJ	C
ACENAPHTHENE		380	U		380	U		380	U		360	U	
ACENAPHTHYLENE		380	U		380	U		380	U		360	U	
ACETOPHENONE		380	U		380	U		380	U		360	U	
ANTHRACENE		380	U		380	U		380	U		360	U	
ATRAZINE		380	U		380	U		380	U		360	U	
BENZALDEHYDE		380	U		380	U		380	U		360	U	
BENZO(A)ANTHRACENE		86	J	ENP	380	U		380	U		360	U	
BENZO(A)PYRENE		90	J	N	77	U		75	U		72	U	
BENZO(B)FLUORANTHENE		100	J	NP	380	U		380	U		360	U	
BENZO(G,H,I)PERYLENE		380	U		380	U		380	U		360	U	

PROJ_NO: 00870	NSAMPLE	CRP-TP05-0102			CRP-TP06-0405		
SDG: CARPT001	LAB_ID	0905122-05			0905122-06		
FRACTION: OS	SAMP_DATE	5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	86.0			83.5		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		390	U		2000	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		780	U		4000	U	
2,4,5-TRICHLOROPHENOL		390	U		2000	U	
2,4,6-TRICHLOROPHENOL		390	U		2000	U	
2,4-DICHLOROPHENOL		390	U		2000	U	
2,4-DIMETHYLPHENOL		1600	U		8000	U	
2,4-DINITROPHENOL		3900	U		20000	U	
2,4-DINITROTOLUENE		390	U		2000	UJ	C
2,6-DINITROTOLUENE		390	U		2000	U	
2-CHLORONAPHTHALENE		390	U		2000	U	
2-CHLOROPHENOL		390	U		2000	U	
2-METHYLNAPHTHALENE		390	U		2000	U	
2-METHYLPHENOL		390	U		2000	U	
2-NITROANILINE		1600	U		8000	U	
2-NITROPHENOL		390	U		2000	U	
3,3'-DICHLOROBENZIDINE		390	U		2000	U	
3-NITROANILINE		1600	U		8000	U	
4,6-DINITRO-2-METHYLPHENOL		1600	U		8000	U	
4-BROMOPHENYL PHENYL ETHER		390	U		2000	U	
4-CHLORO-3-METHYLPHENOL		390	U		2000	U	
4-CHLOROANILINE		390	U		2000	U	
4-CHLOROPHENYL PHENYL ETHER		390	U		2000	U	
4-METHYLPHENOL		390	U		2000	U	
4-NITROANILINE		1600	U		8000	U	
4-NITROPHENOL		1600	UJ	C	8000	U	
ACENAPHTHENE		390	U		2000	U	
ACENAPHTHYLENE		390	U		1200	J	EP
ACETOPHENONE		390	U		2000	U	
ANTHRACENE		390	U		930	J	EP
ATRAZINE		390	U		2000	U	
BENZALDEHYDE		390	U		2000	U	
BENZO(A)ANTHRACENE		390	U		10000	J	E
BENZO(A)PYRENE		78	U		9400		
BENZO(B)FLUORANTHENE		44	J	P	10000		
BENZO(G,H,I)PERYLENE		390	U		5200		

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0001			CRP-SB02-0001			CRP-SB03-0001			CRP-SB05-0001		
SDG: CARPT001	LAB_ID	0905101-04			0905101-06			0905101-05			0905101-03		
FRACTION: OS	SAMP_DATE	5/12/2009			5/12/2009			5/12/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	83.8			85.3			93.1			71.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		280	J	P	2000	U		1800	U		13000	J	N
BIS(2-CHLOROETHOXY)METHANE		2000	U		2000	U		1800	U		2300	U	
BIS(2-CHLOROETHYL)ETHER		2000	U		2000	U		1800	U		2300	U	
BIS(2-ETHYLHEXYL)PHTHALATE		2000	U		2000	U		1800	U		2300	U	
BUTYL BENZYL PHTHALATE		2000	U		2000	U		1800	U		2300	U	
CAPROLACTAM		2000	UJ	C	2000	UJ	C	1800	UJ	C	2300	UJ	C
CARBAZOLE		4000	U		3900	U		3600	U		4700	U	
CHRYSENE		1600	J	E	390	U		360	U		22000	J	E
DIBENZO(A,H)ANTHRACENE		400	U		390	U		360	U		3400	J	N
DIBENZOFURAN		2000	U		2000	U		1800	U		180	J	P
DIETHYL PHTHALATE		2000	U		2000	U		1800	U		2300	U	
DIMETHYL PHTHALATE		2000	U		2000	U		1800	U		2300	U	
DI-N-BUTYL PHTHALATE		2000	U		2000	U		1800	U		2300	U	
DI-N-OCTYL PHTHALATE		2000	UJ	C	2000	UJ	C	1800	UJ	C	2300	UJ	CN
FLUORANTHENE		870	J	EP	2000	U		1800	U		39000	J	E
FLUORENE		2000	U		2000	U		1800	U		230	J	P
HEXACHLOROBENZENE		400	U		390	U		360	U		470	U	
HEXACHLOROBUTADIENE		2000	U		2000	U		1800	U		2300	U	
HEXACHLOROCYCLOPENTADIENE		2000	U		2000	U		1800	U		2300	U	
HEXACHLOROETHANE		4000	U		3900	U		3600	U		4700	U	
INDENO(1,2,3-CD)PYRENE		1400	J	P	2000	U		1800	U		11000	J	N
ISOPHORONE		2000	U		2000	U		1800	U		2300	U	
NAPHTHALENE		2000	U		2000	U		1800	U		350	J	P
NITROBENZENE		2000	U		2000	U		1800	U		2300	U	
N-NITROSO-DI-N-PROPYLAMINE		2000	U		2000	U		1800	U		2300	U	
N-NITROSODIPHENYLAMINE		2000	U		2000	U		1800	U		2300	U	
PENTACHLOROPHENOL		8000	U		7800	U		7200	U		9400	U	
PHENANTHRENE		620	J	P	230	J	P	1800	U		2900		
PHENOL		2000	U		2000	U		1800	U		2300	U	
PYRENE		1500	J	P	260	J	P	1800	U		38000		

PROJ_NO: 00870	NSAMPLE	CRP-SB06-0001			CRP-SB07-0001			CRP-SB08-0001			CRP-SB09-0001		
SDG: CARPT001	LAB_ID	0905122-09			0905122-11			0905122-10			0905101-02		
FRACTION: OS	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.6			82.2			87.3			82.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		1800	U		400	U		380	U				
BIS(2-CHLOROETHOXY)METHANE		1800	U		400	U		380	U		2000	U	
BIS(2-CHLOROETHYL)ETHER		1800	U		400	U		380	U		2000	U	
BIS(2-ETHYLHEXYL)PHTHALATE		1800	U		400	U		380	UJ	AE	2000	UJ	N
BUTYL BENZYL PHTHALATE		1800	U		400	U		380	U		2000	UJ	N
CAPROLACTAM		1800	U		400	U		380	U		2000	UJ	C
CARBAZOLE		3600	U		810	U		760	U		11000		
CHRYSENE		220	J	EP	81	U		76	U				
DIBENZO(A,H)ANTHRACENE		360	U		81	U		76	U		22000	J	N
DIBENZOFURAN		1800	U		400	U		380	U		3500		
DIETHYL PHTHALATE		1800	U		400	U		380	U		2000	U	
DIMETHYL PHTHALATE		1800	U		400	U		380	U		2000	U	
DI-N-BUTYL PHTHALATE		1800	U		400	U		380	U		2000	U	
DI-N-OCTYL PHTHALATE		1800	U		400	UJ	C	380	U		2000	UJ	CN
FLUORANTHENE		430	J	EP	400	U		380	U				
FLUORENE		1800	U		400	U		380	U		6100		
HEXACHLOROBENZENE		360	U		81	U		76	U		410	U	
HEXACHLOROBUTADIENE		1800	U		400	U		380	U		2000	U	
HEXACHLOROCYCLOPENTADIENE		1800	U		400	U		380	UJ	C	2000	U	
HEXACHLOROETHANE		3600	U		810	U		760	U		4100	U	
INDENO(1,2,3-CD)PYRENE		1800	U		400	U		380	U				
ISOPHORONE		1800	U		400	U		380	U		2000	U	
NAPHTHALENE		1800	U		400	U		380	U		3700		
NITROBENZENE		1800	U		400	U		380	U		2000	U	
N-NITROSO-DI-N-PROPYLAMINE		1800	U		400	U		380	U		2000	U	
N-NITROSODIPHENYLAMINE		1800	U		400	U		380	U		2000	U	
PENTACHLOROPHENOL		7300	U		1600	U		1500	U		8100	U	
PHENANTHRENE		220	J	P	31	J	P	380	U				
PHENOL		1800	U		400	U		380	U		2000	U	
PYRENE		520	J	P	72	J	DP	66	J	P			

PROJ_NO: 00870	NSAMPLE	CRP-SB09-0001DL			CRP-SB10-0001			CRP-SB11-0001			CRP-SB-DUP01		
SDG: CARPT001	LAB_ID	0905101-02DL			0905122-07			0905122-12			0905122-08		
FRACTION: OS	SAMP_DATE	5/12/2009			5/13/2009			5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			FD		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	82.1			89.9			90.4			81.9		
	DUP_OF										CRP-SB07-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		47000			46	J	EP	1800	U		2000	U	
BIS(2-CHLOROETHOXY)METHANE					370	U		1800	U		2000	U	
BIS(2-CHLOROETHYL)ETHER					370	U		1800	U		2000	U	
BIS(2-ETHYLHEXYL)PHTHALATE					370	UJ	AE	1800	U		2000	U	
BUTYL BENZYL PHTHALATE					370	U		1800	U		2000	U	
CAPROLACTAM					370	U		1800	U		2000	U	
CARBAZOLE					740	U		3700	U		4100	U	
CHRYSENE		100000	J	E	80	J	E	660	J	E	410	U	
DIBENZO(A,H)ANTHRACENE					74	U		370	U		410	U	
DIBENZOFURAN					370	U		1800	U		2000	U	
DIETHYL PHTHALATE					370	U		1800	U		2000	U	
DIMETHYL PHTHALATE					370	U		1800	U		2000	U	
DI-N-BUTYL PHTHALATE					370	U		1800	U		2000	U	
DI-N-OCTYL PHTHALATE					370	U		1800	U		2000	U	
FLUORANTHENE		110000	J	E	140	J	ENP	1400	J	P	2000	U	
FLUORENE					370	U		1800	U		2000	U	
HEXACHLOROBENZENE					74	U		370	U		410	U	
HEXACHLOROBUTADIENE					370	U		1800	U		2000	U	
HEXACHLOROCYCLOPENTADIENE					370	UJ	C	1800	U		2000	U	
HEXACHLOROETHANE					740	U		3700	U		4100	U	
INDENO(1,2,3-CD)PYRENE		81000			370	U		1800	U		2000	U	
ISOPHORONE					370	U		1800	U		2000	U	
NAPHTHALENE					370	U		1800	U		2000	U	
NITROBENZENE					370	U		1800	U		2000	U	
N-NITROSO-DI-N-PROPYLAMINE					370	U		1800	U		2000	U	
N-NITROSODIPHENYLAMINE					370	U		1800	U		2000	U	
PENTACHLOROPHENOL					1500	U		7400	U		8100	U	
PHENANTHRENE		63000			59	J	NP	940	J	P	2000	U	
PHENOL					370	U		1800	U		2000	U	
PYRENE		120000			160	J	P	1400	J	P	2000	U	

PROJ_NO: 00870	NSAMPLE	CRP-SS01-0006			CRP-SS01-0612			CRP-SS02-0006			CRP-SS02-0612		
SDG: CARPT001	LAB_ID	0905122-04			0905122-02			0905122-01			0905122-03		
FRACTION: OS	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.5			90.5			80.2			84.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		1900	U		1800	U		420	U		2000	U	
BIS(2-CHLOROETHOXY)METHANE		1900	U		1800	U		420	U		2000	U	
BIS(2-CHLOROETHYL)ETHER		1900	U		1800	U		420	U		2000	U	
BIS(2-ETHYLHEXYL)PHTHALATE		1900	U		1800	U		420	UJ	AE	2000	U	
BUTYL BENZYL PHTHALATE		1900	U		1800	U		420	U		2000	U	
CAPROLACTAM		1900	U		1800	U		420	U		2000	U	
CARBAZOLE		3800	U		3700	U		830	U		4000	U	
CHRYSENE		380	U		370	U		83	U		400	U	
DIBENZO(A,H)ANTHRACENE		380	U		370	U		83	U		400	U	
DIBENZOFURAN		180	J	P	1800	U		420	U		2000	U	
DIETHYL PHTHALATE		1900	U		1800	U		420	U		2000	U	
DIMETHYL PHTHALATE		1900	U		1800	U		420	U		2000	U	
DI-N-BUTYL PHTHALATE		1900	U		1800	U		420	U		2000	U	
DI-N-OCTYL PHTHALATE		1900	U		1800	U		420	U		2000	U	
FLUORANTHENE		1900	U		1800	U		420	U		2000	U	
FLUORENE		1900	U		1800	U		420	U		2000	U	
HEXACHLOROBENZENE		380	U		370	U		83	U		400	U	
HEXACHLOROBUTADIENE		1900	U		1800	U		420	U		2000	U	
HEXACHLOROCYCLOPENTADIENE		1900	U		1800	U		420	UJ	C	2000	U	
HEXACHLOROETHANE		3800	U		3700	U		830	U		4000	U	
INDENO(1,2,3-CD)PYRENE		1900	U		1800	U		420	U		2000	U	
ISOPHORONE		1900	U		1800	U		420	U		2000	U	
NAPHTHALENE		250	J	P	1800	U		420	U		2000	U	
NITROBENZENE		1900	U		1800	U		420	U		2000	U	
N-NITROSO-DI-N-PROPYLAMINE		1900	U		1800	U		420	U		2000	U	
N-NITROSODIPHENYLAMINE		1900	U		1800	U		420	U		2000	U	
PENTACHLOROPHENOL		7500	U		7400	U		1700	U		7900	U	
PHENANTHRENE		530	J	P	1800	U		420	U		2000	U	
PHENOL		1900	U		1800	U		420	U		2000	U	
PYRENE		280	J	P	1800	U		420	U		2000	U	

PROJ_NO: 00870	NSAMPLE	CRP-TP01A-0506			CRP-TP01B-0506			CRP-TP01B-0708			CRP-TP04-0506		
SDG: CARPT001	LAB_ID	0905083-01			0905083-02			0905083-03			0905101-01		
FRACTION: OS	SAMP_DATE	5/11/2009			5/11/2009			5/11/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.6			86.6			88.4			92.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		47	J	ENP	380	U		380	U		360	U	
BIS(2-CHLOROETHOXY)METHANE		380	U		380	U		380	U		360	U	
BIS(2-CHLOROETHYL)ETHER		380	U		380	U		380	U		360	U	
BIS(2-ETHYLHEXYL)PHTHALATE		380	UJ	AEN	380	U		380	UJ	AE	360	UJ	AE
BUTYL BENZYL PHTHALATE		380	U		380	U		380	U		360	U	
CAPROLACTAM		380	U	A	380	U		380	U		360	U	A
CARBAZOLE		770	U		770	U		750	U		720	U	
CHRYSENE		62	J	ENP	77	U		75	U		72	U	
DIBENZO(A,H)ANTHRACENE		77	U		77	U		75	U		72	U	
DIBENZOFURAN		380	U		380	U		380	U		360	U	
DIETHYL PHTHALATE		380	U		380	U		380	U		360	U	
DIMETHYL PHTHALATE		380	U		380	U		380	U		360	U	
DI-N-BUTYL PHTHALATE		380	U		380	U		380	U		360	U	
DI-N-OCTYL PHTHALATE		380	U		380	U		380	U		360	U	
FLUORANTHENE		80	J	NP	380	U		380	U		360	U	
FLUORENE		380	U		380	U		380	U		360	U	
HEXACHLOROBENZENE		77	U		77	U		75	U		72	U	
HEXACHLOROBUTADIENE		380	U		380	U		380	U		360	U	
HEXACHLOROCYCLOPENTADIENE		380	UJ	C	380	UJ	C	380	UJ	C	360	UJ	C
HEXACHLOROETHANE		770	U		770	U		750	U		720	U	
INDENO(1,2,3-CD)PYRENE		380	U		380	U		380	U		360	U	
ISOPHORONE		380	U		380	U		380	U		360	U	
NAPHTHALENE		380	U		380	U		380	U		360	U	
NITROBENZENE		380	U		380	U		380	U		360	U	
N-NITROSO-DI-N-PROPYLAMINE		380	U		380	U		380	U		360	U	
N-NITROSODIPHENYLAMINE		380	U		380	U		380	U		360	U	
PENTACHLOROPHENOL		1500	U		1500	U		1500	U		1400	U	
PHENANTHRENE		380	U		380	U		380	U		360	U	
PHENOL		380	U		380	U		380	U		360	U	
PYRENE		110	J	NP	380	U		380	U		360	U	

PROJ_NO: 00870	NSAMPLE	CRP-TP05-0102			CRP-TP06-0405		
SDG: CARPT001	LAB_ID	0905122-05			0905122-06		
FRACTION: OS	SAMP_DATE	5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	86.0			83.5		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		390	U		4300		
BIS(2-CHLOROETHOXY)METHANE		390	U		2000	U	
BIS(2-CHLOROETHYL)ETHER		390	U		2000	U	
BIS(2-ETHYLHEXYL)PHTHALATE		390	UJ	AE	2000	U	
BUTYL BENZYL PHTHALATE		390	U		2000	U	
CAPROLACTAM		390	U		2000	U	
CARBAZOLE		780	U		4000	U	
CHRYSENE		78	U		11000	J	E
DIBENZO(A,H)ANTHRACENE		78	U		1900		
DIBENZOFURAN		390	U		2000	U	
DIETHYL PHTHALATE		390	U		2000	U	
DIMETHYL PHTHALATE		390	U		2000	U	
DI-N-BUTYL PHTHALATE		390	U		2000	U	
DI-N-OCTYL PHTHALATE		390	U		2000	U	
FLUORANTHENE		390	U		15000	J	E
FLUORENE		390	U		290	J	P
HEXACHLOROBENZENE		78	U		400	U	
HEXACHLOROBUTADIENE		390	U		2000	U	
HEXACHLOROCYCLOPENTADIENE		390	UJ	C	2000	U	
HEXACHLOROETHANE		780	U		4000	U	
INDENO(1,2,3-CD)PYRENE		390	U		5400		
ISOPHORONE		390	U		2000	U	
NAPHTHALENE		390	U		250	J	P
NITROBENZENE		390	U		2000	U	
N-NITROSO-DI-N-PROPYLAMINE		390	U		2000	U	
N-NITROSODIPHENYLAMINE		390	U		2000	U	
PENTACHLOROPHENOL		1600	U		8000	U	
PHENANTHRENE		390	U		3800		
PHENOL		390	U		2000	U	
PYRENE		73	J	P	23000		

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0001			CRP-SB02-0001			CRP-SB02-0001DL			CRP-SB03-0001		
SDG: CARPT001	LAB_ID	0905101-04			0905101-06			0905101-06DL			0905101-05		
FRACTION: PEST/PCB	SAMP_DATE	5/12/2009			5/12/2009			5/12/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	83.8			85.3			85.3			93.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		1.2	J	U	0.78	UJ	H				5.7	UJ	U
4,4'-DDE		1.2			0.78	UJ	H				5.6		
4,4'-DDT		3.4	J	C				3700	UJ	U	24		
ALDRIN		0.4	U		0.39	UJ	H				0.36	U	
ALPHA-BHC		0.4	U		0.39	UJ	H				0.36	U	
ALPHA-CHLORDANE		0.4	U		0.39	UJ	H				0.36	U	
AROCLOR-1016		20	U		20	U					18	U	
AROCLOR-1221		20	U		20	U					18	U	
AROCLOR-1232		20	U		20	U					18	U	
AROCLOR-1242		20	U		20	U					18	U	
AROCLOR-1248		20	U		20	U					18	U	
AROCLOR-1254		20	U		20	U					18	U	
AROCLOR-1260		19						45000	J	UR	74		
BETA-BHC		0.4	U		0.39	UJ	H				0.36	U	
DELTA-BHC		0.4	U		0.39	UJ	H				0.36	U	
DIELDRIN		3	UJ	U				1100	UJ	UR	0.97		
ENDOSULFAN I		0.4	U		0.39	UJ	H				0.36	U	
ENDOSULFAN II		0.8	U					480	J	UR	1	UJ	U
ENDOSULFAN SULFATE		0.8	U					1200	UJ	UR	0.72	U	
ENDRIN		0.8	U					150	J	UR	0.33	J	CPU
ENDRIN ALDEHYDE		0.8	U		0.78	UJ	H				0.72	U	
ENDRIN KETONE		0.8	U		0.78	UJ	H				0.72	U	
GAMMA-BHC (LINDANE)		0.79			0.39	UJ	H				0.36	U	
GAMMA-CHLORDANE		0.4	U		0.39	UJ	H				0.36	U	
HEPTACHLOR		0.4	U		0.39	UJ	H				0.36	U	
HEPTACHLOR EPOXIDE		0.4	U		0.39	UJ	H				1.2	UJ	U
METHOXYCHLOR		11	UJ	CU				11000	UJ	UR	0.36	UJ	C
TOXAPHENE		40	U		39	UJ	H				36	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB05-0001			CRP-SB06-0001			CRP-SB07-0001			CRP-SB08-0001		
SDG: CARPT001	LAB_ID	0905101-03			0905122-09			0905122-11			0905122-10		
FRACTION: PEST/PCB	SAMP_DATE	5/12/2009			5/13/2009			5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	71.3			91.6			82.2			87.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		8.1	UJ	U	3.8	UJ	U	0.81	U		0.76	U	
4,4'-DDE		0.93	U		2.5			1.3			0.76	U	
4,4'-DDT		5.4	J	C	5.2	J	C	1.5	J	CU	0.7	UJ	CPU
ALDRIN		0.47	U		0.36	U		0.4	U		0.38	U	
ALPHA-BHC		0.47	U		0.93			0.93	UJ	U	0.38	U	
ALPHA-CHLORDANE		0.47	U		2.3			0.4	U		0.38	U	
AROCLOR-1016		23	U		18	U		20	U		19	U	
AROCLOR-1221		23	U		18	U		20	U		19	U	
AROCLOR-1232		23	U		18	U		20	U		19	U	
AROCLOR-1242		23	U		18	U		20	U		19	U	
AROCLOR-1248		23	U		18	U		20	U		19	U	
AROCLOR-1254		23	U		18	U		20	U		19	U	
AROCLOR-1260		14	J	P	46			11	J	P	7.2	J	P
BETA-BHC		0.47	U		0.36	U		0.4	U		0.38	U	
DELTA-BHC		0.47	U		0.36	U		0.4	U		0.38	U	
DIELDRIN		0.93	U		1.1			0.81	U		0.76	U	
ENDOSULFAN I		0.47	U		1.2			0.4	U		0.38	U	
ENDOSULFAN II		0.93	U		0.73	U		0.81	U		0.76	U	
ENDOSULFAN SULFATE		5.9			0.73	U		2.6			0.76	U	
ENDRIN		0.93	U		0.73	UJ	C	0.81	UJ	C	0.76	UJ	C
ENDRIN ALDEHYDE		0.93	U		0.73	U		0.63	J	P	0.76	U	
ENDRIN KETONE		0.93	U		0.73	U		0.81	U		0.87	J	U
GAMMA-BHC (LINDANE)		0.47	U		0.36	U		0.9	UJ	U	0.38	U	
GAMMA-CHLORDANE		0.47	U		1.4			0.4	U		0.38	U	
HEPTACHLOR		0.47	U		0.36	UJ	C	0.4	UJ	C	0.38	UJ	C
HEPTACHLOR EPOXIDE		0.47	U		5	UJ	U	2.5	UJ	U	0.38	U	
METHOXYCHLOR		0.47	UJ	C	0.36	UJ	C	0.4	UJ	C	1.8	UJ	CU
TOXAPHENE		47	U		36	U		40	U		38	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB09-0001			CRP-SB10-0001			CRP-SB10-0001DL			CRP-SB11-0001		
SDG: CARPT001	LAB_ID	0905101-02			0905122-07			0905122-07DL			0905122-12		
FRACTION: PEST/PCB	SAMP_DATE	5/12/2009			5/13/2009			5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	82.1			89.9			89.9			90.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		3.6	J	U	0.74	U					1.8	J	U
4,4'-DDE		30			9.7	UJ	U				4.5		
4,4'-DDT		62			130	UJ	CU				8.6	J	C
ALDRIN		0.41	U		0.37	U					0.37	U	
ALPHA-BHC		0.41	U		0.37	U					0.37	U	
ALPHA-CHLORDANE		0.41	U		0.37	U					3.8	J	U
AROCLOR-1016		20	U		18	U					18	U	
AROCLOR-1221		20	U		18	U					18	U	
AROCLOR-1232		20	U		18	U					18	U	
AROCLOR-1242		20	U		18	U					18	U	
AROCLOR-1248		20	U		18	U					18	U	
AROCLOR-1254		20	U		18	U					18	U	
AROCLOR-1260		20	U					1700			58		
BETA-BHC		0.41	U		0.37	U					0.37	U	
DELTA-BHC		0.41	U		0.37	U					0.37	U	
DIELDRIN		7	UJ	U	32	J	U				1.2		
ENDOSULFAN I		0.41	U		0.37	U					0.37	U	
ENDOSULFAN II		0.81	U		15	J	C				0.31	J	C
ENDOSULFAN SULFATE		0.81	U		39	UJ	U				0.74	U	
ENDRIN		0.81	U		20	J	CU				0.72	J	CU
ENDRIN ALDEHYDE		0.81	U		15	UJ	U				0.74	U	
ENDRIN KETONE		0.81	U		0.74	U					0.74	U	
GAMMA-BHC (LINDANE)		5.3			0.37	U					0.37	U	
GAMMA-CHLORDANE		0.41	U		7.8						2.6	J	U
HEPTACHLOR		0.41	U		0.37	UJ	C				0.37	UJ	C
HEPTACHLOR EPOXIDE		0.41	U		0.37	U					1.4	J	U
METHOXYCHLOR		0.41	UJ	C	290	UJ	CU				0.37	UJ	C
TOXAPHENE		41	U		37	U					37	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-DUP01			CRP-SS01-0006			CRP-SS01-0006DL			CRP-SS01-0612		
SDG: CARPT001	LAB_ID	0905122-08			0905122-04			0905122-04DL			0905122-02		
FRACTION: PEST/PCB	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	FD			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	81.9			88.5			88.5			90.5		
	DUP_OF	CRP-SB07-0001											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.81	U		1700	UJ	U				520	UJ	U
4,4'-DDE		1.4			38	J	U				38	J	U
4,4'-DDT		0.81	J	CU	0.75	UJ	C						
ALDRIN		0.41	U		0.38	U					0.37	U	
ALPHA-BHC		0.41	U		0.38	U					0.37	U	
ALPHA-CHLORDANE		0.41	U		0.38	U					0.37	U	
AROCLOR-1016		20	U		19	U					18	U	
AROCLOR-1221		20	U		19	U					18	U	
AROCLOR-1232		20	U		19	U					18	U	
AROCLOR-1242		20	U		19	U					18	U	
AROCLOR-1248		20	U		19	U					18	U	
AROCLOR-1254		20	U		19	U					18	U	
AROCLOR-1260		9.7	J	P				25000					
BETA-BHC		0.41	U		0.38	U					0.37	U	
DELTA-BHC		0.41	U		0.38	U					0.37	U	
DIELDRIN		0.81	U					190	J	U	40	J	U
ENDOSULFAN I		0.41	U		0.38	U					0.37	U	
ENDOSULFAN II		0.81	U					170			44	J	C
ENDOSULFAN SULFATE		2.7			480	UJ	U				170	UJ	U
ENDRIN		0.81	UJ	C				200	J	U	54	J	CU
ENDRIN ALDEHYDE		0.81	U		0.75	U					0.74	U	
ENDRIN KETONE		0.81	U		0.75	U					0.74	U	
GAMMA-BHC (LINDANE)		1.5			0.38	U					0.37	U	
GAMMA-CHLORDANE		0.41	U		13						0.37	U	
HEPTACHLOR		0.41	UJ	C	0.38	UJ	C				0.37	UJ	C
HEPTACHLOR EPOXIDE		0.41	U		0.38	U					0.37	U	
METHOXYCHLOR		0.41	UJ	C	320	UJ	CU				110	UJ	CU
TOXAPHENE		41	U		38	U					37	U	

PROJ_NO: 00870	NSAMPLE	CRP-SS01-0612DL			CRP-SS02-0006			CRP-SS02-0612			CRP-TP01A-0506		
SDG: CARPT001	LAB_ID	0905122-02DL			0905122-01			0905122-03			0905083-01		
FRACTION: PEST/PCB	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/11/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.5			80.2			84.2			86.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD					0.83	U		0.79	U		0.77	U	
4,4'-DDE					0.83	U		0.6	J	P	0.77	U	
4,4'-DDT		760	UJ	U	2.8	UJ	CU	16	UJ	CU	1	UJ	U
ALDRIN					0.42	U		0.4	U		0.38	U	
ALPHA-BHC					0.32	J	P	0.4	U		0.38	U	
ALPHA-CHLORDANE					0.42	U		0.4	U		0.38	U	
AROCLOR-1016					21	U		20	U		19	U	
AROCLOR-1221					21	U		20	U		19	U	
AROCLOR-1232					21	U		20	U		19	U	
AROCLOR-1242					21	U		20	U		19	U	
AROCLOR-1248					21	U		20	U		19	U	
AROCLOR-1254					21	U		20	U		19	U	
AROCLOR-1260		7000			29			160			11	J	P
BETA-BHC					0.42	U		0.4	U		0.38	U	
DELTA-BHC					0.42	U		0.4	U		0.38	U	
DIELDRIN					0.5	J	PU	0.83	J	U	0.77	U	
ENDOSULFAN I					0.42	U		0.4	U		0.38	U	
ENDOSULFAN II					0.83	U		1.1			0.77	U	
ENDOSULFAN SULFATE					0.83	U		0.6	J	PU	0.77	U	
ENDRIN					0.83	UJ	C	0.79	UJ	C	0.77	U	
ENDRIN ALDEHYDE					0.83	U		0.79	U		0.77	U	
ENDRIN KETONE					3.2	UJ	U	20	UJ	U	0.77	U	
GAMMA-BHC (LINDANE)					1.6			0.92			0.38	U	
GAMMA-CHLORDANE					0.42	U		0.4	U		0.38	U	A
HEPTACHLOR					0.42	UJ	C	0.4	UJ	C	0.38	U	
HEPTACHLOR EPOXIDE					0.42	U		1.1	J	U	0.38	U	
METHOXYCHLOR					0.42	UJ	C	0.4	UJ	C	0.38	UJ	C
TOXAPHENE					42	U		40	U		38	U	

PROJ_NO: 00870	NSAMPLE	CRP-TP01B-0506			CRP-TP01B-0708			CRP-TP04-0506			CRP-TP05-0102		
SDG: CARPT001	LAB_ID	0905083-02			0905083-03			0905101-01			0905122-05		
FRACTION: PEST/PCB	SAMP_DATE	5/11/2009			5/11/2009			5/12/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.6			88.4			92.3			86.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.77	U		0.75	U		0.72	U		0.78	U	
4,4'-DDE		0.77	U		0.75	U		0.33	J	P	3.8	UJ	U
4,4'-DDT		0.77	U		0.33	J	CP	0.57	J	CPU	13	UJ	CU
ALDRIN		0.38	U		0.38	U		0.36	U		0.39		
ALPHA-BHC		0.38	U		0.38	U		0.36	U		0.39	U	
ALPHA-CHLORDANE		0.38	U		0.38	U		0.36	U		0.39	U	
AROCLOR-1016		19	U		19	U		18	U		19	U	
AROCLOR-1221		19	U		19	U		18	U		19	U	
AROCLOR-1232		19	U		19	U		18	U		19	U	
AROCLOR-1242		19	U		19	U		18	U		19	U	
AROCLOR-1248		19	U		19	U		18	U		19	U	
AROCLOR-1254		19	U		19	U		18	U		19	U	
AROCLOR-1260		19	U		19	U		18	U		83		
BETA-BHC		0.38	U		0.38	U		0.57	UJ	U	0.39	U	
DELTA-BHC		0.38	U		0.38	U		0.36	U		0.39	U	
DIELDRIN		0.77	U		0.75	U		0.72	U		4.8	J	U
ENDOSULFAN I		0.38	U		0.38	U		0.36	U		0.39	U	
ENDOSULFAN II		0.77	U		0.75	U		0.72	U		3.7	UJ	U
ENDOSULFAN SULFATE		0.77	U		0.75	U		0.72	U		0.78	U	
ENDRIN		0.77	U		0.75	U		0.72	U		5.7	J	CU
ENDRIN ALDEHYDE		0.77	U		0.75	U		0.72	U		4.4	UJ	U
ENDRIN KETONE		0.77	U		0.75	U		0.72	U		0.78	U	
GAMMA-BHC (LINDANE)		0.38	U		0.38	U		0.36	U		0.39	U	
GAMMA-CHLORDANE		0.38	U		0.38	U		0.36	U		2.8	J	U
HEPTACHLOR		0.38	U		0.38	U		0.36	U		0.39	UJ	C
HEPTACHLOR EPOXIDE		0.38	U		0.38	U		0.36	U		3.1	UJ	U
METHOXYCHLOR		0.38	UJ	C	0.38	UJ	C	0.36	UJ	C	0.39	UJ	C
TOXAPHENE		38	U		38	U		36	U		39	U	

PROJ_NO: 00870	NSAMPLE	CRP-TP06-0405		
SDG: CARPT001	LAB_ID	0905122-06		
FRACTION: PEST/PCB	SAMP_DATE	5/13/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	83.5		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
4,4'-DDD		24	UJ	U
4,4'-DDE		0.8	U	
4,4'-DDT		0.8	UJ	C
ALDRIN		0.4	U	
ALPHA-BHC		0.4	U	
ALPHA-CHLORDANE		0.4	U	
AROCLOR-1016		20	U	
AROCLOR-1221		20	U	
AROCLOR-1232		20	U	
AROCLOR-1242		20	U	
AROCLOR-1248		20	U	
AROCLOR-1254		20	U	
AROCLOR-1260		47		
BETA-BHC		0.4	U	
DELTA-BHC		0.4	U	
DIELDRIN		0.8	U	
ENDOSULFAN I		0.4	U	
ENDOSULFAN II		5.6	J	CU
ENDOSULFAN SULFATE		0.8	U	
ENDRIN		5.3	J	C
ENDRIN ALDEHYDE		6.4		
ENDRIN KETONE		0.8	U	
GAMMA-BHC (LINDANE)		0.4	U	
GAMMA-CHLORDANE		0.4	U	
HEPTACHLOR		0.4	UJ	C
HEPTACHLOR EPOXIDE		0.4	U	
METHOXYCHLOR		0.4	UJ	C
TOXAPHENE		40	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB01-0001			CRP-SB02-0001			CRP-SB03-0001			CRP-SB05-0001		
SDG: CARPT001	LAB_ID	0905101-04			0905101-06			0905101-05			0905101-03		
FRACTION: PET	SAMP_DATE	5/12/2009			5/12/2009			5/12/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	83.8			85.3			93.1			71.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		200			99			150			1500		
GASOLINE RANGE ORGANICS		3.2	U		3.4	U		2.7	U		6.6	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB06-0001			CRP-SB07-0001			CRP-SB08-0001			CRP-SB09-0001		
SDG: CARPT001	LAB_ID	0905122-09			0905122-11			0905122-10			0905101-02		
FRACTION: PET	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/12/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	91.6			82.2			87.3			82.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		130			65			68			5600		
GASOLINE RANGE ORGANICS		3.3	U		3.8	U		2.8	U		3.5	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB10-0001			CRP-SB11-0001			CRP-SB-DUP01			CRP-SS01-0006		
SDG: CARPT001	LAB_ID	0905122-07			0905122-12			0905122-08			0905122-04		
FRACTION: PET	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			FD			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	89.9			90.4			81.9			88.5		
	DUP_OF							CRP-SB07-0001					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		47			72			71			170		
GASOLINE RANGE ORGANICS		2.3	U		2.9	U		3.4	U		2.7	U	

PROJ_NO: 00870	NSAMPLE	CRP-SS01-0612			CRP-SS02-0006			CRP-SS02-0612			CRP-TP01A-0506		
SDG: CARPT001	LAB_ID	0905122-02			0905122-01			0905122-03			0905083-01		
FRACTION: PET	SAMP_DATE	5/13/2009			5/13/2009			5/13/2009			5/11/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	90.5			80.2			84.2			86.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		51			77			50			28		
GASOLINE RANGE ORGANICS		2.7	U		3	U		2.6	U		2.8	U	

PROJ_NO: 00870	NSAMPLE	CRP-TP01B-0506			CRP-TP01B-0708			CRP-TP04-0506			CRP-TP05-0102		
SDG: CARPT001	LAB_ID	0905083-02			0905083-03			0905101-01			0905122-05		
FRACTION: PET	SAMP_DATE	5/11/2009			5/11/2009			5/12/2009			5/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	86.6			88.4			92.3			86.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		11			5.5			8			32		
GASOLINE RANGE ORGANICS		2.8	U		2.1	U		2.9	U		2.5	U	

PROJ_NO: 00870	NSAMPLE	CRP-TP06-0405		
SDG: CARPT001	LAB_ID	0905122-06		
FRACTION: PET	SAMP_DATE	5/13/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	83.5		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		430		
GASOLINE RANGE ORGANICS		2.7	U	

PROJ_NO: 00870	NSAMPLE	CRP-TB01-051109			CRP-TB02-051209			CRP-TB03-051309		
SDG: CARPT001	LAB_ID	0905083-04			0905101-07			0905122-13		
FRACTION: PET	SAMP_DATE	5/11/2009			5/12/2009			5/13/2009		
MEDIA: WATER	QC_TYPE	TB			TB			TB		
	UNITS	MG/L			MG/L			MG/L		
	PCT_SOLIDS									
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
GASOLINE RANGE ORGANICS		0.055	U		0.055	U		0.055	U	

TETRA TECH

INTERNAL CORRESPONDENCE

C-NAVY-08-09-3270W

Date: August 11, 2009

c: File G00870-4.10 (w/enc.-original)
T. Campbell (scan, w/o enc.)

To: Steve Parker (scan, w/o enc.)

From: Jennifer Cardinal (no copy) (for)

Subject: Tier II Organic Data Validation, SDG CARPT003
Empirical Laboratories, LLC
CTO 406, MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island

VOC/SVOC/Pesticides/PCB/DRO/GRO:

14/Soils/	CRP-SB02-0810	CRP-SB02-1618	CRP-SB02-2426
	CRP-SB02-DUP03	CRP-SB03-0810	CRP-SB03-1618
	CRP-SB03-2830	CRP-SB10-0810	CRP-SB10-1214
	CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214
	CRP-SB11-1618	CRP-SB-DUP04	

(Field Duplicate Pairs: CRP-SB02-0810/CRP-SB02-DUP03, CRP-SB03-2830/CRP-SB-DUP04)

1/Rinsate Blank/	CRP-SB-RB02-052109

VOC:

3/Trip Blanks/	CRP-TB06-052009	CRP-TB07-052109	CRP-TB08-052209

Tetra Tech NUS, Inc. (TtNUS) performed a Tier II data validation on the volatile organic compound (VOC), semivolatile organic compound (SVOC), pesticide, polychlorinated biphenyl (PCB), gasoline range organics (GRO), and diesel range organics (DRO) analytical data for the soil samples collected by TtNUS at the MRP Site 1, Carr Point, Naval Station Newport site in Portsmouth, Rhode Island on May 20-22, 2009. Sample collection and analysis was performed according to the approved Work Plan and Quality Assurance Project Plan for MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island, dated April 2009.

The VOC and SVOC analyses were performed according to USEPA SW-846 Methods 8260B and 8270C, respectively. The pesticides and PCB analyses were performed according to USEPA SW-846 Methods 8081 and 8082, respectively. The GRO and DRO analyses were both performed according to USEPA SW-846 Method 8015B.

The VOC, SVOC, GRO, and DRO data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996. The pesticides and PCB validation was performed in accordance with the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Organic Analyses, Part III, February 2004.

The sample results, validation qualifiers (VQ), and qualifier codes (QLCD) are presented in the enclosed data summary tables. A list of the qualifier codes, which provide the reasons for the validation qualifiers, is enclosed.

The data were evaluated based on the following parameters:

- Data Completeness
- * Preservation and Technical Holding Times
- * GC/MS Instrument Performance Check (Tuning)
- * Pesticide Degradation
- Initial and Continuing Calibrations
- Blanks
- Surrogate Compounds
- Internal Standards
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample/Laboratory Control Sample Duplicate
- * Field Duplicates
- Analyte Identification/Quantitation
- * Percent Solids
- Reporting Limits

* All criteria were met for this parameter.

Data Completeness

Volatiles

Several volatile samples have amended sample IDs with a "DL" suffix, however, no dilutions were performed for the volatiles samples. On July 15, 2009 the laboratory clarified that these samples were analyzed from the methanol extract due to internal standard issues (see memorandum for SDG CARPT002).

On July 14, 2009 the laboratory provided a list of volatile target compounds associated with each internal standard used in the analysis since it was not provided in the original data package (see SDG CARPT002).

Semivolatiles

On July 13, 2009 the laboratory provided a list of semivolatile target compounds associated with each internal standard used in the analysis since it was not provided in the original data package (see SDG CARPT001).

Pesticides and PCBs

On July 6, 2009 the laboratory clarified that the Form 10s for the pesticide and PCB analyses report the relative percent difference (RPD) between the results in the dual column analysis and not the %D as indicated by the column header on the forms.

Pesticides

The pesticide reporting limits for several samples were incorrect due to laboratory error. On July 22, 2009 the laboratory resubmitted the Form Is for the affected samples to correct the reporting limits.

Initial and Continuing Calibrations

Volatiles

The following table summarizes the volatile compounds that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	%D	Action		Affected Samples
		(+)	NDs	
Acetone	61.8, 65.1, 49.4	J	UJ	CRP-TB06-052009, CRP-TB07-052109, CRP-TB08-052209, CRP-SB-RB02-052109
2-Hexanone	38.1, 45.4, 34.5		UJ	
2-Butanone	37.9, 41.3, 30.3, -28.8	J	UJ	CRP-TB06-052009, CRP-TB07-052109, CRP-TB08-052209, CRP-SB-RB02-052109
4-Methyl-2-pentanone	27.8, 32.7		UJ	CRP-TB06-052009, CRP-TB07-052109, CRP-SB-RB02-052109
Methyl acetate	27.9		UJ	CRP-TB07-052109, CRP-SB-RB02-052109
1,1,2,2-Tetrachloroethane	29.2		UJ	

Although the %D for acetone, 4-methyl-2-pentanone, and 2-butanone exceeded the QC criterion, the project accuracy goals are not impacted since the affected sample results are much lower than the project action limit for acetone, 4-methyl-2-pentanone, and 2-butanone. The positive and non-detected acetone, 4-methyl-2-pentanone, and 2-butanone results in the affected samples are usable as estimated values and estimated quantitation limits.

Although the %D for 2-hexanone exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for this compound. The non-detected 2-hexanone results in the affected samples are usable as estimated quantitation limits.

Although the %D for methyl acetate and 1,1,2,2-tetrachloroethane exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for the trip blank and rinsate blank samples. The non-detected methyl acetate and 1,1,2,2-tetrachloroethane results in the affected samples are usable as estimated quantitation limits.

Semivolatiles

The following table summarizes the semivolatile compound that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	%D	Action		Affected Samples
		(+)	NDs	
Hexachlorocyclopentadiene	29.8		UJ	CRP-SB-RB02-052109
Di-n-octylphthalate	27.2		UJ	CRP-SB-DUP04, CRP-SB11-0810, CRP-SB11-1214, CRP-SB11-1618

Although the %D for di-n-octylphthalate exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for di-n-octylphthalate. The non-detected di-n-octylphthalate results in the affected samples are usable as estimated quantitation limits.

Although the %D for hexachlorocyclopentadiene exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for the rinsate blank sample. The non-detected hexachlorocyclopentadiene result in the affected sample is usable as estimated quantitation limit.

Pesticides

The following table summarizes the pesticide compounds that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	Column 1 %D	Column 2 %D	Action		Affected Samples
			(+)	NDs	
Methoxychlor	-28.6, -32.3	-28.5, -32.5	J	UJ	CRP-SB02-0810, CRP-SB02-1618, CRP-SB02-2426, CRP-SB02-DUP03
Endrin	-31.2	-36.7		UJ	CRP-SB02-1618, CRP-SB02-2426, CRP-SB02-DUP03

Although the %D for methoxychlor and endrin exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for these compounds. The positive and non-detected methoxychlor and endrin results in the affected samples are usable as estimated values and estimated quantitation limits.

<u>Blanks</u>

Volatiles

The following table summarizes the level of blank contamination detected in the laboratory blank associated with the listed samples:

Compound	Type of Blank	Maximum Concentration	Action Level	Affected Samples
1,2,4-Trichlorobenzene	Method	0.16 µg/L	0.80 µg/L	CRP-TB06-052009
2-Hexanone	Method (Low-level)	11 µg/kg	55 µg/kg	CRP-SB11-0810

Blank actions were applied to elevate the reporting limits for 1,2,4-trichlorobenzene and 2-hexanone in the affected samples due to laboratory blank contamination. The 5x rule applies for 1,2,4-trichlorobenzene and 2-hexanone. The positive results below the blank action level and below the quantitation limit are changed to non-detected values at the quantitation limit (QL).

Although 1,2,4-trichlorobenzene contamination was found in the laboratory blank, the project sensitivity goals are not impacted since there are no regulatory limits established for the trip blank samples. The 1,2,4-trichlorobenzene result in the affected trip blank sample is usable as a non-detected value.

Although 2-hexanone contamination was found in the laboratory blank, the project sensitivity goals are not impacted since there are no regulatory limits established for 2-hexanone for the soil samples. The 2-hexanone result in the affected sample is usable as a non-detected value.

Semivolatiles

The following table summarizes the level of blank contamination detected in the laboratory blank associated with the listed samples:

Compound	Type of Blank	Maximum Concentration	Action Level	Affected Samples
Caprolactam	Method	1.1 µg/L	5.5 µg/L	CRP-SB-RB02-052109

Blank actions were applied to elevate the reporting limits for caprolactam in the affected rinsate blank sample due to laboratory blank contamination. The 5x rule applies for caprolactam. The positive result below the blank action level and below the quantitation limit is changed to a non-detected value at the quantitation limit (QL).

Although caprolactam contamination was found in the laboratory blank, the project sensitivity goals are not impacted since there are no regulatory limits established for the rinsate blank sample. The caprolactam result in the affected sample is usable as a non-detected value.

Surrogate Compounds

Volatiles

The following sample had a surrogate spike recovery outside of the recovery limits:

Sample	Surrogate	% Recovery	QC Limits	Action	
				(+)	NDs
CRP-SB02-1618	Bromofluorobenzene	69	80-125		UJ
	1,2-Dichloroethane-d_4	156	75-140		
	Dibromofluoromethane	130	80-125		

The surrogate recovery QC criteria were not met; therefore, the project accuracy goals may be impacted. The non-detected volatile compound results in sample CRP-SB02-1618 are usable as estimated quantitation limits for which the bias is indeterminate due to the conflicting high and low bias of the surrogate recoveries.

Internal Standards

Volatiles

The following table summarizes the volatile internal standards that failed to meet the acceptance criteria:

Internal Standard	IS Area	Acceptable Range	Action		Affected Samples
			(+)	NDs	
1,4-Dichlorobenzene	133691	188112-752446		UJ	CRP-SB02-2426
	185013	191017-764068		UJ	CRP-SB11-1618
	165844			UJ	CRP-SB10-1214
	154534			UJ	CRP-SB03-2830

Internal Standard	IS Area	Acceptable Range	Action		Affected Samples
			(+)	NDs	
	161639			UJ	CRP-SB-DUP04
1,4-Dichlorobenzene	80593	187962-751848		UJ	CRP-SB02-1618
Fluorobenzene	366691	429503-1718010		UJ	
Chlorobenzene-d_5	197899	220592-882366		UJ	
1,4-Dichlorobenzene	148342	187962-751848		UJ	CRP-SB10-1618
	23491			UJ	CRP-SB03-1618RE

The target compounds associated with fluorobenzene are bromomethane, chloroethane, vinyl chloride, chloromethane, dichlorodifluoromethane, trichlorofluoromethane, benzene, carbon tetrachloride, chloroform, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,2-dichloropropane, 1,1,1-trichloroethane, trichloroethene, methylene chloride, methyl-t-butyl ether, cyclohexane, methylcyclohexane, methyl acetate, carbon disulfide, acetone, 2-butanone, and 4-methyl-2-pentanone.

The target compounds associated with chlorobenzene-d_5 are bromodichloromethane, bromoform, chlorobenzene, 1,2-dibromoethane, trans-1,3-dichloropropene, ethylbenzene, 1,1,2-trichloroethane, isopropylbenzene, styrene, tetrachloroethene, toluene, total xylenes, and 2-hexanone.

The target compounds associated with 1,4-dichlorobenzene-d_4 are 1,1,2,2-tetrachloroethane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and 1,2-dibromo-3-chloropropane.

The internal standard areas did not meet the QC acceptance criteria for the samples listed above; therefore, the project accuracy goals may be impacted. The affected non-detected results in the affected samples are usable as estimated quantitation limits.

Matrix Spike/Matrix Spike Duplicate

Volatiles

The following table summarizes the volatile matrix spiking recovery that did not meet QC limits in the matrix spike and matrix spike duplicate analysis and the qualifications applied to the affected sample:

CRP-SB03-0810							
Compound	MS %REC	MSD %REC	RPD	QC Limits		Action	
				%REC	RPD	(+)	ND
Chlorobenzene	67	70	-	75-125	-		UJ
Chloroform	69	66	-	70-125	-		UJ
1,2-Dibromoethane	65	60	-	70-125	-		UJ
1,2-Dichlorobenzene	55	55	-	75-120	-		UJ
1,3-Dichlorobenzene	57	58	-	70-125	-		UJ
1,4-Dichlorobenzene	56	52	-	70-125	-		UJ

CRP-SB03-0810							
Compound	MS %REC	MSD %REC	RPD	QC Limits		Action	
				%REC	RPD	(+)	ND
1,1-Dichloroethane	74	-	-	75-125	-		UJ
1,2-Dichloroethane	68	65	-	70-125	-		UJ
Styrene	62	58	-	75-125	-		UJ
Toluene	69	-	-	70-125	-		UJ
1,2,4-Trichlorobenzene	19	20	-	65-130	-		UJ
Tetrachloroethene	57	-	-	65-140	-		UJ
Total xylenes	68	-	-	70-120	-		UJ
Dichlorodifluoromethane	-	-	35	-	30		UJ
cis-1,3-Dichloropropene	-	54	-	70-125	-		UJ
trans-1,3-Dichloropropene	-	55	-	65-125	-		UJ
2-Hexanone	-	43	-	45-145	-		UJ
Trichlorofluoromethane	-	-	31	-	30		UJ
Vinyl chloride	-	-	42	-	30		UJ
Methyl-tert-butyl ether	-	42	-	55-150	-		UJ

-Criterion met

The MS/MSD recovery criteria were not met for chlorobenzene, chloroform, 1,2-dibromoethane, 1,2-dichlorobenzene, 1,3-dichlorobezene, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, styrene, toluene, 1,2,4-trichlorobenzene, tetrachloroethene, total xylenes, and methyl-tert-butyl ether; therefore, the project accuracy goals may be impacted. The affected non-detected results in sample CRP-SB03-0810 are usable as estimated quantitation limits which may be biased low.

Although the MS/MSD recovery criteria were not met for cis-1,3-dichlororpropene, trans-1,3-dichloropropene, and 2-hexanone; the project accuracy goals are not impacted since there are no regulatory limits established for these compounds for the soil samples. The affected non-detected results in sample CRP-SB03-0810 are usable as estimated quantitation limits which may be biased low.

The MS/MSD RPD precision criteria were not met for vinyl chloride; therefore, the project precision goals may be impacted. The affected non-detected result in sample CRP-SB03-0810 is usable as an estimated quantitation limit.

Although the MS/MSD RPD precision criteria were not met for dichlorodifluoromethane and trichlorofluoromethane; the project precision goals are not impacted since there are no regulatory limits established for these compounds for the soil samples. The affected non-detected results in sample CRP-SB03-0810 are usable as estimated quantitation limits.

Semivolatiles

The following table summarizes the semivolatile matrix spiking recoveries that did not meet QC limits in the matrix spike and matrix spike duplicate analysis and the qualifications applied to the affected sample:

CRP-SB03-0810					
Compound	MS %REC	MSD %REC	QC Limits	Action	
			%REC	(+)	ND
3,3'-Dichlorobenzidine	18	-	19-130		UJ
2,4-Dimethylphenol	20	20	30-105		UJ

-Criterion met

The MS/MSD recovery criteria were not met for 3,3'-dichlorobenzidine and 2,4-dimethylphenol; therefore, the project accuracy goals may be impacted. The non-detected 3,3'-dichlorobenzidine and 2,4-dimethylphenol results in sample CRP-SB03-0810 are usable as estimated quantitation limits which may be biased low.

Pesticides

The following table summarizes the pesticide matrix spiking recovery that did not meet QC limits in the matrix spike and matrix spike duplicate analysis and the qualifications applied to the affected sample:

CRP-SB03-0810					
Compound	MS %REC	MSD %REC	QC Limits	Action	
			%REC	(+)	ND
Endosulfan sulfate	-	56	60-135		UJ

-Criterion met

Although the MS/MSD recovery criteria were not met for endosulfan sulfate, the project accuracy goals are not impacted since there are no regulatory limits established for this compound for the soil samples. The non-detected endosulfan sulfate result in sample CRP-SB03-0810 is usable as an estimated quantitation limit which may be biased low.

<u>Laboratory Control Sample/Laboratory Control Sample Duplicates</u>

Semivolatiles

The following table summarizes the semivolatile compounds that failed to meet the LCS recovery limits:

Compound	% Rec.	QC Limits	Action		Affected Samples
			(+)	NDs	
Caprolactam	15, 17	20-110	J		CRP-SB-RB02-052109
	123	50-110	J		CRP-SB02-2426, CRP-SB02-DUP03, CRP-SB03-0810, CRP-SB10-1618

Although the laboratory control sample recovery criteria were not met for caprolactam, the project accuracy goals are not impacted since there are no regulatory limits established for caprolactam for the soil samples, and there are no regulatory limits established for the rinsate blank sample. The affected positive results in the affected samples are usable as estimated values.

Analyte Identification/Quantitation

Pesticides

The relative percent difference (RPD) between the results of analytical columns 1 and 2 exceeded the 40% RPD QC criterion for the compounds in the following samples:

Sample	Analyte	%RPD	Action (+)
CRP-SB-DUP04	Gamma-BHC	47.0	J
CRP-SB02-0810	Beta-BHC	89.1	J
	Heptachlor epoxide	78.3	J
	Methoxychlor	115.7	UJ* at 2.3
CRP-SB02-1618	Alpha-BHC	179.1	UJ* at 2.6
CRP-SB02-2426	Beta-BHC	95.2	J
	Heptachlor epoxide	125.9	UJ* at 0.58
CRP-SB02-DUP03	Beta-BHC	112.5	UJ* at 0.83
CRP-SB03-2830	Gamma-BHC	41.0	J
	Gamma-chlordane	41.5	J
CRP-SB10-0810	Gamma-chlordane	43.3	J
CRP-SB11-0810	Dieldrin	55.7	J
	Endrin	47.5	J
	Endrin aldehyde	146.1	UJ* at 2.8

*Professional judgment was used to raise the result to the higher of the two results and qualify the result as estimated, non-detected (UJ).

Although the analyte quantitation relative percent differences exceeded the 40% RPD QC limit for gamma-BHC, beta-BHC, heptachlor epoxide, gamma-chlordane, dieldrin, and endrin in the samples listed above; the project accuracy goals are not impacted since the affected gamma-chlordane and dieldrin results are below the project action limits in both columns in affected samples , and there are no regulatory limits established gamma-BHC, beta-BHC, heptachlor epoxide, and endrin. The positive results for the affected compounds in the affected samples are usable as estimated values.

Although the analyte quantitation relative percent differences exceeded the 100% RPD QC limit for methoxychlor, alpha-BHC, heptachlor epoxide, beta-BHC, and endrin aldehyde in the samples listed above, the project sensitivity goals are not impacted since there are no regulatory limits established for these compounds for the soil samples. The results for the affected compounds in the affected samples are usable as estimated, non-detected values.

PCBs

The relative percent difference (RPD) between the results of analytical columns 1 and 2 exceeded the 40% RPD QC criterion for the Aroclor in the following sample:

Sample	Analyte	%RPD	Action
			ND
CRP-SB02-0810	Aroclor-1260	48.8	U

Although the analyte quantitation relative percent differences exceeded the 40% RPD QC limit for Aroclor-1260 in sample CRP-SB02-0810; the project accuracy goals are not impacted since the affected sample result is below the project action limit in both columns. The non-detected result for the affected Aroclor in the affected sample is usable as a non-detected result at the quantitation limit.

Reporting Limits

Results above the method detection limit (MDL) and below the quantitation limit (QL) are reported as estimated (J) due to uncertainty below the QL.

Volatiles

Blank actions were taken on 1,2,4-trichlorobenzene and 2-hexanone in the select samples due to method blank contamination. As described above in the Blanks section, the project sensitivity goals are not impacted.

Semivolatiles

Blank actions were taken on caprolactam in the select samples due to method blank contamination. As described above in the Blanks section, the project sensitivity goals are not impacted.

Pesticides

The analyte quantitation relative percent differences exceeded the 100% RPD QC limit for methoxychlor, alpha-BHC, heptachlor epoxide, beta-BHC, and endrin aldehyde in select samples. As described in the Analyte Identification/Quantitation section, the project sensitivity goals are not impacted.

Data Usability Assessment

The data usability assessment was performed to determine if the data met the project data quality objectives for acceptable accuracy, precision, sensitivity and completeness; and to determine and define the impact of the exceeded quality control indicators on the technical usability of the data. Please refer to the specific sections in the above validation report for further details.

Volatiles

The project goals with respect to accuracy were met for the volatiles data set with the following exceptions. All volatile organic compound results in sample CRP-SB02-1618 were qualified as estimated due to low and high surrogate recoveries. All volatile organic compounds in sample CRP-SB02-1618, and compounds 1,1,2,2-tetrachloroethane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and 1,2-dibromo-3-chloropropane in select samples were qualified as estimated due to poor internal standard performance. Several compounds in sample CRP-SB03-0810 were qualified as estimated due to low MS/MSD recoveries. Although specific method criteria were not met in these instances, the affected positive and non-detected results are usable as estimated values and estimated quantitation limits which may have a minor impact on data usability. Additionally, acetone, 4-

methyl-2-pentanone, 2-butanone, 2-hexanone, methyl acetate, and 1,1,2,2-tetrachloroethane were qualified as estimated in select samples due to instrument calibration variability. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision were met for the volatiles data set with the following exception. Select compounds in sample CRP-SB03-0810 were qualified as estimated due to poor MS/MSD precision. Although specific method criteria were not met in these instances, the affected non-detected results are usable as estimated quantitation limits which may have a minor impact on data usability.

The project goals with respect to sensitivity and completeness were met for the volatiles data set. Data usability was not impacted with regards to sensitivity and completeness.

Semivolatiles

The project goals with respect to accuracy were met for the semivolatiles data set with the following exceptions. 3,3'-Dichlorobenzidine and 2,4-dimethylphenol were qualified as estimated in sample CRP-SB03-0810 due to low MS/MSD recoveries. Although specific method criteria were not met in these instances, the affected positive and non-detected results are usable as estimated values and estimated quantitation limits which may have a minor impact on data usability. Additionally, di-n-octylphthalate was qualified as estimated in select samples due to instrument calibration variability. And, caprolactam was qualified as estimated in select samples due to poor LCS recoveries. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision, sensitivity, and completeness were met for the semivolatiles data set. Data usability was not impacted with regards to precision, sensitivity, and completeness.

Pesticides

The project goals with respect to accuracy were met for the pesticides data set. Methoxychlor and endrin were qualified as estimated due to instrument calibration variability. Endosulfan sulfate was qualified as estimated in sample CRP-SB03-0810 due to a low MSD recovery. Gamma-BHC, beta-BHC, heptachlor epoxide, gamma-chlordane, dieldrin, and endrin were qualified as estimated in select samples due to analytical interferences detected in the dual column analysis. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision, sensitivity, and completeness were met for the pesticides data set. Data usability was not impacted with regards to precision, sensitivity, and completeness.

PCBs

The project goals with respect to accuracy were met for the PCB data set. Aroclor-1260 was qualified as estimated in sample CRP-SB02-0810 due to analytical interferences detected in the dual column analysis. Although specific method criteria were not met in this instance, data usability is not impacted and the affected non-detected result is usable as an estimated quantitation limit.

The project goals with respect to precision, sensitivity, and completeness were met for the PCBs data set. Data usability was not impacted with regards to precision, sensitivity, and completeness.

GRO and DRO

The project goals with respect to accuracy, precision, sensitivity, and completeness were met for the GRO and DRO data sets. Data usability was not impacted with regards to accuracy, precision, sensitivity, and completeness.

Tables: Data Validation Qualifiers and Codes
Data Summary Tables

Enclosures: Data Validation Worksheets

Data Validation Qualifiers and Codes

Data Validation Qualifiers:

	=	No qualifier attached to value (positive hit)
J	=	Value is estimated
U	=	Value is not detected
UJ	=	Value is not detected and estimated
R	=	Value (positive hit) is not usable
UR	=	Value was reported as ND but is not usable

Qualifier Codes:

A	=	Lab Blank Contamination
B	=	Field Blank Contamination
C	=	Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01	=	GC/MS Tuning Noncompliance
D	=	MS/MSD Recovery Noncompliance
E	=	LCS/LCSD Recovery Noncompliance
F	=	Lab Duplicate Imprecision
G	=	Field Duplicate Imprecision
H	=	Holding Time Exceedance
I	=	ICP Serial Dilution Noncompliance
J	=	GFAA PDS - GFAA MSA's $r < 0.995$
K	=	ICP Interference - includes ICS % R Noncompliance
L	=	Instrument Calibration Range Exceedance
M	=	Sample Preservation Noncompliance
N	=	Internal Standard Noncompliance
N01	=	Internal Standard Recovery Noncompliance Dioxins
N02	=	Recovery Standard Noncompliance Dioxins
N03	=	Clean-up Standard Noncompliance Dioxins
O	=	Poor Instrument Performance (e.g. base-line drifting)
P	=	Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q	=	Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R	=	Surrogates Recovery Noncompliance
S	=	Pesticide/PCB Resolution
T	=	% Breakdown Noncompliance for DDT and Endrin
U	=	% Difference between columns/detectors >25% for positive results determined via GC/HPLC
V	=	Non-linear calibrations; correlation coefficient $r < 0.995$
W	=	EMPC result
X	=	Signal to noise response drop
Y	=	Percent solids <30%
Z	=	Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00870	NSAMPLE	CRP-SB02-0810			CRP-SB02-1618			CRP-SB02-2426			CRP-SB02-DUP03		
SDG: CARPT003	LAB_ID	0905193-01			0905193-02			0905193-03			0905193-04		
FRACTION: OV	SAMP_DATE	5/20/2009			5/20/2009			5/20/2009			5/20/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			FD		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.5			91.1			89.9			90.3		
	DUP_OF										CRP-SB02-0810		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
1,1,2,2-TETRACHLOROETHANE		4.4	U		3.7	UJ	NR	4	UJ	N	4.5	U	
1,1,2-TRICHLOROETHANE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
1,1-DICHLOROETHANE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
1,1-DICHLOROETHENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
1,2,4-TRICHLOROBENZENE		4.4	U		3.7	UJ	NR	4	UJ	N	4.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		4.4	U		3.7	UJ	NR	4	UJ	N	4.5	U	
1,2-DIBROMOETHANE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
1,2-DICHLOROBENZENE		4.4	U		3.7	UJ	NR	4	UJ	N	4.5	U	
1,2-DICHLOROETHANE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
1,2-DICHLOROPROPANE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
1,3-DICHLOROBENZENE		4.4	U		3.7	UJ	NR	4	UJ	N	4.5	U	
1,4-DICHLOROBENZENE		4.4	U		3.7	UJ	NR	4	UJ	N	4.5	U	
2-BUTANONE		44	U		37	UJ	NR	40	U		45	U	
2-HEXANONE		8.8	U		7.4	UJ	NR	8	U		9	U	
4-METHYL-2-PENTANONE		8.8	U		7.4	UJ	NR	8	U		9	U	
ACETONE		44	U		37	UJ	NR	5.3	J	P	45	U	
BENZENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
BROMODICHLOROMETHANE		0.39	J	P	3.7	UJ	NR	4	U		4.5	U	
BROMOFORM		4.4	U		3.7	UJ	NR	4	U		4.5	U	
BROMOMETHANE		8.8	U		7.4	UJ	NR	8	U		9	U	
CARBON DISULFIDE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
CARBON TETRACHLORIDE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
CHLOROBENZENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
CHLORODIBROMOMETHANE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
CHLOROETHANE		8.8	U		7.4	UJ	NR	8	U		9	U	
CHLOROFORM		1	J	P	3.7	UJ	NR	4	U		4.5	U	
CHLOROMETHANE		8.8	U		7.4	UJ	NR	8	U		9	U	
CIS-1,2-DICHLOROETHENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
CIS-1,3-DICHLOROPROPENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
CYCLOHEXANE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
DICHLORODIFLUOROMETHANE		8.8	U		7.4	UJ	NR	8	U		9	U	
ETHYLBENZENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
ISOPROPYLBENZENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
METHYL ACETATE		8.8	U		7.4	UJ	NR	8	U		9	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB03-0810			CRP-SB03-1618RE			CRP-SB03-2830			CRP-SB10-0810		
SDG: CARPT003	LAB_ID	0905206-04			0905206-05RE			0905206-06			0905206-02		
FRACTION: OV	SAMP_DATE	5/21/2009			5/21/2009			5/21/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.0			99.6			90.8			89.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		4.8	U		3.7	U		4	U		5.1	U	
1,1,2,2-TETRACHLOROETHANE		4.8	U		3.7	UJ	N	4	UJ	N	5.1	U	
1,1,2-TRICHLOROETHANE		4.8	U		3.7	U		4	U		5.1	U	
1,1-DICHLOROETHANE		4.8	UJ	D	3.7	U		4	U		5.1	U	
1,1-DICHLOROETHENE		4.8	U		3.7	U		4	U		5.1	U	
1,2,4-TRICHLOROBENZENE		4.8	UJ	D	3.7	UJ	N	4	UJ	N	5.1	U	
1,2-DIBROMO-3-CHLOROPROPANE		4.8	U		3.7	UJ	N	4	UJ	N	5.1	U	
1,2-DIBROMOETHANE		4.8	UJ	D	3.7	U		4	U		5.1	U	
1,2-DICHLOROBENZENE		4.8	UJ	D	3.7	UJ	N	4	UJ	N	5.1	U	
1,2-DICHLOROETHANE		4.8	UJ	D	3.7	U		4	U		5.1	U	
1,2-DICHLOROPROPANE		4.8	U		3.7	U		4	U		5.1	U	
1,3-DICHLOROBENZENE		4.8	UJ	D	3.7	UJ	N	4	UJ	N	5.1	U	
1,4-DICHLOROBENZENE		4.8	UJ	D	3.7	UJ	N	4	UJ	N	5.1	U	
2-BUTANONE		48	U		37	U		40	U		51	U	
2-HEXANONE		9.6	UJ	D	7.4	U		8	U		10	U	
4-METHYL-2-PENTANONE		9.6	U		7.4	U		8	U		10	U	
ACETONE		48	U		37	U		40	U		51	U	
BENZENE		4.8	U		3.7	U		4	U		5.1	U	
BROMODICHLOROMETHANE		4.8	U		3.7	U		4	U		5.1	U	
BROMOFORM		4.8	U		3.7	U		4	U		5.1	U	
BROMOMETHANE		9.6	U		7.4	U		8	U		10	U	
CARBON DISULFIDE		4.8	U		3.7	U		4	U		5.1	U	
CARBON TETRACHLORIDE		4.8	U		3.7	U		4	U		5.1	U	
CHLOROBENZENE		4.8	UJ	D	3.7	U		4	U		5.1	U	
CHLORODIBROMOMETHANE		4.8	U		3.7	U		4	U		5.1	U	
CHLOROETHANE		9.6	U		7.4	U		8	U		10	U	
CHLOROFORM		4.8	UJ	D	3.7	U		4	U		5.1	U	
CHLOROMETHANE		9.6	U		7.4	U		8	U		10	U	
CIS-1,2-DICHLOROETHENE		4.8	U		3.7	U		4	U		5.1	U	
CIS-1,3-DICHLOROPROPENE		4.8	UJ	D	3.7	U		4	U		5.1	U	
CYCLOHEXANE		4.8	U		3.7	U		4	U		5.1	U	
DICHLORODIFLUOROMETHANE		9.6	UJ	D	7.4	U		8	U		10	U	
ETHYLBENZENE		4.8	U		3.7	U		4	U		5.1	U	
ISOPROPYLBENZENE		4.8	U		3.7	U		4	U		5.1	U	
METHYL ACETATE		9.6	U		7.4	U		8	U		10	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB10-1214			CRP-SB10-1618			CRP-SB11-0810			CRP-SB11-1214		
SDG: CARPT003	LAB_ID	0905206-01			0905206-03			0905217-01			0905217-02		
FRACTION: OV	SAMP_DATE	5/21/2009			5/21/2009			5/22/2009			5/22/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	89.5			89.1			89.7			86.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5.7	U		4.6	U		4.9	U		4.2	U	
1,1,2,2-TETRACHLOROETHANE		5.7	U		4.6	UJ	N	4.9	U		4.2	UJ	N
1,1,2-TRICHLOROETHANE		5.7	U		4.6	U		4.9	U		4.2	U	
1,1-DICHLOROETHANE		5.7	U		4.6	U		4.9	U		4.2	U	
1,1-DICHLOROETHENE		5.7	U		4.6	U		4.9	U		4.2	U	
1,2,4-TRICHLOROBENZENE		5.7	U		4.6	UJ	N	4.9	U		4.2	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE		5.7	U		4.6	UJ	N	4.9	U		4.2	UJ	N
1,2-DIBROMOETHANE		5.7	U		4.6	U		4.9	U		4.2	U	
1,2-DICHLOROBENZENE		5.7	U		4.6	UJ	N	4.9	U		4.2	UJ	N
1,2-DICHLOROETHANE		5.7	U		4.6	U		4.9	U		4.2	U	
1,2-DICHLOROPROPANE		5.7	U		4.6	U		4.9	U		4.2	U	
1,3-DICHLOROBENZENE		5.7	U		4.6	UJ	N	4.9	U		4.2	UJ	N
1,4-DICHLOROBENZENE		5.7	U		4.6	UJ	N	4.9	U		4.2	UJ	N
2-BUTANONE		57	U		46	U		49	U		42	U	
2-HEXANONE		11	U		9.2	U		9.7	U	A	8.4	U	
4-METHYL-2-PENTANONE		11	U		9.2	U		9.7	U		8.4	U	
ACETONE		57	U		46	U		49	U		42	U	
BENZENE		5.7	U		4.6	U		4.9	U		4.2	U	
BROMODICHLOROMETHANE		5.7	U		4.6	U		4.9	U		4.2	U	
BROMOFORM		5.7	U		4.6	U		4.9	U		4.2	U	
BROMOMETHANE		11	U		9.2	U		9.7	U		8.4	U	
CARBON DISULFIDE		5.7	U		4.6	U		4.9	U		4.2	U	
CARBON TETRACHLORIDE		5.7	U		4.6	U		4.9	U		4.2	U	
CHLOROBENZENE		5.7	U		4.6	U		4.9	U		4.2	U	
CHLORODIBROMOMETHANE		5.7	U		4.6	U		4.9	U		4.2	U	
CHLOROETHANE		11	U		9.2	U		9.7	U		8.4	U	
CHLOROFORM		5.7	U		4.6	U		0.91	J	P	4.2	U	
CHLOROMETHANE		11	U		9.2	U		9.7	U		8.4	U	
CIS-1,2-DICHLOROETHENE		5.7	U		4.6	U		4.9	U		4.2	U	
CIS-1,3-DICHLOROPROPENE		5.7	U		4.6	U		4.9	U		4.2	U	
CYCLOHEXANE		5.7	U		4.6	U		4.9	U		4.2	U	
DICHLORODIFLUOROMETHANE		11	U		9.2	U		9.7	U		8.4	U	
ETHYLBENZENE		5.7	U		4.6	U		4.9	U		4.2	U	
ISOPROPYLBENZENE		5.7	U		4.6	U		4.9	U		4.2	U	
METHYL ACETATE		11	U		9.2	U		9.7	U		8.4	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB11-1618			CRP-SB-DUP04		
SDG: CARPT003	LAB_ID	0905217-03			0905206-07		
FRACTION: OV	SAMP_DATE	5/22/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	89.9			91.1		
	DUP_OF				CRP-SB03-2830		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		4.1	U		4.5	U	
1,1,2,2-TETRACHLOROETHANE		4.1	UJ	N	4.5	U	
1,1,2-TRICHLOROETHANE		4.1	U		4.5	U	
1,1-DICHLOROETHANE		4.1	U		4.5	U	
1,1-DICHLOROETHENE		4.1	U		4.5	U	
1,2,4-TRICHLOROBENZENE		4.1	UJ	N	4.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		4.1	UJ	N	4.5	U	
1,2-DIBROMOETHANE		4.1	U		4.5	U	
1,2-DICHLOROBENZENE		4.1	UJ	N	4.5	U	
1,2-DICHLOROETHANE		4.1	U		4.5	U	
1,2-DICHLOROPROPANE		4.1	U		4.5	U	
1,3-DICHLOROBENZENE		4.1	UJ	N	4.5	U	
1,4-DICHLOROBENZENE		4.1	UJ	N	4.5	U	
2-BUTANONE		41	U		45	U	
2-HEXANONE		8.2	U		9	U	
4-METHYL-2-PENTANONE		8.2	U		9	U	
ACETONE		41	U		45	U	
BENZENE		4.1	U		4.5	U	
BROMODICHLOROMETHANE		4.1	U		4.5	U	
BROMOFORM		4.1	U		4.5	U	
BROMOMETHANE		8.2	U		9	U	
CARBON DISULFIDE		4.1	U		4.5	U	
CARBON TETRACHLORIDE		4.1	U		4.5	U	
CHLOROBENZENE		4.1	U		4.5	U	
CHLORODIBROMOMETHANE		4.1	U		4.5	U	
CHLOROETHANE		8.2	U		9	U	
CHLOROFORM		4.1	U		4.5	U	
CHLOROMETHANE		8.2	U		9	U	
CIS-1,2-DICHLOROETHENE		4.1	U		4.5	U	
CIS-1,3-DICHLOROPROPENE		4.1	U		4.5	U	
CYCLOHEXANE		4.1	U		4.5	U	
DICHLORODIFLUOROMETHANE		8.2	U		9	U	
ETHYLBENZENE		4.1	U		4.5	U	
ISOPROPYLBENZENE		4.1	U		4.5	U	
METHYL ACETATE		8.2	U		9	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB02-0810			CRP-SB02-1618			CRP-SB02-2426			CRP-SB02-DUP03		
SDG: CARPT003	LAB_ID	0905193-01			0905193-02			0905193-03			0905193-04		
FRACTION: OV	SAMP_DATE	5/20/2009			5/20/2009			5/20/2009			5/20/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			FD		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.5			91.1			89.9			90.3		
	DUP_OF										CRP-SB02-0810		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
METHYL TERT-BUTYL ETHER		4.4	U		3.7	UJ	NR	4	U		4.5	U	
METHYLENE CHLORIDE		8.8	U		7.4	UJ	NR	8	U		9	U	
STYRENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
TETRACHLOROETHENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
TOLUENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
TOTAL XYLENES		4.4	U		3.7	UJ	NR	4	U		4.5	U	
TRANS-1,2-DICHLOROETHENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
TRANS-1,3-DICHLOROPROPENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
TRICHLOROETHENE		4.4	U		3.7	UJ	NR	4	U		4.5	U	
TRICHLOROFLUOROMETHANE		8.8	U		7.4	UJ	NR	8	U		9	U	
VINYL CHLORIDE		8.8	U		7.4	UJ	NR	8	U		9	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB03-0810			CRP-SB03-1618RE			CRP-SB03-2830			CRP-SB10-0810		
SDG: CARPT003	LAB_ID	0905206-04			0905206-05RE			0905206-06			0905206-02		
FRACTION: OV	SAMP_DATE	5/21/2009			5/21/2009			5/21/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.0			99.6			90.8			89.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		4.8	U		3.7	U		4	U		5.1	U	
METHYL TERT-BUTYL ETHER		4.8	UJ	D	3.7	U		4	U		5.1	U	
METHYLENE CHLORIDE		9.6	U		7.4	U		8	U		10	U	
STYRENE		4.8	UJ	D	3.7	U		4	U		5.1	U	
TETRACHLOROETHENE		4.8	UJ	D	3.7	U		4	U		5.1	U	
TOLUENE		4.8	UJ	D	3.7	U		4	U		5.1	U	
TOTAL XYLENES		4.8	UJ	D	3.7	U		4	U		5.1	U	
TRANS-1,2-DICHLOROETHENE		4.8	U		3.7	U		4	U		5.1	U	
TRANS-1,3-DICHLOROPROPENE		4.8	UJ	D	3.7	U		4	U		5.1	U	
TRICHLOROETHENE		4.8	U		3.7	U		4	U		5.1	U	
TRICHLOROFLUOROMETHANE		9.6	UJ	D	7.4	U		8	U		10	U	
VINYL CHLORIDE		9.6	UJ	D	7.4	U		8	U		10	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB10-1214			CRP-SB10-1618			CRP-SB11-0810			CRP-SB11-1214		
SDG: CARPT003	LAB_ID	0905206-01			0905206-03			0905217-01			0905217-02		
FRACTION: OV	SAMP_DATE	5/21/2009			5/21/2009			5/22/2009			5/22/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	89.5			89.1			89.7			86.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		5.7	U		4.6	U		4.9	U		4.2	U	
METHYL TERT-BUTYL ETHER		5.7	U		4.6	U		4.9	U		4.2	U	
METHYLENE CHLORIDE		11	U		9.2	U		9.7	U		8.4	U	
STYRENE		5.7	U		4.6	U		4.9	U		4.2	U	
TETRACHLOROETHENE		5.7	U		4.6	U		4.9	U		4.2	U	
TOLUENE		5.7	U		4.6	U		4.9	U		4.2	U	
TOTAL XYLENES		5.7	U		4.6	U		4.9	U		4.2	U	
TRANS-1,2-DICHLOROETHENE		5.7	U		4.6	U		4.9	U		4.2	U	
TRANS-1,3-DICHLOROPROPENE		5.7	U		4.6	U		4.9	U		4.2	U	
TRICHLOROETHENE		5.7	U		4.6	U		4.9	U		4.2	U	
TRICHLOROFLUOROMETHANE		11	U		9.2	U		9.7	U		8.4	U	
VINYL CHLORIDE		11	U		9.2	U		9.7	U		8.4	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB11-1618			CRP-SB-DUP04		
SDG: CARPT003	LAB_ID	0905217-03			0905206-07		
FRACTION: OV	SAMP_DATE	5/22/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	89.9			91.1		
	DUP_OF				CRP-SB03-2830		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		4.1	U		4.5	U	
METHYL TERT-BUTYL ETHER		4.1	U		4.5	U	
METHYLENE CHLORIDE		8.2	U		9	U	
STYRENE		4.1	U		4.5	U	
TETRACHLOROETHENE		4.1	U		4.5	U	
TOLUENE		4.1	U		4.5	U	
TOTAL XYLENES		4.1	U		4.5	U	
TRANS-1,2-DICHLOROETHENE		4.1	U		4.5	U	
TRANS-1,3-DICHLOROPROPENE		4.1	U		4.5	U	
TRICHLOROETHENE		4.1	U		4.5	U	
TRICHLOROFLUOROMETHANE		8.2	U		9	U	
VINYL CHLORIDE		8.2	U		9	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB02-052109			CRP-TB06-052009			CRP-TB07-052109			CRP-TB08-052209		
SDG: CARPT003	LAB_ID	0905206-09			0905193-05			0905206-08			0905217-04		
FRACTION: OV	SAMP_DATE	5/21/2009			5/20/2009			5/21/2009			5/22/2008		
MEDIA: WATER	QC_TYPE	RB			TB			TB			TB		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5	U		5	U		5	U		5	U	
1,1,2,2-TETRACHLOROETHANE		5	UJ	C	5	U		5	UJ	C	5	U	
1,1,2-TRICHLOROETHANE		5	U		5	U		5	U		5	U	
1,1-DICHLOROETHANE		5	U		5	U		5	U		5	U	
1,1-DICHLOROETHENE		5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE		5	U		5	U	A	5	U		5	U	
1,2-DIBROMO-3-CHLOROPROPANE		5	U		5	U		5	U		5	U	
1,2-DIBROMOETHANE		5	U		5	U		5	U		5	U	
1,2-DICHLOROBENZENE		5	U		5	U		5	U		5	U	
1,2-DICHLOROETHANE		5	U		5	U		5	U		5	U	
1,2-DICHLOROPROPANE		5	U		5	U		5	U		5	U	
1,3-DICHLOROBENZENE		5	U		5	U		5	U		5	U	
1,4-DICHLOROBENZENE		5	U		5	U		5	U		5	U	
2-BUTANONE		50	UJ	C	50	UJ	C	50	UJ	C	50	UJ	C
2-HEXANONE		10	UJ	C	10	UJ	C	10	UJ	C	10	UJ	C
4-METHYL-2-PENTANONE		10	UJ	C	10	UJ	C	10	UJ	C	10	U	
ACETONE		3.8	J	CP	50	UJ	C	1.4	J	CP	50	UJ	C
BENZENE		5	U		5	U		5	U		5	U	
BROMODICHLOROMETHANE		5	U		5	U		5	U		5	U	
BROMOFORM		5	U		5	U		5	U		5	U	
BROMOMETHANE		10	U		10	U		10	U		10	U	
CARBON DISULFIDE		5	U		5	U		5	U		5	U	
CARBON TETRACHLORIDE		5	U		5	U		5	U		5	U	
CHLOROBENZENE		5	U		5	U		5	U		5	U	
CHLORODIBROMOMETHANE		5	U		5	U		5	U		5	U	
CHLOROETHANE		10	U		10	U		10	U		10	U	
CHLOROFORM		5	U		5	U		5	U		5	U	
CHLOROMETHANE		10	U		10	U		10	U		10	U	
CIS-1,2-DICHLOROETHENE		5	U		5	U		5	U		5	U	
CIS-1,3-DICHLOROPROPENE		5	U		5	U		5	U		5	U	
CYCLOHEXANE		5	U		5	U		5	U		5	U	
DICHLORODIFLUOROMETHANE		10	U		10	U		10	U		10	U	
ETHYLBENZENE		5	U		5	U		5	U		5	U	
ISOPROPYLBENZENE		5	U		5	U		5	U		5	U	
METHYL ACETATE		10	UJ	C	10	U		10	UJ	C	10	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB02-052109			CRP-TB06-052009			CRP-TB07-052109			CRP-TB08-052209		
SDG: CARPT003	LAB_ID	0905206-09			0905193-05			0905206-08			0905217-04		
FRACTION: OV	SAMP_DATE	5/21/2009			5/20/2009			5/21/2009			5/22/2008		
MEDIA: WATER	QC_TYPE	RB			TB			TB			TB		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER		5	U		5	U		5	U		5	U	
METHYLENE CHLORIDE		0.41	J	P	10	U		10	U		10	U	
STYRENE		5	U		5	U		5	U		5	U	
TETRACHLOROETHENE		5	U		5	U		5	U		5	U	
TOLUENE		0.14	J	P	5	U		5	U		5	U	
TOTAL XYLENES		5	U		5	U		5	U		5	U	
TRANS-1,2-DICHLOROETHENE		5	U		5	U		5	U		5	U	
TRANS-1,3-DICHLOROPROPENE		5	U		5	U		5	U		5	U	
TRICHLOROETHENE		5	U		5	U		5	U		5	U	
TRICHLOROFLUOROMETHANE		10	U		10	U		10	U		10	U	
VINYL CHLORIDE		10	U		10	U		10	U		10	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB02-0810			CRP-SB02-1618			CRP-SB02-2426			CRP-SB02-DUP03		
SDG: CARPT003	LAB_ID	0905193-01			0905193-02			0905193-03			0905193-04		
FRACTION: OS	SAMP_DATE	5/20/2009			5/20/2009			5/20/2009			5/20/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			FD		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.5			91.1			89.9			90.3		
	DUP_OF										CRP-SB02-0810		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		360	U		360	U		370	U		370	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		720	U		730	U		740	U		740	U	
2,4,5-TRICHLOROPHENOL		360	U		360	U		370	U		370	U	
2,4,6-TRICHLOROPHENOL		360	U		360	U		370	U		370	U	
2,4-DICHLOROPHENOL		360	U		360	U		370	U		370	U	
2,4-DIMETHYLPHENOL		1400	U		1500	U		1500	U		1500	U	
2,4-DINITROPHENOL		3600	U		3600	U		3700	U		3700	U	
2,4-DINITROTOLUENE		360	U		360	U		370	U		370	U	
2,6-DINITROTOLUENE		360	U		360	U		370	U		370	U	
2-CHLORONAPHTHALENE		360	U		360	U		370	U		370	U	
2-CHLOROPHENOL		360	U		360	U		370	U		370	U	
2-METHYLNAPHTHALENE		360	U		360	U		370	U		370	U	
2-METHYLPHENOL		360	U		360	U		370	U		370	U	
2-NITROANILINE		1400	U		1500	U		1500	U		1500	U	
2-NITROPHENOL		360	U		360	U		370	U		370	U	
3,3'-DICHLOROBENZIDINE		360	U		360	U		370	U		370	U	
3-NITROANILINE		1400	U		1500	U		1500	U		1500	U	
4,6-DINITRO-2-METHYLPHENOL		1400	U		1500	U		1500	U		1500	U	
4-BROMOPHENYL PHENYL ETHER		360	U		360	U		370	U		370	U	
4-CHLORO-3-METHYLPHENOL		360	U		360	U		370	U		370	U	
4-CHLOROANILINE		360	U		360	U		370	U		370	U	
4-CHLOROPHENYL PHENYL ETHER		360	U		360	U		370	U		370	U	
4-METHYLPHENOL		360	U		360	U		370	U		370	U	
4-NITROANILINE		1400	U		1500	U		1500	U		1500	U	
4-NITROPHENOL		1400	U		1500	U		1500	U		1500	U	
ACENAPHTHENE		360	U		360	U		370	U		370	U	
ACENAPHTHYLENE		360	U		360	U		370	U		370	U	
ACETOPHENONE		360	U		360	U		370	U		370	U	
ANTHRACENE		360	U		360	U		370	U		370	U	
ATRAZINE		360	U		360	U		370	U		370	U	
BENZALDEHYDE		360	U		360	U		370	U		370	U	
BENZO(A)ANTHRACENE		360	U		360	U		370	U		370	U	
BENZO(A)PYRENE		72	U		73	U		74	U		74	U	
BENZO(B)FLUORANTHENE		360	U		360	U		370	U		370	U	
BENZO(G,H,I)PERYLENE		360	U		360	U		370	U		370	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB03-0810			CRP-SB03-1618			CRP-SB03-2830			CRP-SB10-0810		
SDG: CARPT003	LAB_ID	0905206-04			0905206-05			0905206-06			0905206-02		
FRACTION: OS	SAMP_DATE	5/21/2009			5/21/2009			5/21/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.0			99.6			90.8			89.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		350	U		330	U		370	U		370	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		700	U		670	U		730	U		740	U	
2,4,5-TRICHLOROPHENOL		350	U		330	U		370	U		370	U	
2,4,6-TRICHLOROPHENOL		350	U		330	U		370	U		370	U	
2,4-DICHLOROPHENOL		350	U		330	U		370	U		370	U	
2,4-DIMETHYLPHENOL		1400	UJ	D	1300	U		1500	U		1500	U	
2,4-DINITROPHENOL		3500	U		3300	U		3700	U		3700	U	
2,4-DINITROTOLUENE		350	U		330	U		370	U		370	U	
2,6-DINITROTOLUENE		350	U		330	U		370	U		370	U	
2-CHLORONAPHTHALENE		350	U		330	U		370	U		370	U	
2-CHLOROPHENOL		350	U		330	U		370	U		370	U	
2-METHYLNAPHTHALENE		350	U		330	U		370	U		370	U	
2-METHYLPHENOL		350	U		330	U		370	U		370	U	
2-NITROANILINE		1400	U		1300	U		1500	U		1500	U	
2-NITROPHENOL		350	U		330	U		370	U		370	U	
3,3'-DICHLOROBENZIDINE		350	UJ	D	330	U		370	U		370	U	
3-NITROANILINE		1400	U		1300	U		1500	U		1500	U	
4,6-DINITRO-2-METHYLPHENOL		1400	U		1300	U		1500	U		1500	U	
4-BROMOPHENYL PHENYL ETHER		350	U		330	U		370	U		370	U	
4-CHLORO-3-METHYLPHENOL		350	U		330	U		370	U		370	U	
4-CHLOROANILINE		350	U		330	U		370	U		370	U	
4-CHLOROPHENYL PHENYL ETHER		350	U		330	U		370	U		370	U	
4-METHYLPHENOL		350	U		330	U		370	U		370	U	
4-NITROANILINE		1400	U		1300	U		1500	U		1500	U	
4-NITROPHENOL		1400	U		1300	U		1500	U		1500	U	
ACENAPHTHENE		350	U		330	U		370	U		370	U	
ACENAPHTHYLENE		350	U		330	U		370	U		370	U	
ACETOPHENONE		350	U		330	U		370	U		370	U	
ANTHRACENE		350	U		330	U		370	U		370	U	
ATRAZINE		350	U		330	U		370	U		370	U	
BENZALDEHYDE		350	U		330	U		370	U		370	U	
BENZO(A)ANTHRACENE		350	U		330	U		370	U		370	U	
BENZO(A)PYRENE		70	U		67	U		73	U		74	U	
BENZO(B)FLUORANTHENE		350	U		330	U		370	U		370	U	
BENZO(G,H,I)PERYLENE		350	U		330	U		370	U		370	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB10-1214			CRP-SB10-1618			CRP-SB11-0810			CRP-SB11-1214		
SDG: CARPT003	LAB_ID	0905206-01			0905206-03			0905217-01			0905217-02		
FRACTION: OS	SAMP_DATE	5/21/2009			5/21/2009			5/22/2009			5/22/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	89.5			89.1			89.7			86.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		370	U		370	U		370	U		390	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		740	U		750	U		740	U		770	U	
2,4,5-TRICHLOROPHENOL		370	U		370	U		370	U		390	U	
2,4,6-TRICHLOROPHENOL		370	U		370	U		370	U		390	U	
2,4-DICHLOROPHENOL		370	U		370	U		370	U		390	U	
2,4-DIMETHYLPHENOL		1500	U		1500	U		1500	U		1500	U	
2,4-DINITROPHENOL		3700	U		3700	U		3700	U		3900	U	
2,4-DINITROTOLUENE		370	U		370	U		370	U		390	U	
2,6-DINITROTOLUENE		370	U		370	U		370	U		390	U	
2-CHLORONAPHTHALENE		370	U		370	U		370	U		390	U	
2-CHLOROPHENOL		370	U		370	U		370	U		390	U	
2-METHYLNAPHTHALENE		370	U		370	U		370	U		390	U	
2-METHYLPHENOL		370	U		370	U		370	U		390	U	
2-NITROANILINE		1500	U		1500	U		1500	U		1500	U	
2-NITROPHENOL		370	U		370	U		370	U		390	U	
3,3'-DICHLOROBENZIDINE		370	U		370	U		370	U		390	U	
3-NITROANILINE		1500	U		1500	U		1500	U		1500	U	
4,6-DINITRO-2-METHYLPHENOL		1500	U		1500	U		1500	U		1500	U	
4-BROMOPHENYL PHENYL ETHER		370	U		370	U		370	U		390	U	
4-CHLORO-3-METHYLPHENOL		370	U		370	U		370	U		390	U	
4-CHLOROANILINE		370	U		370	U		370	U		390	U	
4-CHLOROPHENYL PHENYL ETHER		370	U		370	U		370	U		390	U	
4-METHYLPHENOL		370	U		370	U		370	U		390	U	
4-NITROANILINE		1500	U		1500	U		1500	U		1500	U	
4-NITROPHENOL		1500	U		1500	U		1500	U		1500	U	
ACENAPHTHENE		370	U		370	U		370	U		390	U	
ACENAPHTHYLENE		370	U		370	U		370	U		390	U	
ACETOPHENONE		370	U		370	U		370	U		390	U	
ANTHRACENE		370	U		370	U		370	U		390	U	
ATRAZINE		370	U		370	U		370	U		390	U	
BENZALDEHYDE		370	U		370	U		370	U		390	U	
BENZO(A)ANTHRACENE		370	U		370	U		370	U		390	U	
BENZO(A)PYRENE		74	U		75	U		74	U		77	U	
BENZO(B)FLUORANTHENE		370	U		370	U		370	U		390	U	
BENZO(G,H,I)PERYLENE		370	U		370	U		370	U		390	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB11-1618			CRP-SB-DUP04		
SDG: CARPT003	LAB_ID	0905217-03			0905206-07		
FRACTION: OS	SAMP_DATE	5/22/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			FD		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	89.9			91.1		
	DUP_OF				CRP-SB03-2830		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		370	U		360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		740	U		730	U	
2,4,5-TRICHLOROPHENOL		370	U		360	U	
2,4,6-TRICHLOROPHENOL		370	U		360	U	
2,4-DICHLOROPHENOL		370	U		360	U	
2,4-DIMETHYLPHENOL		1500	U		1500	U	
2,4-DINITROPHENOL		3700	U		3600	U	
2,4-DINITROTOLUENE		370	U		360	U	
2,6-DINITROTOLUENE		370	U		360	U	
2-CHLORONAPHTHALENE		370	U		360	U	
2-CHLOROPHENOL		370	U		360	U	
2-METHYLNAPHTHALENE		370	U		360	U	
2-METHYLPHENOL		370	U		360	U	
2-NITROANILINE		1500	U		1500	U	
2-NITROPHENOL		370	U		360	U	
3,3'-DICHLOROBENZIDINE		370	U		360	U	
3-NITROANILINE		1500	U		1500	U	
4,6-DINITRO-2-METHYLPHENOL		1500	U		1500	U	
4-BROMOPHENYL PHENYL ETHER		370	U		360	U	
4-CHLORO-3-METHYLPHENOL		370	U		360	U	
4-CHLOROANILINE		370	U		360	U	
4-CHLOROPHENYL PHENYL ETHER		370	U		360	U	
4-METHYLPHENOL		370	U		360	U	
4-NITROANILINE		1500	U		1500	U	
4-NITROPHENOL		1500	U		1500	U	
ACENAPHTHENE		370	U		360	U	
ACENAPHTHYLENE		370	U		360	U	
ACETOPHENONE		370	U		360	U	
ANTHRACENE		370	U		360	U	
ATRAZINE		370	U		360	U	
BENZALDEHYDE		370	U		360	U	
BENZO(A)ANTHRACENE		370	U		360	U	
BENZO(A)PYRENE		74	U		73	U	
BENZO(B)FLUORANTHENE		370	U		360	U	
BENZO(G,H,I)PERYLENE		370	U		360	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB02-0810			CRP-SB02-1618			CRP-SB02-2426			CRP-SB02-DUP03		
SDG: CARPT003	LAB_ID	0905193-01			0905193-02			0905193-03			0905193-04		
FRACTION: OS	SAMP_DATE	5/20/2009			5/20/2009			5/20/2009			5/20/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			FD		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.5			91.1			89.9			90.3		
	DUP_OF										CRP-SB02-0810		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		360	U		360	U		370	U		370	U	
BIS(2-CHLOROETHOXY)METHANE		360	U		360	U		370	U		370	U	
BIS(2-CHLOROETHYL)ETHER		360	U		360	U		370	U		370	U	
BIS(2-ETHYLHEXYL)PHTHALATE		360	U		360	U		370	U		370	U	
BUTYL BENZYL PHTHALATE		360	U		360	U		370	U		370	U	
CAPROLACTAM		360	U		360	U		160	J	EP	200	J	EP
CARBAZOLE		720	U		730	U		740	U		740	U	
CHRYSENE		72	U		73	U		74	U		74	U	
DIBENZO(A,H)ANTHRACENE		72	U		73	U		74	U		74	U	
DIBENZOFURAN		360	U		360	U		370	U		370	U	
DIETHYL PHTHALATE		360	U		360	U		370	U		370	U	
DIMETHYL PHTHALATE		360	U		360	U		370	U		370	U	
DI-N-BUTYL PHTHALATE		360	U		360	U		370	U		370	U	
DI-N-OCTYL PHTHALATE		360	U		360	U		370	U		370	U	
FLUORANTHENE		360	U		360	U		370	U		370	U	
FLUORENE		360	U		360	U		370	U		370	U	
HEXACHLOROBENZENE		72	U		73	U		74	U		74	U	
HEXACHLOROBUTADIENE		360	U		360	U		370	U		370	U	
HEXACHLOROCYCLOPENTADIENE		360	U		360	U		370	U		370	U	
HEXACHLOROETHANE		720	U		730	U		740	U		740	U	
INDENO(1,2,3-CD)PYRENE		360	U		360	U		370	U		370	U	
ISOPHORONE		360	U		360	U		370	U		370	U	
NAPHTHALENE		360	U		360	U		370	U		370	U	
NITROBENZENE		360	U		360	U		370	U		370	U	
N-NITROSO-DI-N-PROPYLAMINE		360	U		360	U		370	U		370	U	
N-NITROSODIPHENYLAMINE		360	U		360	U		370	U		370	U	
PENTACHLOROPHENOL		1400	U		1500	U		1500	U		1500	U	
PHENANTHRENE		360	U		360	U		370	U		370	U	
PHENOL		360	U		360	U		370	U		370	U	
PYRENE		360	U		360	U		370	U		370	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB03-0810			CRP-SB03-1618			CRP-SB03-2830			CRP-SB10-0810		
SDG: CARPT003	LAB_ID	0905206-04			0905206-05			0905206-06			0905206-02		
FRACTION: OS	SAMP_DATE	5/21/2009			5/21/2009			5/21/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.0			99.6			90.8			89.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		350	U		330	U		370	U		370	U	
BIS(2-CHLOROETHOXY)METHANE		350	U		330	U		370	U		370	U	
BIS(2-CHLOROETHYL)ETHER		350	U		330	U		370	U		370	U	
BIS(2-ETHYLHEXYL)PHTHALATE		350	U		330	U		370	U		500		
BUTYL BENZYL PHTHALATE		350	U		330	U		370	U		370	U	
CAPROLACTAM		120	J	EP	330	U		370	U		370	U	
CARBAZOLE		700	U		670	U		730	U		740	U	
CHRYSENE		70	U		67	U		73	U		74	U	
DIBENZO(A,H)ANTHRACENE		70	U		67	U		73	U		74	U	
DIBENZOFURAN		350	U		330	U		370	U		370	U	
DIETHYL PHTHALATE		350	U		330	U		370	U		370	U	
DIMETHYL PHTHALATE		350	U		330	U		370	U		370	U	
DI-N-BUTYL PHTHALATE		350	U		330	U		370	U		370	U	
DI-N-OCTYL PHTHALATE		350	U		330	U		370	U		370	U	
FLUORANTHENE		350	U		330	U		370	U		370	U	
FLUORENE		350	U		330	U		370	U		370	U	
HEXACHLOROBENZENE		70	U		67	U		73	U		74	U	
HEXACHLOROBUTADIENE		350	U		330	U		370	U		370	U	
HEXACHLOROCYCLOPENTADIENE		350	U		330	U		370	U		370	U	
HEXACHLOROETHANE		700	U		670	U		730	U		740	U	
INDENO(1,2,3-CD)PYRENE		350	U		330	U		370	U		370	U	
ISOPHORONE		350	U		330	U		370	U		370	U	
NAPHTHALENE		350	U		330	U		370	U		370	U	
NITROBENZENE		350	U		330	U		370	U		370	U	
N-NITROSO-DI-N-PROPYLAMINE		350	U		330	U		370	U		370	U	
N-NITROSODIPHENYLAMINE		350	U		330	U		370	U		370	U	
PENTACHLOROPHENOL		1400	U		1300	U		1500	U		1500	U	
PHENANTHRENE		350	U		330	U		370	U		370	U	
PHENOL		350	U		330	U		370	U		370	U	
PYRENE		350	U		330	U		370	U		370	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB10-1214			CRP-SB10-1618			CRP-SB11-0810			CRP-SB11-1214		
SDG: CARPT003	LAB_ID	0905206-01			0905206-03			0905217-01			0905217-02		
FRACTION: OS	SAMP_DATE	5/21/2009			5/21/2009			5/22/2009			5/22/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	89.5			89.1			89.7			86.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		370	U		370	U		370	U		390	U	
BIS(2-CHLOROETHOXY)METHANE		370	U		370	U		370	U		390	U	
BIS(2-CHLOROETHYL)ETHER		370	U		370	U		370	U		390	U	
BIS(2-ETHYLHEXYL)PHTHALATE		370	U		480			370	U		390	U	
BUTYL BENZYL PHTHALATE		370	U		370	U		370	U		390	U	
CAPROLACTAM		370	U		86	J	EP	370	U		390	U	
CARBAZOLE		740	U		750	U		740	U		770	U	
CHRYSENE		74	U		75	U		74	U		77	U	
DIBENZO(A,H)ANTHRACENE		74	U		75	U		74	U		77	U	
DIBENZOFURAN		370	U		370	U		370	U		390	U	
DIETHYL PHTHALATE		370	U		370	U		370	U		390	U	
DIMETHYL PHTHALATE		370	U		370	U		370	U		390	U	
DI-N-BUTYL PHTHALATE		370	U		370	U		370	U		390	U	
DI-N-OCTYL PHTHALATE		370	U		370	U		370	UJ	C	390	UJ	C
FLUORANTHENE		370	U		370	U		370	U		390	U	
FLUORENE		370	U		370	U		370	U		390	U	
HEXACHLOROBENZENE		74	U		75	U		74	U		77	U	
HEXACHLOROBUTADIENE		370	U		370	U		370	U		390	U	
HEXACHLOROCYCLOPENTADIENE		370	U		370	U		370	U		390	U	
HEXACHLOROETHANE		740	U		750	U		740	U		770	U	
INDENO(1,2,3-CD)PYRENE		370	U		370	U		370	U		390	U	
ISOPHORONE		370	U		370	U		370	U		390	U	
NAPHTHALENE		370	U		370	U		370	U		390	U	
NITROBENZENE		370	U		370	U		370	U		390	U	
N-NITROSO-DI-N-PROPYLAMINE		370	U		370	U		370	U		390	U	
N-NITROSODIPHENYLAMINE		370	U		370	U		370	U		390	U	
PENTACHLOROPHENOL		1500	U		1500	U		1500	U		1500	U	
PHENANTHRENE		370	U		370	U		370	U		390	U	
PHENOL		370	U		370	U		370	U		390	U	
PYRENE		370	U		370	U		370	U		390	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB11-1618			CRP-SB-DUP04		
SDG: CARPT003	LAB_ID	0905217-03			0905206-07		
FRACTION: OS	SAMP_DATE	5/22/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			FD		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	89.9			91.1		
	DUP_OF				CRP-SB03-2830		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		370	U		360	U	
BIS(2-CHLOROETHOXY)METHANE		370	U		360	U	
BIS(2-CHLOROETHYL)ETHER		370	U		360	U	
BIS(2-ETHYLHEXYL)PHTHALATE		370	U		360	U	
BUTYL BENZYL PHTHALATE		370	U		360	U	
CAPROLACTAM		370	U		360	U	
CARBAZOLE		740	U		730	U	
CHRYSENE		74	U		73	U	
DIBENZO(A,H)ANTHRACENE		74	U		73	U	
DIBENZOFURAN		370	U		360	U	
DIETHYL PHTHALATE		370	U		360	U	
DIMETHYL PHTHALATE		370	U		360	U	
DI-N-BUTYL PHTHALATE		370	U		360	U	
DI-N-OCTYL PHTHALATE		370	UJ	C	360	UJ	C
FLUORANTHENE		370	U		360	U	
FLUORENE		370	U		360	U	
HEXACHLOROBENZENE		74	U		73	U	
HEXACHLOROBUTADIENE		370	U		360	U	
HEXACHLOROCYCLOPENTADIENE		370	U		360	U	
HEXACHLOROETHANE		740	U		730	U	
INDENO(1,2,3-CD)PYRENE		370	U		360	U	
ISOPHORONE		370	U		360	U	
NAPHTHALENE		370	U		360	U	
NITROBENZENE		370	U		360	U	
N-NITROSO-DI-N-PROPYLAMINE		370	U		360	U	
N-NITROSODIPHENYLAMINE		370	U		360	U	
PENTACHLOROPHENOL		1500	U		1500	U	
PHENANTHRENE		370	U		360	U	
PHENOL		370	U		360	U	
PYRENE		370	U		360	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB02-052109		
SDG: CARPT003	LAB_ID	0905206-09		
FRACTION: OS	SAMP_DATE	5/21/2009		
MEDIA: WATER	QC_TYPE	RB		
	UNITS	UG/L		
	PCT_SOLIDS			
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
1,1-BIPHENYL		4.7	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		9.4	U	
2,4,5-TRICHLOROPHENOL		4.7	U	
2,4,6-TRICHLOROPHENOL		4.7	U	
2,4-DICHLOROPHENOL		4.7	U	
2,4-DIMETHYLPHENOL		19	U	
2,4-DINITROPHENOL		47	U	
2,4-DINITROTOLUENE		4.7	U	
2,6-DINITROTOLUENE		4.7	U	
2-CHLORONAPHTHALENE		4.7	U	
2-CHLOROPHENOL		4.7	U	
2-METHYLNAPHTHALENE		4.7	U	
2-METHYLPHENOL		4.7	U	
2-NITROANILINE		19	U	
2-NITROPHENOL		4.7	U	
3,3'-DICHLOROBENZIDINE		4.7	U	
3-NITROANILINE		19	U	
4,6-DINITRO-2-METHYLPHENOL		19	U	
4-BROMOPHENYL PHENYL ETHER		4.7	U	
4-CHLORO-3-METHYLPHENOL		4.7	U	
4-CHLOROANILINE		4.7	U	
4-CHLOROPHENYL PHENYL ETHER		4.7	U	
4-METHYLPHENOL		4.7	U	
4-NITROANILINE		19	U	
4-NITROPHENOL		19	U	
ACENAPHTHENE		4.7	U	
ACENAPHTHYLENE		4.7	U	
ACETOPHENONE		4.7	U	
ANTHRACENE		4.7	U	
ATRAZINE		4.7	U	
BENZALDEHYDE		4.7	U	
BENZO(A)ANTHRACENE		4.7	U	
BENZO(A)PYRENE		0.94	U	
BENZO(B)FLUORANTHENE		4.7	U	
BENZO(G,H,I)PERYLENE		4.7	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB02-052109		
SDG: CARPT003	LAB_ID	0905206-09		
FRACTION: OS	SAMP_DATE	5/21/2009		
MEDIA: WATER	QC_TYPE	RB		
	UNITS	UG/L		
	PCT_SOLIDS			
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		4.7	U	
BIS(2-CHLOROETHOXY)METHANE		4.7	U	
BIS(2-CHLOROETHYL)ETHER		4.7	U	
BIS(2-ETHYLHEXYL)PHTHALATE		4.7	U	
BUTYL BENZYL PHTHALATE		4.7	U	
CAPROLACTAM		4.7	UJ	AE
CARBAZOLE		9.4	U	
CHRYSENE		2.8	U	
DIBENZO(A,H)ANTHRACENE		4.7	U	
DIBENZOFURAN		4.7	U	
DIETHYL PHTHALATE		4.7	U	
DIMETHYL PHTHALATE		4.7	U	
DI-N-BUTYL PHTHALATE		4.7	U	
DI-N-OCTYL PHTHALATE		4.7	U	
FLUORANTHENE		4.7	U	
FLUORENE		4.7	U	
HEXACHLOROBENZENE		0.94	U	
HEXACHLOROBUTADIENE		4.7	U	
HEXACHLOROCYCLOPENTADIENE		4.7	UJ	C
HEXACHLOROETHANE		9.4	U	
INDENO(1,2,3-CD)PYRENE		4.7	U	
ISOPHORONE		4.7	U	
NAPHTHALENE		4.7	U	
NITROBENZENE		4.7	U	
N-NITROSO-DI-N-PROPYLAMINE		4.7	U	
N-NITROSODIPHENYLAMINE		4.7	U	
PENTACHLOROPHENOL		19	U	
PHENANTHRENE		4.7	U	
PHENOL		4.7	U	
PYRENE		4.7	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB02-0810			CRP-SB02-1618			CRP-SB02-2426			CRP-SB02-DUP03		
SDG: CARPT003	LAB_ID	0905193-01			0905193-02			0905193-03			0905193-04		
FRACTION: PEST/PCB	SAMP_DATE	5/20/2009			5/20/2009			5/20/2009			5/20/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			FD		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.5			91.1			89.9			90.3		
	DUP_OF										CRP-SB02-0810		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.72	U		0.73	U		0.74	U		0.74	U	
4,4'-DDE		0.72	U		0.73	U		0.74	U		0.74	U	
4,4'-DDT		0.72	U		0.73	U		0.74	U		0.74	U	
ALDRIN		0.36	U		0.36	U		0.37	U		0.37	U	
ALPHA-BHC		0.36	U		2.6	UJ	U	0.37	U		0.37	U	
ALPHA-CHLORDANE		0.36	U		0.36	U		0.37	U		0.37	U	
AROCLOR-1016		18	U		18	U		18	U		18	U	
AROCLOR-1221		18	U		18	U		18	U		18	U	
AROCLOR-1232		18	U		18	U		18	U		18	U	
AROCLOR-1242		18	U		18	U		18	U		18	U	
AROCLOR-1248		18	U		18	U		18	U		18	U	
AROCLOR-1254		18	U		18	U		18	U		18	U	
AROCLOR-1260		18	UJ	U	18	U		18	U		18	U	
BETA-BHC		0.28	J	PU	0.36	U		0.34	J	PU	0.83	UJ	U
DELTA-BHC		0.36	U		0.36	U		0.37	U		0.37	U	
DIELDRIN		0.72	U		0.73	U		0.74	U		0.74	U	
ENDOSULFAN I		0.36	U		0.36	U		0.37	U		0.37	U	
ENDOSULFAN II		0.72	U		0.73	U		0.74	U		0.74	U	
ENDOSULFAN SULFATE		0.72	U		0.73	U		0.74	U		0.74	U	
ENDRIN		0.72	U		0.73	UJ	C	0.74	UJ	C	0.74	UJ	C
ENDRIN ALDEHYDE		0.72	U		0.73	U		0.74	U		0.74	U	
ENDRIN KETONE		0.72	U		0.73	U		0.74	U		0.74	U	
GAMMA-BHC (LINDANE)		0.36	U		0.36	U		0.37	U		0.37	U	
GAMMA-CHLORDANE		0.36	U		0.36	U		0.37	U		0.37	U	
HEPTACHLOR		0.36	U		0.36	U		0.37	U		0.37	U	
HEPTACHLOR EPOXIDE		0.15	J	PU	0.36	U		0.58	UJ	U	0.37	U	
METHOXYCHLOR		2.3	UJ	CU	0.36	UJ	C	0.37	UJ	C	0.37	UJ	C
TOXAPHENE		36	U		36	U		37	U		37	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB03-0810			CRP-SB03-1618			CRP-SB03-2830			CRP-SB10-0810		
SDG: CARPT003	LAB_ID	0905206-04			0905206-05			0905206-06			0905206-02		
FRACTION: PEST/PCB	SAMP_DATE	5/21/2009			5/21/2009			5/21/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.0			99.6			90.8			89.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.7	U		0.67	U		0.73	U		0.74	U	
4,4'-DDE		0.7	U		0.67	U		0.73	U		0.74	U	
4,4'-DDT		0.7	U		0.67	U		0.73	U		0.74	U	
ALDRIN		0.35	U		0.33	U		0.37	U		0.37	U	
ALPHA-BHC		0.35	U		0.33	U		0.37	U		0.37	U	
ALPHA-CHLORDANE		0.35	U		0.33	U		0.37	U		0.37	U	
AROCLOR-1016		18	U		17	U		18	U		18	U	
AROCLOR-1221		18	U		17	U		18	U		18	U	
AROCLOR-1232		18	U		17	U		18	U		18	U	
AROCLOR-1242		18	U		17	U		18	U		18	U	
AROCLOR-1248		18	U		17	U		18	U		18	U	
AROCLOR-1254		18	U		17	U		18	U		18	U	
AROCLOR-1260		18	U		17	U		18	U		18	U	
BETA-BHC		0.35	U		0.33	U		0.37	U		0.37	U	
DELTA-BHC		0.35	U		0.33	U		0.37	U		0.37	U	
DIELDRIN		0.7	U		0.67	U		0.73	U		0.74	U	
ENDOSULFAN I		0.35	U		0.33	U		0.37	U		0.37	U	
ENDOSULFAN II		0.33	J	P	0.67	U		0.36	J	P	0.93		
ENDOSULFAN SULFATE		0.7	UJ	D	0.67	U		0.73	U		0.74	U	
ENDRIN		0.7	U		0.67	U		0.73	U		0.74	U	
ENDRIN ALDEHYDE		0.7	U		0.67	U		0.73	U		0.74	U	
ENDRIN KETONE		0.7	U		0.67	U		0.73	U		0.74	U	
GAMMA-BHC (LINDANE)		0.35	U		0.33	U		0.19	J	PU	0.37	U	
GAMMA-CHLORDANE		0.35	U		0.33	U		0.19	J	PU	0.29	J	PU
HEPTACHLOR		0.35	U		0.33	U		0.37	U		0.37	U	
HEPTACHLOR EPOXIDE		0.35	U		0.33	U		0.37	U		0.37	U	
METHOXYCHLOR		0.35	U		0.33	U		0.37	U		0.37	U	
TOXAPHENE		35	U		33	U		37	U		37	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB10-1214			CRP-SB10-1618			CRP-SB11-0810			CRP-SB11-1214		
SDG: CARPT003	LAB_ID	0905206-01			0905206-03			0905217-01			0905217-02		
FRACTION: PEST/PCB	SAMP_DATE	5/21/2009			5/21/2009			5/22/2009			5/22/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	89.5			89.1			89.7			89.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.74	U		0.75	U		0.74	U		0.77	U	
4,4'-DDE		0.74	U		0.75	U		0.74	U		0.77	U	
4,4'-DDT		0.24	J	P	0.75	U		0.74	U		0.77	U	
ALDRIN		0.37	U		0.37	U		0.37	U		0.39	U	
ALPHA-BHC		0.37	U		0.37	U		0.37	U		0.39	U	
ALPHA-CHLORDANE		0.37	U		0.37	U		0.37	U		0.39	U	
AROCLOR-1016		19	U		19	U		18	U		19	U	
AROCLOR-1221		19	U		19	U		18	U		19	U	
AROCLOR-1232		19	U		19	U		18	U		19	U	
AROCLOR-1242		19	U		19	U		18	U		19	U	
AROCLOR-1248		19	U		19	U		18	U		19	U	
AROCLOR-1254		19	U		19	U		18	U		19	U	
AROCLOR-1260		19	U		19	U		49			19	U	
BETA-BHC		0.37	U		0.37	U		0.37	U		0.39	U	
DELTA-BHC		0.37	U		0.37	U		0.37	U		0.39	U	
DIELDRIN		0.74	U		0.75	U		0.35	J	PU	0.77	U	
ENDOSULFAN I		0.37	U		0.37	U		0.37	U		0.39	U	
ENDOSULFAN II		1.2			4.1			0.49	J	P	0.77	U	
ENDOSULFAN SULFATE		0.74	U		0.75	U		0.74	U		0.77	U	
ENDRIN		0.74	U		0.75	U		0.51	J	PU	0.77	U	
ENDRIN ALDEHYDE		0.74	U		0.75	U		2.8	UJ	U	0.77	U	
ENDRIN KETONE		0.74	U		0.75	U		0.74	U		0.77	U	
GAMMA-BHC (LINDANE)		0.37	U		0.37	U		0.37	U		0.39	U	
GAMMA-CHLORDANE		0.37	U		0.37	U		0.37	U		0.39	U	
HEPTACHLOR		0.37	U		0.37	U		0.37	U		0.39	U	
HEPTACHLOR EPOXIDE		0.37	U		0.37	U		0.37	U		0.39	U	
METHOXYCHLOR		0.37	U		0.37	U		0.37	U		0.39	U	
TOXAPHENE		37	U		37	U		37	U		39	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB11-1618			CRP-SB-DUP04		
SDG: CARPT003	LAB_ID	0905217-03			0905206-07		
FRACTION: PEST/PCB	SAMP_DATE	5/22/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			FD		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	89.9			91.1		
	DUP_OF				CRP-SB03-2830		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.74	U		0.73	U	
4,4'-DDE		0.74	U		0.73	U	
4,4'-DDT		0.74	U		0.73	U	
ALDRIN		0.37	U		0.36	U	
ALPHA-BHC		0.37	U		0.36	U	
ALPHA-CHLORDANE		0.37	U		0.36	U	
AROCLOR-1016		18	U		18	U	
AROCLOR-1221		18	U		18	U	
AROCLOR-1232		18	U		18	U	
AROCLOR-1242		18	U		18	U	
AROCLOR-1248		18	U		18	U	
AROCLOR-1254		18	U		18	U	
AROCLOR-1260		18	U		18	U	
BETA-BHC		0.37	U		0.36	U	
DELTA-BHC		0.37	U		0.36	U	
DIELDRIN		0.74	U		0.73	U	
ENDOSULFAN I		0.37	U		0.36	U	
ENDOSULFAN II		0.74	U		0.28	J	P
ENDOSULFAN SULFATE		0.74	U		0.73	U	
ENDRIN		0.74	U		0.73	U	
ENDRIN ALDEHYDE		0.74	U		0.73	U	
ENDRIN KETONE		0.74	U		0.73	U	
GAMMA-BHC (LINDANE)		0.37	U		0.21	J	PU
GAMMA-CHLORDANE		0.37	U		0.36	U	
HEPTACHLOR		0.37	U		0.36	U	
HEPTACHLOR EPOXIDE		0.37	U		0.36	U	
METHOXYCHLOR		0.37	U		0.36	U	
TOXAPHENE		37	U		36	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB02-052109		
SDG: CARPT003	LAB_ID	0905206-09		
FRACTION: PEST/PCB	SAMP_DATE	5/21/2009		
MEDIA: WATER	QC_TYPE	RB		
	UNITS	UG/L		
	PCT_SOLIDS			
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
4,4'-DDD		0.019	U	
4,4'-DDE		0.019	U	
4,4'-DDT		0.019	U	
ALDRIN		0.0094	U	
ALPHA-BHC		0.0094	U	
ALPHA-CHLORDANE		0.0094	U	
AROCLOR-1016		0.47	U	
AROCLOR-1221		0.47	U	
AROCLOR-1232		0.47	U	
AROCLOR-1242		0.47	U	
AROCLOR-1248		0.47	U	
AROCLOR-1254		0.47	U	
AROCLOR-1260		0.47	U	
BETA-BHC		0.0094	U	
DELTA-BHC		0.0094	U	
DIELDRIN		0.019	U	
ENDOSULFAN I		0.0094	U	
ENDOSULFAN II		0.019	U	
ENDOSULFAN SULFATE		0.019	U	
ENDRIN		0.019	U	
ENDRIN ALDEHYDE		0.019	U	
ENDRIN KETONE		0.019	U	
GAMMA-BHC (LINDANE)		0.0094	U	
GAMMA-CHLORDANE		0.0094	U	
HEPTACHLOR		0.0094	U	
HEPTACHLOR EPOXIDE		0.0094	U	
METHOXYCHLOR		0.0094	U	
TOXAPHENE		0.94	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB02-0810			CRP-SB02-1618			CRP-SB02-2426			CRP-SB02-DUP03		
SDG: CARPT003	LAB_ID	0905193-01			0905193-02			0905193-03			0905193-04		
FRACTION: PET	SAMP_DATE	5/20/2009			5/20/2009			5/20/2009			5/20/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			FD		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	92.5			91.1			89.9			90.3		
	DUP_OF										CRP-SB02-0810		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		5.6			7.1			6.8			9.2		
GASOLINE RANGE ORGANICS		2.4	U		2.2	U		2.4	U		3	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB03-0810			CRP-SB03-1618			CRP-SB03-2830			CRP-SB10-0810		
SDG: CARPT003	LAB_ID	0905206-04			0905206-05			0905206-06			0905206-02		
FRACTION: PET	SAMP_DATE	5/21/2009			5/21/2009			5/21/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	95.0			99.6			90.8			89.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		20			16			15			170		
GASOLINE RANGE ORGANICS		2.4	U		2.3	U		2.2	U		2.7	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB10-1214			CRP-SB10-1618			CRP-SB11-0810			CRP-SB11-1214		
SDG: CARPT003	LAB_ID	0905206-01			0905206-03			0905217-01			0905217-02		
FRACTION: PET	SAMP_DATE	5/21/2009			5/21/2009			5/22/2009			5/22/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	89.5			89.1			89.7			86.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		12			18			15			11		
GASOLINE RANGE ORGANICS		2.3	U		2.3	U		3.1	U		2.5	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB11-1618			CRP-SB-DUP04		
SDG: CARPT003	LAB_ID	0905217-03			0905206-07		
FRACTION: PET	SAMP_DATE	5/22/2009			5/21/2009		
MEDIA: SOIL	QC_TYPE	NM			FD		
	UNITS	MG/KG			MG/KG		
	PCT_SOLIDS	89.9			91.1		
	DUP_OF				CRP-SB03-2830		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		12			12		
GASOLINE RANGE ORGANICS		2.6	U		2.3	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB02-052109		
SDG: CARPT003	LAB_ID	0905206-09		
FRACTION: PET	SAMP_DATE	5/21/2009		
MEDIA: WATER	QC_TYPE	RB		
	UNITS	MG/L		
	PCT_SOLIDS			
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		0.096	U	

TETRA TECH

INTERNAL CORRESPONDENCE

C-NAVY-08-09-3269W

Date: August 10, 2009

c: File G00870-4.10 (w/enc.-original)
T. Campbell (scan, w/o enc.)

To: Steve Parker (scan, w/o enc.)

From: Jennifer Cardinal (no copy) JF (for)

Subject: Tier II Organic Data Validation, SDG CARPT004
Empirical Laboratories, LLC
CTO 406, MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island

VOC/SVOC/Pesticides/PCB/DRO/GRO:

18/Soils/	CRP-SB04-0002	CRP-SB04-0406	CRP-SB04-0810
	CRP-SB04-3234	CRP-SB05-0204	CRP-SB05-0810
	CRP-SB05-3032	CRP-SB06-0810	CRP-SB06-1214
	CRP-SB06-2224	CRP-SB07-0406	CRP-SB07-0810
	CRP-SB07-1416	CRP-SB08-0810	CRP-SB08-1214
	CRP-SB08-1416	CRP-SB-DUP05	CRP-SB-DUP06

(Field Duplicate Pairs: CRP-SB08-0810/CRP-SB-DUP05, CRP-SB06-2224/CRP-SB-DUP06)

1/Rinsate Blank/ CRP-SB-RB03-052809

VOC:

3/Trip Blanks/	CRP-TB09-052609	CRP-TB10-052709	CRP-TB11-052809

Tetra Tech NUS, Inc. (TtNUS) performed a Tier II data validation on the volatile organic compound (VOC), semivolatile organic compound (SVOC), pesticide, polychlorinated biphenyl (PCB), gasoline range organics (GRO), and diesel range organics (DRO) analytical data for the soil samples collected by TtNUS at MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island from May 26-28, 2009. Sample collection and analysis was performed according to the approved Work Plan and Quality Assurance Project Plan for MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island, dated April 2009.

The VOC and SVOC analyses were performed according to USEPA SW-846 Methods 8260B and 8270C, respectively. The pesticides and PCB analyses were performed according to USEPA SW-846 Methods 8081 and 8082, respectively. The GRO and DRO analyses were both performed according to USEPA SW-846 Method 8015B.

The VOC, SVOC, GRO, and DRO data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996. The pesticides and PCB validation was performed in accordance with the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Organic Analyses, Part III, February 2004.

The sample results, validation qualifiers (VQ), and qualifier codes (QLCD) are presented in the enclosed data summary tables. A list of the qualifier codes, which provide the reasons for the validation qualifiers, is enclosed.

The data were evaluated based on the following parameters:

- Data Completeness
- * Preservation and Technical Holding Times
- * GC/MS Instrument Performance Check (Tuning)
- * Pesticide Degradation
- Initial and Continuing Calibrations
- Blanks
- Surrogate Compounds
- * Internal Standards
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample/Laboratory Control Sample Duplicate
- * Field Duplicates
- Analyte Identification/Quantitation
- * Percent Solids
- Reporting Limits

* All criteria were met for this parameter.

Data Completeness

On July 13, 2009 TtNUS field sampler, M. Horton, discovered that sample listed on the chain-of-custody form as CRP-SB05-2224 should have been sample CRP-SB06-2224. The data validation worksheets and data tables were amended to reflect the correct sample identification; however, the laboratory data package (hard copy and pdf file) was left with the identification as per the original chain-of-custody form since the data were already submitted to TtNUS. In all pages of the data package SDG CARPT004 where CRP-SB05-2224 is listed, the correct sample identification should be CRP-SB06-2224. In addition, the field duplicate pair should be CRP-SB06-2224/CRP-SB-DUP06.

Volatiles

On July 23, 2009 the laboratory clarified that the methanol-preserved sample CRP-SB06-2224DL is associated with the LCS V5BLK0604LCS.

Pesticides and PCBs

On July 6, 2009 the laboratory clarified that the Form 10s for the pesticide and PCB analyses report the relative percent difference (RPD) between the results in the dual column analysis and not the %D as indicated by the column header on the forms (see CARPT001).

On July 13, 2009 the laboratory explained that for select samples the pesticide and PCB analysis was performed together. In these cases, the surrogate recoveries were reported together on the Form 2 labeled "Pesticide" (see CARPT001).

Initial and Continuing Calibrations

Volatiles

The following table summarizes the volatile compounds that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	%D	Action		Affected Samples
		(+)	NDs	
2-Butanone	49.2, -28.2		UJ	CRP-TB09-052609, CRP-TB10-052709, CRP-TB11-052809, CRP-SB-RB03-052809, CRP-SB08-1416, CRP-SB08-1214, CRP-SB-DUP05
Acetone	79.7	J	UJ	CRP-TB09-052609, CRP-TB10-052709, CRP-TB11-052809, CRP-SB-RB03-052809
2-Hexaone	47.6		UJ	
4-Methyl-2-pentanone	29.0		UJ	
Methyl acetate	26.7		UJ	
Dichlorodifluoromethane	-28.2		UJ	CRP-SB08-1416, CRP-SB08-1214, CRP-SB-DUP05

Although the %D for acetone, 2-hexanone, 4-methyl-2-pentanone, and methyl acetate exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for the trip blanks and rinsate blank. The positive and non-detected acetone, 2-hexanone, 4-methyl-2-pentanone, and methyl acetate results in the affected samples are usable as estimated values and estimated quantitation limits.

Although the %D for 2-butanone exceeded the QC criterion, the project accuracy goals are not impacted since the affected results are much lower than the project action limit for soils, and there are no regulatory limits established for 2-butanone for the trip blanks or rinsate blank. The non-detected 2-butanone results in the affected samples are usable as estimated quantitation limits.

Although the %D for dichlorodifluoromethane exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for dichlorodifluoromethane for the soil samples. The non-detected dichlorodifluoromethane results in the affected samples are usable as estimated quantitation limits.

Semivolatiles

The following table summarizes the semivolatile compounds that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	%D	Action		Affected Samples
		(+)	NDs	
Di-n-octylphthalate	27.2		UJ	CRP-SB08-0810, CRP-SB08-1416, CRP-SB08-1214, CRP-SB07-0406, CRP-SB07-1416, CRP-SB07-0810

Although the %D for di-n-octylphthalate exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for this compound. The non-detected di-n-octylphthalate results in the affected samples are usable as estimated quantitation limits.

PCBs

The following table summarizes the Aroclor that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	Col. 1 %D	Col. 2 %D	Action		Affected Samples
			(+)	NDs	
Aroclor-1016	-38.2, -34.5	-26.9, -28.1		UJ	All soil samples

Although the %D for Aroclor-1016 exceeded the QC criterion, the project accuracy goals are not impacted since the affected results are much lower than the project action limit. The non-detected Aroclor-1016 results in the affected samples are usable as estimated quantitation limits.

Blanks

Volatiles

The following table summarizes the level of blank contamination detected in the laboratory blank associated with the listed samples:

Compound	Type of Blank	Maximum Concentration	Action Level	Affected Samples
1,2,4-Trichlorobenzene	Method	0.12 µg/L	0.60 µg/L	CRP-TB09-052609, CRP-TB10-052709
2-Hexanone	Method	500 µg/kg	5000 µg/kg	CRP-SB07-1416DL

Blank actions were applied to elevate the reporting limits for 1,2,4-trichlorobenzene and 2-hexanone in the affected samples due to laboratory blank contamination. The 10x rule applies for 2-hexanone while the 5x rule applies for 1,2,4-trichlorobenzene. The positive results below the blank action levels and below the quantitation limits are changed to non-detected values at the quantitation limits (QL).

Although 1,2,4-trichlorobenzene contamination was found in the laboratory blank, the project sensitivity goals are not impacted since there are no regulatory limits established for the trip blank samples. The 1,2,4-trichlorobenzene results in the affected samples are usable as non-detected values.

Although 2-hexanone contamination was found in the laboratory blank, the project sensitivity goals are not impacted since there are no regulatory limits established for this compound for the soil samples. The 2-hexanone result in the affected sample is usable as a non-detected value.

Semivolatiles

The following table summarizes the level of blank contamination detected in the laboratory blank associated with the listed samples:

Compound	Type of Blank	Maximum Concentration	Action Level	Affected Samples
Bis(2-ethylhexyl) phthalate	Method	2.0 µg/L	20 µg/L	CRP-SB-RB03-052809
Caprolactam	Method	1.2 µg/L	6.0 µg/L	

Blank actions were applied to elevate the reporting limits for bis(2-ethylhexyl)phthalate and caprolactam in the rinsate blank sample due to laboratory blank contamination. The 10x rule applies for bis(2-

ethylhexyl)phthalate while the 5x rule applies for caprolactam. The positive results below the blank action level and below the quantitation limit are changed to non-detected values at the quantitation limit (QL).

Although bis(2-ethylhexyl)phthalate and caprolactam contamination was found in the laboratory blank, the project sensitivity goals are not impacted since there are no regulatory limits established for the rinsate blank sample. The bis(2-ethylhexyl)phthalate and caprolactam results in the affected sample are usable as non-detected values.

Pesticides

The following table summarizes the level of blank contamination detected in the laboratory blank associated with the listed samples:

Compound	Type of Blank	Maximum Concentration	Action Level	Affected Samples
Gamma-chlordane	Method	0.31 µg/kg	1.6 µg/kg	All soil samples except CRP-SB06-0810, CRP-SB07-0406

Blank actions were applied to elevate the reporting limits for gamma-chlordane in the affected soil samples due to laboratory blank contamination. The 5x rule applies for gamma-chlordane. The positive results below the blank action level and above the quantitation limit are changed to non-detected values at elevated quantitation limits. The positive results below the blank action level and below the quantitation limit are changed to non-detected values at the quantitation limit (QL).

Although gamma-chlordane contamination was found in the laboratory blank, the project sensitivity goals are not impacted since the affected sample results are much lower than the project action limit. The gamma-chlordane results in the affected sample are usable as non-detected values.

<u>Surrogate Compounds</u>

Volatiles

The following samples had a surrogate spike recovery outside of the recovery limits:

Sample	Surrogate	% Recovery	QC Limits	Action	
				(+)	NDs
CRP-SB05-0810	Dibromofluoromethane	131	80-125	J	
CRP-SB05-3032		126		J	
CRP-SB06-1214RE		130		J	
CRP-SB-DUP06RE		128		J	
CRP-SB-DUP05	1,2-Dichloroethane-d4	62	75-140	J	UJ

The surrogates dibromofluoromethane and 1,2-dichloroethane-d4 recovered outside of the QC limits in the samples listed above. All positive volatile compound results are estimated (J) in samples CRP-SB05-0810, CRP-SB05-3032, CRP-SB06-1214RE, and CRP-SB-DUP06RE due to high surrogate recoveries. All positive and non-detected volatile compound results are estimated (J, UJ) in sample CRP-SB-DUP05 due to a low surrogate recovery.

Although the surrogate recovery QC criteria were not met for dibromofluoromethane the project accuracy goals are not impacted since the affected sample results are much lower than the project action limits for the affected compounds. The affected positive volatile compound results in samples CRP-SB05-0810, CRP-SB05-3032, CRP-SB06-1214RE, and CRP-SB-DUP06RE are usable as estimated values which may be biased high.

The surrogate recovery QC criteria were not met for 1,2-dichloroethane-d4; consequently, the project accuracy goals may be impacted for selected compounds in sample CRP-SB-DUP05. The affected positive and non-detected volatile compound results in sample CRP-SB-DUP05 are usable as estimated values and estimated quantitation limits which may be biased low.

Internal Standards

Volatiles

The following table summarizes the volatile internal standards that failed to meet the acceptance criteria:

Internal Standard	IS Area	Acceptable Range	Action		Affected Samples
			(+)	NDs	
1,4-Dichlorobenzene-d4	158007	173036-692144		UJ	CRP-SB04-3234RE

The internal standard area of 1,4-dichlorobenzene-d4 failed to meet the acceptable range for the sample listed above. All non-detected results associated with 1,4-dichlorobenzene-d4 are estimated (UJ) in sample CRP-SB04-3234RE due to poor internal standard performance.

The target compounds associated with 1,4-dichlorobenzene-d4 are 1,1,2,2-tetrachloroethane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and 1,2-dibromo-3-chloropropane.

Although the QC criteria were not met for the internal standard area of 1,4-dichlorobenzene-d4 for sample CRP-SB04-3234RE the project accuracy goals are not impacted since the affected compounds are reported at values much lower than the project action limits. The non-detected results in the affected samples are usable as estimated quantitation limits.

Matrix Spike/Matrix Spike Duplicate

Volatiles

The following table summarizes the volatile matrix spiking recovery that did not meet QC limits in the matrix spike and matrix spike duplicate analysis and the qualifications applied to the affected sample:

CRP-SB05-0810					
Compound	MS %REC	MSD %REC	QC Limits	Action	
			%REC	(+)	ND
Chlorobenzene	70	73	75-125		UJ
Chloroform	69	65	70-125		UJ

CRP-SB05-0810					
Compound	MS %REC	MSD %REC	QC Limits	Action	
			%REC	(+)	ND
1,2-Dibromoethane	64	66	70-125		UJ
1,2-Dichlorobenzene	73	62	75-120		UJ
1,3-Dichlorobenzene	68	60	70-125		UJ
1,4-Dichlorobenzene	-	61	70-125		UJ
1,1-Dichloroethane	67	67	75-125		UJ
1,2-Dichloroethane	-	67	70-125		UJ
Styrene	72	65	75-125		UJ
trans-1,2-Dichloroethene	62	-	65-135		UJ
1,2,4-Trichlorobenzene	40	40	65-130		UJ
Tetrachloroethene	63	-	65-140		UJ
1,1,1-Trichloroethane	69	69	70-135		UJ
cis-1,3-Dichloropropene	67	67	70-125		UJ
trans-1,3-Dichloropropene	-	61	65-125		UJ
Methyl-tert-butyl ether	53	-	55-150		UJ

-Criterion met

Although the MS/MSD recovery criteria were not met for chlorobenzene, chloroform, 1,2-dibromoethane, 1,2-dichlorobenzene, 1,3-dichlorobezene, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, styrene, 1,2,4-trichlorobenzene, tetrachloroethene, trans-1,2-dichloroethene, 1,1,1-trichloroethane, and methyl-tert-butyl ether; the accuracy project goals are not impacted since the affected sample results are much lower than the project action limits. The affected non-detected results in sample CRP-SB05-0810 are usable as estimated quantitation limits which may be biased low.

Although the MS/MSD recovery criteria were not met for cis-1,3-dichlororpropene and trans-1,3-dichloropropene; the accuracy project goals are not impacted since there are no regulatory limits established for these compounds for the soil samples. The affected non-detected results in sample CRP-SB05-0810 are usable as estimated quantitation limits which may be biased low.

Laboratory Control Sample/Laboratory Control Sample Duplicates

Volatiles

The following table summarizes the volatile compounds that failed to meet the laboratory control sample/duplicate (LCS/LCSD) recovery or relative percent difference (RPD) QC limits:

Compound	%Rec	%Rec QC Limits	RPD	RPD QC Limit	Action		Affected Samples
					(+)	NDs	
Acetone	147	40-140	-		J		CRP-SB-RB03-052809
	-	-	33	30		UJ	CRP-SB08-0810RE,CRP-SB07-0810RE, CRP-SB06-1214RE,CRP-SB-DUP06RE, CRP-SB06-2224DL, CRP-SB04-3234RE
2-Butanone	-	-	40, 36	30		UJ	CRP-SB08-0810RE,CRP-SB07-0810RE, CRP-SB06-1214RE,CRP-SB-DUP06RE, CRP-SB07-1416DL, CRP-SB06-2224DL, CRP-SB04-3234RE
2-Hexanone	-	-	72, 50	30	J	UJ	
4-Methyl-2-pentanone	-	-	40-	30		UJ	CRP-SB08-0810RE,CRP-SB07-0810RE, CRP-SB06-1214RE,CRP-SB-DUP06RE, CRP-SB06-2224DL, CRP-SB04-3234RE

-Criterion met

Although the LCS recovery criteria were not met for acetone, the project accuracy goals are not impacted since there are no regulatory limits established for the rinsate blank sample. The affected positive acetone result in the rinsate blank sample is usable as an estimated value which may be biased low.

Although the LCS/LCSD RPD criteria were not met for acetone, 2-butanone, and 4-methyl-2-pentaone, the project precision goals are not impacted since the affected results are much lower than the project action limits. The affected non-detected acetone, 2-butanone, and 4-methyl-2-pentaone results in the affected samples are usable as estimated quantitation limits for which the bias is indeterminate.

Although the LCS/LCSD RPD criteria were not met for 2-hexanone, the project precision goals are not impacted since there are no regulatory limits established for this compound for the soil samples. The affected positive and non-detected 2-hexanone results in the affected samples are usable as estimated values and estimated quantitation limits for which the bias is indeterminate.

Semivolatiles

The following table summarizes the semivolatile compounds that failed to meet the LCS recovery limits:

Compound	% Rec.	QC Limits	Action		Affected Samples
			(+)	NDs	
Caprolactam	123	50-110	J		CRP-SB07-0810, CRP-SB07-1416, CRP-SB08-1416
	15, 16	20-110	J		CRP-SB-RB03-052809

Although the laboratory control sample recovery criteria were not met for caprolactam the project accuracy goals are not impacted since there are no regulatory limits established for the soil samples and there are no regulatory limits established for the rinsate blank sample. The affected positive caprolactam results in samples CRP-SB07-0810, CRP-SB07-1416, and CRP-SB08-1416 are usable as

estimated values which may be biased high. The affected positive caprolactam result in sample CRP-SB-RB03-052809 is usable as an estimated value which may be biased low.

Field Duplicates

Volatiles

The field duplicate pair CRP-SB08-0810/CRP-SB-DUP05 exceeded the relative percent difference QC criterion of 50% for the following compound:

Analyte	Sample Result (µg/kg)	Duplicate Result (µg/kg)	RPD	Action	
				(+)	NDs
Tetrachloroethene	19	320	178	J	

Although the field duplicate relative percent difference for tetrachloroethene exceeded the QC criterion, the project precision goals are not impacted since the affected sample results are much lower than the project action limit for this compound. The positive tetrachloroethene results in samples CRP-SB08-0810 and CRP-SB-DUP05 are usable as estimated values for which the bias is indeterminate.

The field duplicate pair CRP-SB06-2224/CRP-SB-DUP06 exceeded the relative percent difference QC criterion of 50% for the following compound:

Analyte	Sample Result (µg/kg)	Duplicate Result (µg/kg)	RPD	Action	
				(+)	NDs
Trichloroethene	990	130	154	J	

Although the field duplicate relative percent difference for trichloroethene exceeded the QC criterion, the project precision goals are not impacted since the affected sample results are much lower than the project action limit for the affected compound. The positive trichloroethene results in samples CRP-SB06-2224 and CRP-SB-DUP06 are usable as estimated values for which the bias is indeterminate.

Pesticides

The field duplicate pair CRP-SB08-0810/CRP-SB-DUP05 exceeded the relative percent difference QC criterion of 50% for the following compound:

Analyte	Sample Result (µg/kg)	Duplicate Result (µg/kg)	RPD	Action	
				(+)	NDs
Gamma-chlordane	0.76	0.26	98	J	

Although the field duplicate relative percent difference for gamma-chlordane exceeded the QC criterion, the project precision goals are not impacted since the affected sample results are much lower than the project action limit. The positive gamma-chlordane results in samples CRP-SB08-0810 and CRP-SB-DUP05 are usable as estimated values for which the bias is indeterminate.

Analyte Identification/Quantitation

Pesticides

The relative percent difference (RPD) between the results of analytical columns 1 and 2 exceeded the 40% RPD QC criterion for the compounds in the following samples:

Sample	Analyte	%RPD	Action (+)
CRP-SB08-0810	4,4'-DDT	54.9	J
CRP-SB07-0406	Endosulfan sulfate	48.6	J
	Methoxychlor	115.6	UJ* at 1.2
CRP-SB07-1416	Delta-BHC	87.7	J
CRP-SB05-0204	Endosulfan sulfate	63.0	J
CRP-SB06-0810	Heptachlor epoxide	95.6	J
CRP-SB06-1214	Gamma-chlordane	70.4	J
CRP-SB06-2224	Alpha-BHC	42.3	J
CRP-SB04-0002	4,4'-DDT	160.7	UJ* at 14
	Endrin	110.9	UJ* at 4.2
	Endrin aldehyde	69.5	J
	Gamma-chlordane	191.6	UJ* at 40
CRP-SB04-0810	4,4'-DDT	71.4	J
	Delta-BHC	78.7	J
	Gamma-chlordane	47.8	J
CRP-SB04-3234	Alpha-BHC	158.6	UJ* at 1.8
	Gamma-chlordane	59.9	J
CRP-SB-DUP06	Alpha-BHC	83.4	J
CRP-SB-RB03-052809	Gamma-chlordane	54.0	J
	Heptachlor	78.8	J

*Professional judgment was used to raise the sample quantitation limit to the higher of the two results and qualify the result as estimated, non-detected (UJ).

Although the analyte quantitation relative percent differences exceeded the 40% RPD QC limit for endosulfan sulfate, delta-BHC, heptachlor epoxide, endrin aldehyde, alpha-BHC, and heptachlor in the samples listed above, the project accuracy goals are not impacted since there are no regulatory limits established these compounds for the soil samples. The positive results for the affected compounds in the affected samples are usable as estimated values.

Although the analyte quantitation relative percent differences exceeded the 40% RPD QC limit for 4,4'-DDT and gamma-chlordane in the samples listed above, the project accuracy goals are not impacted since the affected results in the associated samples are well below the project action limits for hese compounds. The positive for 4,4'-DDT and gamma-chlordane in the affected samples are usable as estimated values.

Although the analyte quantitation relative percent differences exceeded the 100% RPD QC limit for methoxychlor, endrin, and alpha-BHC in the samples listed above, the project sensitivity goals are not impacted since there are no regulatory limits established for these compounds for the soil samples. The results for the affected compounds in the affected samples are usable as estimated, non-detected values.

Although the analyte quantitation relative percent differences exceeded the 100% RPD QC limit for 4,4'-DDT and gamma-chlordane in the samples listed above, the project sensitivity goals are not impacted since the affected results are much lower than the project action limits. The results for the affected compounds in the affected samples are usable as estimated, non-detected values.

Reporting Limits

Results above the method detection limit (MDL) and below the quantitation limit (QL) are reported as estimated (J) due to uncertainty below the QL.

Volatiles

Due to high analyte concentrations determined at screening, samples CRP-SB08-1416, CRP-SB08-1214, and CRP-SB-DUP05 were analyzed exclusively from the methanol extract. In addition, due to poor surrogate performance and/or poor internal standard performance, samples CRP-SB06-2224, and CRP-SB07-1416 were selected to be reported from the methanol extract. For these samples, the reporting limits exceeded the project action limits for 1,1-dichloroethene, 1,2-dibromoethane, and vinyl chloride. Data usability may be impacted.

Blank actions were taken on 1,2,4-trichlorobenzene and 2-hexanone in the select samples due to method blank contamination. As described above in the Blanks section, the project sensitivity goals are not impacted.

Semivolatiles

Sample CRP-SB04-0002 was analyzed at 5x dilution. For this sample, the reporting limits exceeded the project action limits for 1,1-biphenyl, 2,4-dinitirotoluene, 3,3'-dichlorobenzidine, 4-nitrophenol, bis(2-chloroethyl)ether, and pentachlorophenol. Data usability may be impacted.

Blank actions were taken on bis(2-ethylhexyl)phthalate and caprolactam in the select samples due to method blank contamination. As described above in the Blanks section, the project sensitivity goals are not impacted.

Pesticides

Blank actions were taken on gamma-chlordane in the select samples due to method blank contamination. As described above in the Blanks section, the project sensitivity goals are not impacted.

The analyte quantitation relative percent differences exceeded the 100% RPD QC limit for methoxychlor, endrin, alpha-BHC, 4,4'-DDT, and gamma-chlordane in select samples. As described in the Analyte Identification/Quantitation section, the project sensitivity goals are not impacted.

Data Usability Assessment

The data usability assessment was performed to determine if the data met the project data quality objectives for acceptable accuracy, precision, sensitivity and completeness; and to determine and define the impact of the exceeded quality control indicators on the technical usability of the data. Please refer to the specific sections in the above validation report for further details.

Volatiles

The project goals with respect to accuracy were met for the volatiles data set. Acetone, 2-hexanone, 4-methyl-2-pentanone, methyl acetate, 2-butanone, and dichlorodifluoromethane were qualified as estimated in select samples due to instrument calibration variability. All positive volatile compound results were qualified as estimated in samples CRP-SB05-0810, CRP-SB05-3032, CRP-SB06-1214RE, and CRP-SB-DUP06RE due to high surrogate recoveries. Sample CRP-SB-DUP05 was qualified as estimated due to a low surrogate recovery. Compounds 1,1,2,2-Tetrachloroethane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and 1,2-dibromo-3-chloropropane were qualified as estimated in sample CRP-SB05-3234RE due to poor internal standard performance. Several volatiles compounds in sample CRP-SB05-0810 were qualified as estimated due to low MS/MSD recoveries. Acetone was qualified as estimated in the rinsate blank samples due to a high LCS recovery. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to precision were met for the volatiles data set. Acetone, 2-butanone, 4-methyl-2-pentaone, and 2-hexanone were qualified as estimated in select samples due to poor LCS/LCSD precision. Tetrachloroethene was qualified as estimated in samples CRP-SB08-0810 and CRP-SB-DUP05 due to poor field duplicate precision. Trichloroethene was qualified as estimated in samples CRP-SB06-2224 and CRP-SB-DUP06 due to poor field duplicate precision. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to sensitivity were met for the volatiles data set with the following exception. The reporting limits for samples CRP-SB08-1416, CRP-SB08-1214, CRP-SB-DUP05, CRP-SB06-2224, and CRP-SB07-1416 exceeded the project action limits for 1,1-dichloroethene, 1,2-dibromoethane, and vinyl chloride. Data usability may be impacted.

The project goals with respect to completeness were met for the volatiles data set. Data usability was not impacted with regards to completeness.

Semivolatiles

The project goals with respect to accuracy were met for the semivolatiles data set. Di-n-octylphthalate was qualified as estimated in select samples due to instrument calibration variability. Caprolactam was qualified as estimated in select samples due to high and low LCS recoveries. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to sensitivity were met for the semivolatiles data set with the following exception. The reporting limits for sample CRP-SB04-0002 exceeded the project action limits for 1,1-biphenyl, 2,4-dinitirotoluene, 3,3'-dichlorobenzidine, 4-nitrophenol, bis(2-chloroethyl)ether, and pentachlorophenol. Data usability may be impacted.

The project goals with respect to precision and completeness were met for the semivolatiles data set. Data usability was not impacted with regards to precision and completeness.

Pesticides

The project goals with respect to accuracy were met for the pesticides data set. Several pesticide compounds were qualified as estimated in select samples due to analytical interferences detected in the dual column analysis. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive results are usable as estimated values.

The project goals with respect to precision were met for the pesticides data set. Gamma-chlordane was qualified as estimated in samples CRP-SB08-0810 and CRP-SB-DUP05 due to poor field duplicate precision. Although specific method criteria were not met in this instance, data usability is not impacted and the affected positive results are usable as estimated values.

The project goals with respect to sensitivity and completeness were met for the pesticides data set. Data usability was not impacted with regards to sensitivity and completeness.

PCBs

The project goals with respect to accuracy were met for the PCB data set. Aroclor-1016 was qualified as estimated in all soil samples due to instrument calibration variability. Although specific method criteria were not met in these instances, data usability is not impacted and the affected non-detected results are usable as estimated quantitation limits.

The project goals with respect to precision, sensitivity, and completeness were met for the PCB data set. Data usability was not impacted with regards to precision, sensitivity, and completeness.

GRO and DRO

The project goals with respect to accuracy, precision, sensitivity, and completeness were met for the GRO and DRO data sets. Data usability was not impacted with regards to accuracy, precision, sensitivity, and completeness.

Tables: Data Validation Qualifiers and Codes
Data Summary Tables

Enclosures: Data Validation Worksheets

Data Validation Qualifiers and Codes

Data Validation Qualifiers:

= No qualifier attached to value (positive hit)
J = Value is estimated
U = Value is not detected
UJ = Value is not detected and estimated
R = Value (positive hit) is not usable
UR = Value was reported as ND but is not usable

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00870	NSAMPLE	CRP-SB04-0002			CRP-SB04-0406			CRP-SB04-0810			CRP-SB04-3234RE		
SDG: CARPT004	LAB_ID	0905238-02			0905238-03			0905238-04			0905238-05RE		
FRACTION: OV	SAMP_DATE	5/28/2009			5/28/2009			5/28/2009			5/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			83.9			88.8			83.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		3.9	U		5.3	U		5	U		4.4	U	
1,1,2,2-TETRACHLOROETHANE		3.9	U		5.3	U		5	U		4.4	UJ	N
1,1,2-TRICHLOROETHANE		3.9	U		5.3	U		5	U		4.4	U	
1,1-DICHLOROETHANE		3.9	U		5.3	U		5	U		4.4	U	
1,1-DICHLOROETHENE		3.9	U		5.3	U		5	U		4.4	U	
1,2,4-TRICHLOROBENZENE		3.9	U		5.3	U		5	U		4.4	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE		3.9	U		5.3	U		5	U		4.4	UJ	N
1,2-DIBROMOETHANE		3.9	U		5.3	U		5	U		4.4	U	
1,2-DICHLOROBENZENE		3.9	U		5.3	U		5	U		4.4	UJ	N
1,2-DICHLOROETHANE		3.9	U		5.3	U		5	U		4.4	U	
1,2-DICHLOROPROPANE		3.9	U		5.3	U		5	U		4.4	U	
1,3-DICHLOROBENZENE		3.9	U		5.3	U		5	U		4.4	UJ	N
1,4-DICHLOROBENZENE		3.9	U		5.3	U		5	U		4.4	UJ	N
2-BUTANONE		39	U		34	J	P	50	U		44	UJ	E
2-HEXANONE		7.8	U		10	U		10	U		8.8	UJ	E
4-METHYL-2-PENTANONE		7.8	U		10	U		10	U		8.8	UJ	E
ACETONE		39	U		140			36	J	P	44	UJ	E
BENZENE		3.9	U		1.2	J	P	5	U		4.4	U	
BROMODICHLOROMETHANE		3.9	U		5.3	U		5	U		4.4	U	
BROMOFORM		3.9	U		5.3	U		5	U		4.4	U	
BROMOMETHANE		7.8	U		10	U		10	U		8.8	U	
CARBON DISULFIDE		3.9	U		1.4	J	P	5	U		4.4	U	
CARBON TETRACHLORIDE		3.9	U		5.3	U		5	U		4.4	U	
CHLOROBENZENE		3.9	U		5.3	U		5	U		4.4	U	
CHLORODIBROMOMETHANE		3.9	U		5.3	U		5	U		4.4	U	
CHLOROETHANE		7.8	U		10	U		10	U		8.8	U	
CHLOROFORM		3.9	U		5.3	U		5	U		4.4	U	
CHLOROMETHANE		7.8	U		10	U		10	U		8.8	U	
CIS-1,2-DICHLOROETHENE		3.9	U		7.3			5	U		4.4	U	
CIS-1,3-DICHLOROPROPENE		3.9	U		5.3	U		5	U		4.4	U	
CYCLOHEXANE		3.9	U		5.3	U		5	U		4.4	U	
DICHLORODIFLUOROMETHANE		7.8	U		10	U		10	U		8.8	U	
ETHYLBENZENE		3.9	U		1.9	J	P	5	U		4.4	U	
ISOPROPYLBENZENE		3.9	U		1.5	J		5	U		4.4	U	
METHYL ACETATE		7.8	U		10	U		10	U		8.8	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB05-0204			CRP-SB05-0810			CRP-SB05-3032			CRP-SB06-0810		
SDG: CARPT004	LAB_ID	0905235-01			0905235-02			0905235-03			0905235-04		
FRACTION: OV	SAMP_DATE	5/27/2009			5/27/2009			5/27/2009			5/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.9			82.8			86.6			88.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
1,1,2,2-TETRACHLOROETHANE		4.6	U		4.8	U		4.6	U		4.3	U	
1,1,2-TRICHLOROETHANE		4.6	U		4.8	U		4.6	U		4.3	U	
1,1-DICHLOROETHANE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
1,1-DICHLOROETHENE		4.6	U		4.8	U		4.6	U		4.3	U	
1,2,4-TRICHLOROBENZENE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
1,2-DIBROMO-3-CHLOROPROPANE		4.6	U		4.8	U		4.6	U		4.3	U	
1,2-DIBROMOETHANE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
1,2-DICHLOROBENZENE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
1,2-DICHLOROETHANE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
1,2-DICHLOROPROPANE		4.6	U		4.8	U		4.6	U		4.3	U	
1,3-DICHLOROBENZENE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
1,4-DICHLOROBENZENE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
2-BUTANONE		20	J	P	48	U		46	U		43	U	
2-HEXANONE		9.2	U		9.6	U		9.3	U		8.6	U	
4-METHYL-2-PENTANONE		9.2	U		9.6	U		9.3	U		8.6	U	
ACETONE		110			7.4	J	PR	46	U		43	U	
BENZENE		4.6	U		4.8	U		4.6	U		4.3	U	
BROMODICHLOROMETHANE		4.6	U		0.43	J	PR	4.6	U		4.3	U	
BROMOFORM		4.6	U		4.8	U		4.6	U		4.3	U	
BROMOMETHANE		9.2	U		9.6	U		9.3	U		8.6	U	
CARBON DISULFIDE		4.6	U		4.8	U		4.6	U		4.3	U	
CARBON TETRACHLORIDE		4.6	U		4.8	U		4.6	U		4.3	U	
CHLOROBENZENE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
CHLORODIBROMOMETHANE		4.6	U		4.8	U		4.6	U		4.3	U	
CHLOROETHANE		9.2	U		9.6	U		9.3	U		8.6	U	
CHLOROFORM		4.6	U		4.8	UJ	D	0.63	J	PR	4.3	U	
CHLOROMETHANE		9.2	U		9.6	U		9.3	U		8.6	U	
CIS-1,2-DICHLOROETHENE		4.6	U		4.8	U		4.6	U		4.3	U	
CIS-1,3-DICHLOROPROPENE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
CYCLOHEXANE		4.6	U		4.8	U		4.6	U		4.3	U	
DICHLORODIFLUOROMETHANE		9.2	U		9.6	U		9.3	U		8.6	U	
ETHYLBENZENE		4.6	U		4.8	U		4.6	U		4.3	U	
ISOPROPYLBENZENE		4.6	U		4.8	U		4.6	U		4.3	U	
METHYL ACETATE		9.2	U		9.6	U		9.3	U		8.6	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB06-1214RE			CRP-SB06-2224DL			CRP-SB07-0406			CRP-SB07-0810RE		
SDG: CARPT004	LAB_ID	0905235-05RE			0905238-01DL			0905229-04			0905229-06RE		
FRACTION: OV	SAMP_DATE	5/27/2009			5/28/2009			5/26/2009			5/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.8			88.5			94.9			90.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5.1	U		240	U		4	U		4.7	U	
1,1,2,2-TETRACHLOROETHANE		5.1	U		240	U		4	U		4.7	U	
1,1,2-TRICHLOROETHANE		5.1	U		240	U		4	U		4.7	U	
1,1-DICHLOROETHANE		5.1	U		240	U		4	U		4.7	U	
1,1-DICHLOROETHENE		5.1	U		240	U		4	U		4.7	U	
1,2,4-TRICHLOROBENZENE		5.1	U		240	U		4	U		4.7	U	
1,2-DIBROMO-3-CHLOROPROPANE		5.1	U		240	U		4	U		4.7	U	
1,2-DIBROMOETHANE		5.1	U		240	U		4	U		4.7	U	
1,2-DICHLOROBENZENE		5.1	U		240	U		4	U		4.7	U	
1,2-DICHLOROETHANE		5.1	U		240	U		4	U		4.7	U	
1,2-DICHLOROPROPANE		5.1	U		240	U		4	U		4.7	U	
1,3-DICHLOROBENZENE		5.1	U		240	U		4	U		4.7	U	
1,4-DICHLOROBENZENE		5.1	U		240	U		4	U		4.7	U	
2-BUTANONE		51	UJ	E	2400	UJ	E	40	U		47	UJ	E
2-HEXANONE		10	UJ	E	480	UJ	E	8.1	U		9.5	UJ	E
4-METHYL-2-PENTANONE		10	UJ	E	480	UJ	E	8.1	U		9.5	UJ	E
ACETONE		51	UJ	E	2400	UJ	E	40	U		47	UJ	E
BENZENE		5.1	U		240	U		4	U		4.7	U	
BROMODICHLOROMETHANE		5.1	U		240	U		4	U		4.7	U	
BROMOFORM		5.1	U		240	U		4	U		4.7	U	
BROMOMETHANE		10	U		480	U		8.1	U		9.5	U	
CARBON DISULFIDE		5.1	U		240	U		4	U		4.7	U	
CARBON TETRACHLORIDE		5.1	U		240	U		4	U		4.7	U	
CHLOROBENZENE		5.1	U		240	U		4	U		4.7	U	
CHLORODIBROMOMETHANE		5.1	U		240	U		4	U		4.7	U	
CHLOROETHANE		10	U		480	U		8.1	U		9.5	U	
CHLOROFORM		5.1	U		240	U		4	U		4.7	U	
CHLOROMETHANE		10	U		480	U		8.1	U		9.5	U	
CIS-1,2-DICHLOROETHENE		5.1	U		240	U		4	U		4.7	U	
CIS-1,3-DICHLOROPROPENE		5.1	U		240	U		4	U		4.7	U	
CYCLOHEXANE		5.1	U		240	U		4	U		4.7	U	
DICHLORODIFLUOROMETHANE		10	U		480	U		8.1	U		9.5	U	
ETHYLBENZENE		5.1	U		240	U		4	U		4.7	U	
ISOPROPYLBENZENE		5.1	U		240	U		4	U		4.7	U	
METHYL ACETATE		10	U		480	U		8.1	U		9.5	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB07-1416DL			CRP-SB08-0810RE			CRP-SB08-1214			CRP-SB08-1416		
SDG: CARPT004	LAB_ID	0905229-05DL			0905229-01RE			0905229-03			0905229-02		
FRACTION: OV	SAMP_DATE	5/26/2009			5/26/2009			5/26/2009			5/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.3			90.0			96.0			87.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		220	U		4.4	U		240	U		220	U	
1,1,2,2-TETRACHLOROETHANE		220	U		4.4	U		240	U		220	U	
1,1,2-TRICHLOROETHANE		220	U		4.4	U		240	U		220	U	
1,1-DICHLOROETHANE		220	U		4.4	U		240	U		220	U	
1,1-DICHLOROETHENE		220	U		4.4	U		240	U		220	U	
1,2,4-TRICHLOROBENZENE		220	U		4.4	U		240	U		220	U	
1,2-DIBROMO-3-CHLOROPROPANE		220	U		4.4	U		240	U		220	U	
1,2-DIBROMOETHANE		220	U		4.4	U		240	U		220	U	
1,2-DICHLOROBENZENE		220	U		4.4	U		240	U		220	U	
1,2-DICHLOROETHANE		220	U		4.4	U		240	U		220	U	
1,2-DICHLOROPROPANE		220	U		4.4	U		240	U		220	U	
1,3-DICHLOROBENZENE		220	U		4.4	U		240	U		220	U	
1,4-DICHLOROBENZENE		220	U		4.4	U		240	U		220	U	
2-BUTANONE		2200	UJ	E	44	UJ	E	2400	UJ	C	2200	UJ	C
2-HEXANONE		440	UJ	AE	8.8	UJ	E	480	U		440	U	
4-METHYL-2-PENTANONE		440	U		8.8	UJ	E	480	U		440	U	
ACETONE		2200	U		44	UJ	E	2400	U		2200	U	
BENZENE		220	U		4.4	U		240	U		220	U	
BROMODICHLOROMETHANE		220	U		4.4	U		240	U		220	U	
BROMOFORM		220	U		4.4	U		240	U		220	U	
BROMOMETHANE		440	U		8.8	U		480	U		440	U	
CARBON DISULFIDE		220	U		4.4	U		240	U		220	U	
CARBON TETRACHLORIDE		220	U		4.4	U		240	U		220	U	
CHLOROBENZENE		220	U		4.4	U		240	U		220	U	
CHLORODIBROMOMETHANE		220	U		4.4	U		240	U		220	U	
CHLOROETHANE		440	U		8.8	U		480	U		440	U	
CHLOROFORM		220	U		4.4	U		240	U		220	U	
CHLOROMETHANE		440	U		8.8	U		480	U		440	U	
CIS-1,2-DICHLOROETHENE		220	U		4.4	U		240	U		220	U	
CIS-1,3-DICHLOROPROPENE		220	U		4.4	U		240	U		220	U	
CYCLOHEXANE		220	U		4.4	U		240	U		220	U	
DICHLORODIFLUOROMETHANE		440	U		8.8	U		480	UJ	C	440	UJ	C
ETHYLBENZENE		220	U		4.4	U		240	U		220	U	
ISOPROPYLBENZENE		220	U		4.4	U		240	U		220	U	
METHYL ACETATE		440	U		8.8	U		480	U		440	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-DUP05			CRP-SB-DUP06RE		
SDG: CARPT004	LAB_ID	0905229-07			0905238-06RE		
FRACTION: OV	SAMP_DATE	5/26/2009			5/28/2009		
MEDIA: SOIL	QC_TYPE	FD			FD		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	90.8			86.0		
	DUP_OF	CRP-SB08-0810			CRP-SB06-2224		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		190	UJ	R	4.6	U	
1,1,2,2-TETRACHLOROETHANE		190	UJ	R	4.6	U	
1,1,2-TRICHLOROETHANE		190	UJ	R	4.6	U	
1,1-DICHLOROETHANE		190	UJ	R	4.6	U	
1,1-DICHLOROETHENE		190	UJ	R	4.6	U	
1,2,4-TRICHLOROBENZENE		190	UJ	R	4.6	U	
1,2-DIBROMO-3-CHLOROPROPANE		190	UJ	R	4.6	U	
1,2-DIBROMOETHANE		190	UJ	R	4.6	U	
1,2-DICHLOROBENZENE		190	UJ	R	4.6	U	
1,2-DICHLOROETHANE		190	UJ	R	4.6	U	
1,2-DICHLOROPROPANE		190	UJ	R	4.6	U	
1,3-DICHLOROBENZENE		190	UJ	R	4.6	U	
1,4-DICHLOROBENZENE		190	UJ	R	4.6	U	
2-BUTANONE		1900	UJ	CR	46	UJ	E
2-HEXANONE		380	UJ	R	9.2	UJ	E
4-METHYL-2-PENTANONE		380	UJ	R	9.2	UJ	E
ACETONE		1900	UJ	R	46	UJ	E
BENZENE		190	UJ	R	4.6	U	
BROMODICHLOROMETHANE		190	UJ	R	4.6	U	
BROMOFORM		190	UJ	R	4.6	U	
BROMOMETHANE		380	UJ	R	9.2	U	
CARBON DISULFIDE		190	UJ	R	4.6	U	
CARBON TETRACHLORIDE		190	UJ	R	4.6	U	
CHLOROBENZENE		190	UJ	R	4.6	U	
CHLORODIBROMOMETHANE		190	UJ	R	4.6	U	
CHLOROETHANE		380	UJ	R	9.2	U	
CHLOROFORM		190	UJ	R	4.6	U	
CHLOROMETHANE		380	UJ	R	9.2	U	
CIS-1,2-DICHLOROETHENE		190	UJ	R	4.6	U	
CIS-1,3-DICHLOROPROPENE		190	UJ	R	4.6	U	
CYCLOHEXANE		190	UJ	R	4.6	U	
DICHLORODIFLUOROMETHANE		380	UJ	CR	9.2	U	
ETHYLBENZENE		190	UJ	R	4.6	U	
ISOPROPYLBENZENE		190	UJ	R	4.6	U	
METHYL ACETATE		380	UJ	R	9.2	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB04-0002			CRP-SB04-0406			CRP-SB04-0810			CRP-SB04-3234RE		
SDG: CARPT004	LAB_ID	0905238-02			0905238-03			0905238-04			0905238-05RE		
FRACTION: OV	SAMP_DATE	5/28/2009			5/28/2009			5/28/2009			5/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			83.9			88.8			83.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		3.9	U		0.44	J	P	5	U		4.4	U	
METHYL TERT-BUTYL ETHER		3.9	U		5.3	U		5	U		4.4	U	
METHYLENE CHLORIDE		7.8	U		10	U		10	U		8.8	U	
STYRENE		3.9	U		5.3	U		5	U		4.4	U	
TETRACHLOROETHENE		3.9	U		5.3	U		5	U		4.4	U	
TOLUENE		3.9	U		1.5	J	P	5	U		4.4	U	
TOTAL XYLENES		3.9	U		11			5	U		4.4	U	
TRANS-1,2-DICHLOROETHENE		3.9	U		5.3	U		5	U		4.4	U	
TRANS-1,3-DICHLOROPROPENE		3.9	U		5.3	U		5	U		4.4	U	
TRICHLOROETHENE		3.9	U		5.3	U		5	U		4.4	U	
TRICHLOROFLUOROMETHANE		7.8	U		10	U		10	U		8.8	U	
VINYL CHLORIDE		7.8	U		2.2	J	P	10	U		8.8	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB05-0204			CRP-SB05-0810			CRP-SB05-3032			CRP-SB06-0810		
SDG: CARPT004	LAB_ID	0905235-01			0905235-02			0905235-03			0905235-04		
FRACTION: OV	SAMP_DATE	5/27/2009			5/27/2009			5/27/2009			5/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.9			82.8			86.6			88.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		4.6	U		4.8	U		4.6	U		4.3	U	
METHYL TERT-BUTYL ETHER		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
METHYLENE CHLORIDE		3.7	J	P	6.8	J	PR	8.1	J	PR	6	J	P
STYRENE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
TETRACHLOROETHENE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
TOLUENE		4.6	U		4.8	U		4.6	U		4.3	U	
TOTAL XYLENES		4.6	U		4.8	U		4.6	U		4.3	U	
TRANS-1,2-DICHLOROETHENE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
TRANS-1,3-DICHLOROPROPENE		4.6	U		4.8	UJ	D	4.6	U		4.3	U	
TRICHLOROETHENE		4.6	U		4.8	U		4.6	U		1.6	J	P
TRICHLOROFLUOROMETHANE		9.2	U		9.6	U		9.3	U		8.6	U	
VINYL CHLORIDE		9.2	U		9.6	U		9.3	U		8.6	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB06-1214RE			CRP-SB06-2224DL			CRP-SB07-0406			CRP-SB07-0810RE		
SDG: CARPT004	LAB_ID	0905235-05RE			0905238-01DL			0905229-04			0905229-06RE		
FRACTION: OV	SAMP_DATE	5/27/2009			5/28/2009			5/26/2009			5/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.8			88.5			94.9			90.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		5.1	U		240	U		4	U		4.7	U	
METHYL TERT-BUTYL ETHER		5.1	U		240	U		4	U		4.7	U	
METHYLENE CHLORIDE		10	U		480	U		8.1	U		9.5	U	
STYRENE		5.1	U		240	U		4	U		4.7	U	
TETRACHLOROETHENE		5.1	U		240	U		4	U		4.7	U	
TOLUENE		5.1	U		240	U		4	U		4.7	U	
TOTAL XYLENES		5.1	U		240	U		4	U		4.7	U	
TRANS-1,2-DICHLOROETHENE		5.1	U		240	U		4	U		4.7	U	
TRANS-1,3-DICHLOROPROPENE		5.1	U		240	U		4	U		4.7	U	
TRICHLOROETHENE		1.4	J	PR	990	J	G	4	U		4.7	U	
TRICHLOROFLUOROMETHANE		10	U		480	U		8.1	U		9.5	U	
VINYL CHLORIDE		10	U		480	U		8.1	U		9.5	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB07-1416DL			CRP-SB08-0810RE			CRP-SB08-1214			CRP-SB08-1416		
SDG: CARPT004	LAB_ID	0905229-05DL			0905229-01RE			0905229-03			0905229-02		
FRACTION: OV	SAMP_DATE	5/26/2009			5/26/2009			5/26/2009			5/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.3			90.0			96.0			87.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		220	U		4.4	U		240	U		220	U	
METHYL TERT-BUTYL ETHER		220	U		4.4	U		240	U		220	U	
METHYLENE CHLORIDE		440	U		8.8	U		480	U		440	U	
STYRENE		220	U		4.4	U		240	U		220	U	
TETRACHLOROETHENE		220	U		19	J	G	2100			890		
TOLUENE		220	U		4.4	U		240	U		220	U	
TOTAL XYLENES		220	U		4.4	U		240	U		220	U	
TRANS-1,2-DICHLOROETHENE		220	U		4.4	U		240	U		220	U	
TRANS-1,3-DICHLOROPROPENE		220	U		4.4	U		240	U		220	U	
TRICHLOROETHENE		220	U		4.4	U		240	U		220	U	
TRICHLOROFLUOROMETHANE		440	U		8.8	U		480	U		440	U	
VINYL CHLORIDE		440	U		8.8	U		480	U		440	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-DUP05			CRP-SB-DUP06RE		
SDG: CARPT004	LAB_ID	0905229-07			0905238-06RE		
FRACTION: OV	SAMP_DATE	5/26/2009			5/28/2009		
MEDIA: SOIL	QC_TYPE	FD			FD		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	90.8			86.0		
	DUP_OF	CRP-SB08-0810			CRP-SB06-2224		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		190	UJ	R	4.6	U	
METHYL TERT-BUTYL ETHER		190	UJ	R	4.6	U	
METHYLENE CHLORIDE		380	UJ	R	9.2	U	
STYRENE		190	UJ	R	4.6	U	
TETRACHLOROETHENE		320	J	GR	4.6	U	
TOLUENE		190	UJ	R	4.6	U	
TOTAL XYLENES		190	UJ	R	4.6	U	
TRANS-1,2-DICHLOROETHENE		190	UJ	R	4.6	U	
TRANS-1,3-DICHLOROPROPENE		190	UJ	R	4.6	U	
TRICHLOROETHENE		190	UJ	R	130	J	GR
TRICHLOROFLUOROMETHANE		380	UJ	R	9.2	U	
VINYL CHLORIDE		380	UJ	R	9.2	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB03-052809			CRP-TB09-052609			CRP-TB10-052709			CRP-TB11-052809		
SDG: CARPT004	LAB_ID	0905238-08			0905229-08			0905235-06			0905238-07		
FRACTION: OV	SAMP_DATE	5/28/2009			5/26/2009			5/27/2009			5/28/2009		
MEDIA: WATER	QC_TYPE	RB			TB			TB			TB		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5	U		5	U		5	U		5	U	
1,1,2,2-TETRACHLOROETHANE		5	U		5	U		5	U		5	U	
1,1,2-TRICHLOROETHANE		5	U		5	U		5	U		5	U	
1,1-DICHLOROETHANE		5	U		5	U		5	U		5	U	
1,1-DICHLOROETHENE		5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE		5	U		5	U	A	5	U	A	5	U	
1,2-DIBROMO-3-CHLOROPROPANE		5	U		5	U		5	U		5	U	
1,2-DIBROMOETHANE		5	U		5	U		5	U		5	U	
1,2-DICHLOROBENZENE		5	U		5	U		5	U		5	U	
1,2-DICHLOROETHANE		5	U		5	U		5	U		5	U	
1,2-DICHLOROPROPANE		5	U		5	U		5	U		5	U	
1,3-DICHLOROBENZENE		5	U		5	U		5	U		5	U	
1,4-DICHLOROBENZENE		5	U		0.1	J	P	5	U		5	U	
2-BUTANONE		50	UJ	C	50	UJ	C	50	UJ	C	50	UJ	C
2-HEXANONE		10	UJ	C	10	UJ	C	10	UJ	C	10	UJ	C
4-METHYL-2-PENTANONE		10	UJ	C	10	UJ	C	10	UJ	C	10	UJ	C
ACETONE		3.2	J	CEP	50	UJ	C	50	UJ	C	50	UJ	C
BENZENE		5	U		5	U		5	U		5	U	
BROMODICHLOROMETHANE		5	U		5	U		5	U		5	U	
BROMOFORM		5	U		5	U		5	U		5	U	
BROMOMETHANE		10	U		10	U		10	U		10	U	
CARBON DISULFIDE		5	U		5	U		5	U		5	U	
CARBON TETRACHLORIDE		5	U		5	U		5	U		5	U	
CHLOROBENZENE		5	U		5	U		5	U		5	U	
CHLORODIBROMOMETHANE		5	U		5	U		5	U		5	U	
CHLOROETHANE		10	U		10	U		10	U		10	U	
CHLOROFORM		5	U		5	U		5	U		0.11	J	P
CHLOROMETHANE		10	U		10	U		10	U		10	U	
CIS-1,2-DICHLOROETHENE		5	U		5	U		5	U		5	U	
CIS-1,3-DICHLOROPROPENE		5	U		5	U		5	U		5	U	
CYCLOHEXANE		5	U		5	U		5	U		5	U	
DICHLORODIFLUOROMETHANE		10	U		10	U		10	U		10	U	
ETHYLBENZENE		5	U		5	U		5	U		5	U	
ISOPROPYLBENZENE		5	U		5	U		5	U		5	U	
METHYL ACETATE		10	UJ	C	10	UJ	C	10	UJ	C	10	UJ	C

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB03-052809			CRP-TB09-052609			CRP-TB10-052709			CRP-TB11-052809		
SDG: CARPT004	LAB_ID	0905238-08			0905229-08			0905235-06			0905238-07		
FRACTION: OV	SAMP_DATE	5/28/2009			5/26/2009			5/27/2009			5/28/2009		
MEDIA: WATER	QC_TYPE	RB			TB			TB			TB		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER		5	U		5	U		5	U		5	U	
METHYLENE CHLORIDE		0.71	J	P	10	U		10	U		10	U	
STYRENE		5	U		5	U		5	U		5	U	
TETRACHLOROETHENE		5	U		5	U		5	U		5	U	
TOLUENE		0.14	J	P	5	U		5	U		5	U	
TOTAL XYLENES		5	U		5	U		5	U		5	U	
TRANS-1,2-DICHLOROETHENE		5	U		5	U		5	U		5	U	
TRANS-1,3-DICHLOROPROPENE		5	U		5	U		5	U		5	U	
TRICHLOROETHENE		5	U		5	U		5	U		5	U	
TRICHLOROFLUOROMETHANE		10	U		10	U		10	U		10	U	
VINYL CHLORIDE		10	U		10	U		10	U		10	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB04-0002			CRP-SB04-0406			CRP-SB04-0810			CRP-SB04-3234		
SDG: CARPT004	LAB_ID	0905238-02			0905238-03			0905238-04			0905238-05		
FRACTION: OS	SAMP_DATE	5/28/2009			5/28/2009			5/28/2009			5/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			83.9			88.8			83.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		1800	U		400	U		380	U		400	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		3700	U		790	U		750	U		800	U	
2,4,5-TRICHLOROPHENOL		1800	U		400	U		380	U		400	U	
2,4,6-TRICHLOROPHENOL		1800	U		400	U		380	U		400	U	
2,4-DICHLOROPHENOL		1800	U		400	U		380	U		400	U	
2,4-DIMETHYLPHENOL		7400	U		1600	U		1500	U		1600	U	
2,4-DINITROPHENOL		18000	U		4000	U		3800	U		4000	U	
2,4-DINITROTOLUENE		1800	U		400	U		380	U		400	U	
2,6-DINITROTOLUENE		1800	U		400	U		380	U		400	U	
2-CHLORONAPHTHALENE		1800	U		400	U		380	U		400	U	
2-CHLOROPHENOL		1800	U		400	U		380	U		400	U	
2-METHYLNAPHTHALENE		1800	U		400	U		380	U		400	U	
2-METHYLPHENOL		1800	U		400	U		380	U		400	U	
2-NITROANILINE		7400	U		1600	U		1500	U		1600	U	
2-NITROPHENOL		1800	U		400	U		380	U		400	U	
3,3'-DICHLOROBENZIDINE		1800	U		400	U		380	U		400	U	
3-NITROANILINE		7400	U		1600	U		1500	U		1600	U	
4,6-DINITRO-2-METHYLPHENOL		7400	U		1600	U		1500	U		1600	U	
4-BROMOPHENYL PHENYL ETHER		1800	U		400	U		380	U		400	U	
4-CHLORO-3-METHYLPHENOL		1800	U		400	U		380	U		400	U	
4-CHLOROANILINE		1800	U		400	U		380	U		400	U	
4-CHLOROPHENYL PHENYL ETHER		1800	U		400	U		380	U		400	U	
4-METHYLPHENOL		1800	U		400	U		380	U		400	U	
4-NITROANILINE		7400	U		1600	U		1500	U		1600	U	
4-NITROPHENOL		7400	U		1600	U		1500	U		1600	U	
ACENAPHTHENE		1800	U		400	U		380	U		400	U	
ACENAPHTHYLENE		1800	U		400	U		380	U		400	U	
ACETOPHENONE		1800	U		400	U		380	U		400	U	
ANTHRACENE		200	J	P	400	U		380	U		400	U	
ATRAZINE		1800	U		400	U		380	U		400	U	
BENZALDEHYDE		1800	U		400	U		380	U		400	U	
BENZO(A)ANTHRACENE		960	J	P	400	U		380	U		400	U	
BENZO(A)PYRENE		1000			79	U		75	U		80	U	
BENZO(B)FLUORANTHENE		950	J	P	400	U		380	U		400	U	
BENZO(G,H,I)PERYLENE		870	J	P	400	U		380	U		400	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB05-0204			CRP-SB05-0810			CRP-SB05-3032			CRP-SB06-0810		
SDG: CARPT004	LAB_ID	0905235-01			0905235-02			0905235-03			0905235-04		
FRACTION: OS	SAMP_DATE	5/27/2009			5/27/2009			5/27/2009			5/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.9			82.8			86.6			88.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		380	U		400	U		380	U		380	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		750	U		800	U		770	U		760	U	
2,4,5-TRICHLOROPHENOL		380	U		400	U		380	U		380	U	
2,4,6-TRICHLOROPHENOL		380	U		400	U		380	U		380	U	
2,4-DICHLOROPHENOL		380	U		400	U		380	U		380	U	
2,4-DIMETHYLPHENOL		1500	U		1600	U		1500	U		1500	U	
2,4-DINITROPHENOL		3800	U		4000	U		3800	U		3800	U	
2,4-DINITROTOLUENE		380	U		400	U		380	U		380	U	
2,6-DINITROTOLUENE		380	U		400	U		380	U		380	U	
2-CHLORONAPHTHALENE		380	U		400	U		380	U		380	U	
2-CHLOROPHENOL		380	U		400	U		380	U		380	U	
2-METHYLNAPHTHALENE		380	U		400	U		380	U		380	U	
2-METHYLPHENOL		380	U		400	U		380	U		380	U	
2-NITROANILINE		1500	U		1600	U		1500	U		1500	U	
2-NITROPHENOL		380	U		400	U		380	U		380	U	
3,3'-DICHLOROBENZIDINE		380	U		400	U		380	U		380	U	
3-NITROANILINE		1500	U		1600	U		1500	U		1500	U	
4,6-DINITRO-2-METHYLPHENOL		1500	U		1600	U		1500	U		1500	U	
4-BROMOPHENYL PHENYL ETHER		380	U		400	U		380	U		380	U	
4-CHLORO-3-METHYLPHENOL		380	U		400	U		380	U		380	U	
4-CHLOROANILINE		380	U		400	U		380	U		380	U	
4-CHLOROPHENYL PHENYL ETHER		380	U		400	U		380	U		380	U	
4-METHYLPHENOL		380	U		400	U		380	U		380	U	
4-NITROANILINE		1500	U		1600	U		1500	U		1500	U	
4-NITROPHENOL		1500	U		1600	U		1500	U		1500	U	
ACENAPHTHENE		380	U		400	U		380	U		380	U	
ACENAPHTHYLENE		380	U		400	U		380	U		380	U	
ACETOPHENONE		380	U		400	U		380	U		380	U	
ANTHRACENE		380	U		400	U		380	U		79	J	P
ATRAZINE		380	U		400	U		380	U		380	U	
BENZALDEHYDE		380	U		400	U		380	U		380	U	
BENZO(A)ANTHRACENE		380	U		400	U		380	U		300	J	P
BENZO(A)PYRENE		75	U		80	U		77	U		260		
BENZO(B)FLUORANTHENE		380	U		400	U		380	U		240	J	P
BENZO(G,H,I)PERYLENE		380	U		400	U		380	U		210	J	P

PROJ_NO: 00870	NSAMPLE	CRP-SB06-1214			CRP-SB06-2224			CRP-SB07-0406			CRP-SB07-0810		
SDG: CARPT004	LAB_ID	0905235-05			0905238-01			0905229-04			0905229-06		
FRACTION: OS	SAMP_DATE	5/27/2009			5/28/2009			5/26/2009			5/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.8			88.5			94.9			90.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		380	U		380	U		350	U		370	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		750	U		750	U		700	U		730	U	
2,4,5-TRICHLOROPHENOL		380	U		380	U		350	U		370	U	
2,4,6-TRICHLOROPHENOL		380	U		380	U		350	U		370	U	
2,4-DICHLOROPHENOL		380	U		380	U		350	U		370	U	
2,4-DIMETHYLPHENOL		1500	U		1500	U		1400	U		1500	U	
2,4-DINITROPHENOL		3800	U		3800	U		3500	U		3700	U	
2,4-DINITROTOLUENE		380	U		380	U		350	U		370	U	
2,6-DINITROTOLUENE		380	U		380	U		350	U		370	U	
2-CHLORONAPHTHALENE		380	U		380	U		350	U		370	U	
2-CHLOROPHENOL		380	U		380	U		350	U		370	U	
2-METHYLNAPHTHALENE		380	U		380	U		350	U		370	U	
2-METHYLPHENOL		380	U		380	U		350	U		370	U	
2-NITROANILINE		1500	U		1500	U		1400	U		1500	U	
2-NITROPHENOL		380	U		380	U		350	U		370	U	
3,3'-DICHLOROBENZIDINE		380	U		380	U		350	U		370	U	
3-NITROANILINE		1500	U		1500	U		1400	U		1500	U	
4,6-DINITRO-2-METHYLPHENOL		1500	U		1500	U		1400	U		1500	U	
4-BROMOPHENYL PHENYL ETHER		380	U		380	U		350	U		370	U	
4-CHLORO-3-METHYLPHENOL		380	U		380	U		350	U		370	U	
4-CHLOROANILINE		380	U		380	U		350	U		370	U	
4-CHLOROPHENYL PHENYL ETHER		380	U		380	U		350	U		370	U	
4-METHYLPHENOL		380	U		380	U		350	U		370	U	
4-NITROANILINE		1500	U		1500	U		1400	U		1500	U	
4-NITROPHENOL		1500	U		1500	U		1400	U		1500	U	
ACENAPHTHENE		380	U		380	U		350	U		370	U	
ACENAPHTHYLENE		380	U		380	U		350	U		370	U	
ACETOPHENONE		380	U		380	U		350	U		370	U	
ANTHRACENE		380	U		380	U		350	U		370	U	
ATRAZINE		380	U		380	U		350	U		370	U	
BENZALDEHYDE		380	U		380	U		350	U		370	U	
BENZO(A)ANTHRACENE		380	U		380	U		350	U		370	U	
BENZO(A)PYRENE		75	U		75	U		70	U		73	U	
BENZO(B)FLUORANTHENE		380	U		380	U		350	U		370	U	
BENZO(G,H,I)PERYLENE		380	U		380	U		350	U		370	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB07-1416			CRP-SB08-0810			CRP-SB08-1214			CRP-SB08-1416		
SDG: CARPT004	LAB_ID	0905229-05			0905229-01			0905229-03			0905229-02		
FRACTION: OS	SAMP_DATE	5/26/2009			5/26/2009			5/26/2009			5/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.3			90.0			96.0			87.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		360	U		370	U		350	U		380	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		730	U		740	U		690	U		760	U	
2,4,5-TRICHLOROPHENOL		360	U		370	U		350	U		380	U	
2,4,6-TRICHLOROPHENOL		360	U		370	U		350	U		380	U	
2,4-DICHLOROPHENOL		360	U		370	U		350	U		380	U	
2,4-DIMETHYLPHENOL		1500	U		1500	U		1400	U		1500	U	
2,4-DINITROPHENOL		3600	U		3700	U		3500	U		3800	U	
2,4-DINITROTOLUENE		360	U		370	U		350	U		380	U	
2,6-DINITROTOLUENE		360	U		370	U		350	U		380	U	
2-CHLORONAPHTHALENE		360	U		370	U		350	U		380	U	
2-CHLOROPHENOL		360	U		370	U		350	U		380	U	
2-METHYLNAPHTHALENE		360	U		370	U		350	U		380	U	
2-METHYLPHENOL		360	U		370	U		350	U		380	U	
2-NITROANILINE		1500	U		1500	U		1400	U		1500	U	
2-NITROPHENOL		360	U		370	U		350	U		380	U	
3,3'-DICHLOROBENZIDINE		360	U		370	U		350	U		380	U	
3-NITROANILINE		1500	U		1500	U		1400	U		1500	U	
4,6-DINITRO-2-METHYLPHENOL		1500	U		1500	U		1400	U		1500	U	
4-BROMOPHENYL PHENYL ETHER		360	U		370	U		350	U		380	U	
4-CHLORO-3-METHYLPHENOL		360	U		370	U		350	U		380	U	
4-CHLOROANILINE		360	U		370	U		350	U		380	U	
4-CHLOROPHENYL PHENYL ETHER		360	U		370	U		350	U		380	U	
4-METHYLPHENOL		360	U		370	U		350	U		380	U	
4-NITROANILINE		1500	U		1500	U		1400	U		1500	U	
4-NITROPHENOL		1500	U		1500	U		1400	U		1500	U	
ACENAPHTHENE		360	U		370	U		350	U		380	U	
ACENAPHTHYLENE		360	U		370	U		350	U		380	U	
ACETOPHENONE		360	U		370	U		350	U		380	U	
ANTHRACENE		360	U		370	U		350	U		380	U	
ATRAZINE		360	U		370	U		350	U		380	U	
BENZALDEHYDE		360	U		370	U		350	U		380	U	
BENZO(A)ANTHRACENE		360	U		370	U		350	U		380	U	
BENZO(A)PYRENE		73	U		74	U		69	U		76	U	
BENZO(B)FLUORANTHENE		360	U		370	U		350	U		380	U	
BENZO(G,H,I)PERYLENE		360	U		370	U		350	U		380	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-DUP05			CRP-SB-DUP06		
SDG: CARPT004	LAB_ID	0905229-07			0905238-06		
FRACTION: OS	SAMP_DATE	5/26/2009			5/28/2009		
MEDIA: SOIL	QC_TYPE	FD			FD		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	90.8			86.0		
	DUP_OF	CRP-SB08-0810			CRP-SB06-2224		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		370	U		390	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		730	U		780	U	
2,4,5-TRICHLOROPHENOL		370	U		390	U	
2,4,6-TRICHLOROPHENOL		370	U		390	U	
2,4-DICHLOROPHENOL		370	U		390	U	
2,4-DIMETHYLPHENOL		1500	U		1600	U	
2,4-DINITROPHENOL		3700	U		3900	U	
2,4-DINITROTOLUENE		370	U		390	U	
2,6-DINITROTOLUENE		370	U		390	U	
2-CHLORONAPHTHALENE		370	U		390	U	
2-CHLOROPHENOL		370	U		390	U	
2-METHYLNAPHTHALENE		370	U		390	U	
2-METHYLPHENOL		370	U		390	U	
2-NITROANILINE		1500	U		1600	U	
2-NITROPHENOL		370	U		390	U	
3,3'-DICHLOROBENZIDINE		370	U		390	U	
3-NITROANILINE		1500	U		1600	U	
4,6-DINITRO-2-METHYLPHENOL		1500	U		1600	U	
4-BROMOPHENYL PHENYL ETHER		370	U		390	U	
4-CHLORO-3-METHYLPHENOL		370	U		390	U	
4-CHLOROANILINE		370	U		390	U	
4-CHLOROPHENYL PHENYL ETHER		370	U		390	U	
4-METHYLPHENOL		370	U		390	U	
4-NITROANILINE		1500	U		1600	U	
4-NITROPHENOL		1500	U		1600	U	
ACENAPHTHENE		370	U		390	U	
ACENAPHTHYLENE		370	U		390	U	
ACETOPHENONE		370	U		390	U	
ANTHRACENE		370	U		390	U	
ATRAZINE		370	U		390	U	
BENZALDEHYDE		370	U		390	U	
BENZO(A)ANTHRACENE		370	U		390	U	
BENZO(A)PYRENE		73	U		78	U	
BENZO(B)FLUORANTHENE		370	U		390	U	
BENZO(G,H,I)PERYLENE		370	U		390	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB04-0002			CRP-SB04-0406			CRP-SB04-0810			CRP-SB04-3234		
SDG: CARPT004	LAB_ID	0905238-02			0905238-03			0905238-04			0905238-05		
FRACTION: OS	SAMP_DATE	5/28/2009			5/28/2009			5/28/2009			5/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			83.9			88.8			83.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		1800	U		400	U		380	U		400	U	
BIS(2-CHLOROETHOXY)METHANE		1800	U		400	U		380	U		400	U	
BIS(2-CHLOROETHYL)ETHER		1800	U		400	U		380	U		400	U	
BIS(2-ETHYLHEXYL)PHTHALATE		1800	U		400	U		380	U		400	U	
BUTYL BENZYL PHTHALATE		1800	U		400	U		380	U		400	U	
CAPROLACTAM		1800	U		400	U		78	J	P	400	U	
CARBAZOLE		3700	U		790	U		750	U		800	U	
CHRYSENE		980			79	U		75	U		80	U	
DIBENZO(A,H)ANTHRACENE		370	U		79	U		75	U		80	U	
DIBENZOFURAN		1800	U		400	U		380	U		400	U	
DIETHYL PHTHALATE		1800	U		400	U		380	U		400	U	
DIMETHYL PHTHALATE		1800	U		400	U		380	U		400	U	
DI-N-BUTYL PHTHALATE		1800	U		400	U		380	U		400	U	
DI-N-OCTYL PHTHALATE		1800	U		400	U		380	U		400	U	
FLUORANTHENE		2000			400	U		380	U		400	U	
FLUORENE		1800	U		400	U		380	U		400	U	
HEXACHLOROBENZENE		370	U		79	U		75	U		80	U	
HEXACHLOROBUTADIENE		1800	U		400	U		380	U		400	U	
HEXACHLOROCYCLOPENTADIENE		1800	U		400	U		380	U		400	U	
HEXACHLOROETHANE		3700	U		790	U		750	U		800	U	
INDENO(1,2,3-CD)PYRENE		1200	J	P	400	U		380	U		400	U	
ISOPHORONE		1800	U		400	U		380	U		400	U	
NAPHTHALENE		1800	U		400	U		380	U		400	U	
NITROBENZENE		1800	U		400	U		380	U		400	U	
N-NITROSO-DI-N-PROPYLAMINE		1800	U		400	U		380	U		400	U	
N-NITROSODIPHENYLAMINE		1800	U		400	U		380	U		400	U	
PENTACHLOROPHENOL		7400	U		1600	U		1500	U		1600	U	
PHENANTHRENE		2100			48	J	P	380	U		400	U	
PHENOL		1800	U		400	U		380	U		400	U	
PYRENE		2500			66	J	P	380	U		400	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB05-0204			CRP-SB05-0810			CRP-SB05-3032			CRP-SB06-0810		
SDG: CARPT004	LAB_ID	0905235-01			0905235-02			0905235-03			0905235-04		
FRACTION: OS	SAMP_DATE	5/27/2009			5/27/2009			5/27/2009			5/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.9			82.8			86.6			88.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		380	U		400	U		380	U		380	U	
BIS(2-CHLOROETHOXY)METHANE		380	U		400	U		380	U		380	U	
BIS(2-CHLOROETHYL)ETHER		380	U		400	U		380	U		380	U	
BIS(2-ETHYLHEXYL)PHTHALATE		380	U		150	J	P	380	U		380	U	
BUTYL BENZYL PHTHALATE		380	U		400	U		380	U		380	U	
CAPROLACTAM		380	U		400	U		120	J	P	380	U	
CARBAZOLE		750	U		800	U		770	U		760	U	
CHRYSENE		75	U		80	U		77	U		300		
DIBENZO(A,H)ANTHRACENE		75	U		80	U		77	U		76	U	
DIBENZOFURAN		380	U		400	U		380	U		380	U	
DIETHYL PHTHALATE		380	U		400	U		380	U		380	U	
DIMETHYL PHTHALATE		380	U		400	U		380	U		380	U	
DI-N-BUTYL PHTHALATE		380	U		400	U		380	U		380	U	
DI-N-OCTYL PHTHALATE		380	U		400	U		380	U		380	U	
FLUORANTHENE		380	U		400	U		380	U		560		
FLUORENE		380	U		400	U		380	U		380	U	
HEXACHLOROBENZENE		75	U		80	U		77	U		76	U	
HEXACHLOROBUTADIENE		380	U		400	U		380	U		380	U	
HEXACHLOROCYCLOPENTADIENE		380	U		400	U		380	U		380	U	
HEXACHLOROETHANE		750	U		800	U		770	U		760	U	
INDENO(1,2,3-CD)PYRENE		380	U		400	U		380	U		380	U	
ISOPHORONE		380	U		400	U		380	U		380	U	
NAPHTHALENE		380	U		400	U		380	U		380	U	
NITROBENZENE		380	U		400	U		380	U		380	U	
N-NITROSO-DI-N-PROPYLAMINE		380	U		400	U		380	U		380	U	
N-NITROSODIPHENYLAMINE		380	U		400	U		380	U		380	U	
PENTACHLOROPHENOL		1500	U		1600	U		1500	U		1500	U	
PHENANTHRENE		380	U		400	U		380	U		560		
PHENOL		380	U		400	U		380	U		380	U	
PYRENE		380	U		400	U		380	U		820		

PROJ_NO: 00870	NSAMPLE	CRP-SB06-1214			CRP-SB06-2224			CRP-SB07-0406			CRP-SB07-0810		
SDG: CARPT004	LAB_ID	0905235-05			0905238-01			0905229-04			0905229-06		
FRACTION: OS	SAMP_DATE	5/27/2009			5/28/2009			5/26/2009			5/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.8			88.5			94.9			90.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		380	U		380	U		350	U		370	U	
BIS(2-CHLOROETHOXY)METHANE		380	U		380	U		350	U		370	U	
BIS(2-CHLOROETHYL)ETHER		380	U		380	U		350	U		370	U	
BIS(2-ETHYLHEXYL)PHTHALATE		380	U		380	U		350	U		370	U	
BUTYL BENZYL PHTHALATE		380	U		380	U		350	U		370	U	
CAPROLACTAM		110	J	P	94	J	P	350	U		130	J	EP
CARBAZOLE		750	U		750	U		700	U		730	U	
CHRYSENE		75	U		75	U		70	U		73	U	
DIBENZO(A,H)ANTHRACENE		75	U		75	U		70	U		73	U	
DIBENZOFURAN		380	U		380	U		350	U		370	U	
DIETHYL PHTHALATE		380	U		380	U		350	U		370	U	
DIMETHYL PHTHALATE		380	U		380	U		350	U		370	U	
DI-N-BUTYL PHTHALATE		380	U		380	U		350	U		370	U	
DI-N-OCTYL PHTHALATE		380	U		380	U		350	UJ	C	370	UJ	C
FLUORANTHENE		380	U		380	U		350	U		370	U	
FLUORENE		380	U		380	U		350	U		370	U	
HEXACHLOROBENZENE		75	U		75	U		70	U		73	U	
HEXACHLOROBUTADIENE		380	U		380	U		350	U		370	U	
HEXACHLOROCYCLOPENTADIENE		380	U		380	U		350	U		370	U	
HEXACHLOROETHANE		750	U		750	U		700	U		730	U	
INDENO(1,2,3-CD)PYRENE		380	U		380	U		350	U		370	U	
ISOPHORONE		380	U		380	U		350	U		370	U	
NAPHTHALENE		380	U		380	U		350	U		370	U	
NITROBENZENE		380	U		380	U		350	U		370	U	
N-NITROSO-DI-N-PROPYLAMINE		380	U		380	U		350	U		370	U	
N-NITROSODIPHENYLAMINE		380	U		380	U		350	U		370	U	
PENTACHLOROPHENOL		1500	U		1500	U		1400	U		1500	U	
PHENANTHRENE		380	U		380	U		350	U		370	U	
PHENOL		380	U		380	U		350	U		370	U	
PYRENE		380	U		380	U		350	U		370	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB07-1416			CRP-SB08-0810			CRP-SB08-1214			CRP-SB08-1416		
SDG: CARPT004	LAB_ID	0905229-05			0905229-01			0905229-03			0905229-02		
FRACTION: OS	SAMP_DATE	5/26/2009			5/26/2009			5/26/2009			5/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.3			90.0			96.0			87.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		360	U		370	U		350	U		380	U	
BIS(2-CHLOROETHOXY)METHANE		360	U		370	U		350	U		380	U	
BIS(2-CHLOROETHYL)ETHER		360	U		370	U		350	U		380	U	
BIS(2-ETHYLHEXYL)PHTHALATE		360	U		370	U		350	U		150	J	P
BUTYL BENZYL PHTHALATE		360	U		370	U		350	U		380	U	
CAPROLACTAM		78	J	EP	370	U		350	U		100	J	EP
CARBAZOLE		730	U		740	U		690	U		760	U	
CHRYSENE		73	U		74	U		69	U		76	U	
DIBENZO(A,H)ANTHRACENE		73	U		74	U		69	U		76	U	
DIBENZOFURAN		360	U		370	U		350	U		380	U	
DIETHYL PHTHALATE		360	U		370	U		350	U		380	U	
DIMETHYL PHTHALATE		360	U		370	U		350	U		380	U	
DI-N-BUTYL PHTHALATE		360	U		370	U		350	U		380	U	
DI-N-OCTYL PHTHALATE		360	UJ	C	370	UJ	C	350	UJ	C	380	UJ	C
FLUORANTHENE		360	U		370	U		350	U		380	U	
FLUORENE		360	U		370	U		350	U		380	U	
HEXACHLOROBENZENE		73	U		74	U		69	U		76	U	
HEXACHLOROBUTADIENE		360	U		370	U		350	U		380	U	
HEXACHLOROCYCLOPENTADIENE		360	U		370	U		350	U		380	U	
HEXACHLOROETHANE		730	U		740	U		690	U		760	U	
INDENO(1,2,3-CD)PYRENE		360	U		370	U		350	U		380	U	
ISOPHORONE		360	U		370	U		350	U		380	U	
NAPHTHALENE		360	U		370	U		350	U		380	U	
NITROBENZENE		360	U		370	U		350	U		380	U	
N-NITROSO-DI-N-PROPYLAMINE		360	U		370	U		350	U		380	U	
N-NITROSODIPHENYLAMINE		360	U		370	U		350	U		380	U	
PENTACHLOROPHENOL		1500	U		1500	U		1400	U		1500	U	
PHENANTHRENE		360	U		370	U		350	U		380	U	
PHENOL		360	U		370	U		350	U		380	U	
PYRENE		360	U		370	U		350	U		380	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-DUP05			CRP-SB-DUP06		
SDG: CARPT004	LAB_ID	0905229-07			0905238-06		
FRACTION: OS	SAMP_DATE	5/26/2009			5/28/2009		
MEDIA: SOIL	QC_TYPE	FD			FD		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	90.8			86.0		
	DUP_OF	CRP-SB08-0810			CRP-SB06-2224		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		370	U		390	U	
BIS(2-CHLOROETHOXY)METHANE		370	U		390	U	
BIS(2-CHLOROETHYL)ETHER		370	U		390	U	
BIS(2-ETHYLHEXYL)PHTHALATE		370	U		390	U	
BUTYL BENZYL PHTHALATE		370	U		390	U	
CAPROLACTAM		370	U		390	U	
CARBAZOLE		730	U		780	U	
CHRYSENE		73	U		78	U	
DIBENZO(A,H)ANTHRACENE		73	U		78	U	
DIBENZOFURAN		370	U		390	U	
DIETHYL PHTHALATE		370	U		390	U	
DIMETHYL PHTHALATE		370	U		390	U	
DI-N-BUTYL PHTHALATE		370	U		390	U	
DI-N-OCTYL PHTHALATE		370	U		390	U	
FLUORANTHENE		370	U		390	U	
FLUORENE		370	U		390	U	
HEXACHLOROBENZENE		73	U		78	U	
HEXACHLOROBUTADIENE		370	U		390	U	
HEXACHLOROCYCLOPENTADIENE		370	U		390	U	
HEXACHLOROETHANE		730	U		780	U	
INDENO(1,2,3-CD)PYRENE		370	U		390	U	
ISOPHORONE		370	U		390	U	
NAPHTHALENE		370	U		390	U	
NITROBENZENE		370	U		390	U	
N-NITROSO-DI-N-PROPYLAMINE		370	U		390	U	
N-NITROSODIPHENYLAMINE		370	U		390	U	
PENTACHLOROPHENOL		1500	U		1600	U	
PHENANTHRENE		370	U		390	U	
PHENOL		370	U		390	U	
PYRENE		370	U		390	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB03-052809
SDG: CARPT004	LAB_ID	0905238-08
FRACTION: OS	SAMP_DATE	5/28/2009
MEDIA: WATER	QC_TYPE	RB
	UNITS	UG/L
	PCT_SOLIDS	
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
1,1-BIPHENYL	4.6	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	9.2	U	
2,4,5-TRICHLOROPHENOL	4.6	U	
2,4,6-TRICHLOROPHENOL	4.6	U	
2,4-DICHLOROPHENOL	4.6	U	
2,4-DIMETHYLPHENOL	18	U	
2,4-DINITROPHENOL	46	U	
2,4-DINITROTOLUENE	4.6	U	
2,6-DINITROTOLUENE	4.6	U	
2-CHLORONAPHTHALENE	4.6	U	
2-CHLOROPHENOL	4.6	U	
2-METHYLNAPHTHALENE	4.6	U	
2-METHYLPHENOL	4.6	U	
2-NITROANILINE	18	U	
2-NITROPHENOL	4.6	U	
3,3'-DICHLOROBENZIDINE	4.6	U	
3-NITROANILINE	18	U	
4,6-DINITRO-2-METHYLPHENOL	18	U	
4-BROMOPHENYL PHENYL ETHER	4.6	U	
4-CHLORO-3-METHYLPHENOL	4.6	U	
4-CHLOROANILINE	4.6	U	
4-CHLOROPHENYL PHENYL ETHER	4.6	U	
4-METHYLPHENOL	4.6	U	
4-NITROANILINE	18	U	
4-NITROPHENOL	18	U	
ACENAPHTHENE	4.6	U	
ACENAPHTHYLENE	4.6	U	
ACETOPHENONE	4.6	U	
ANTHRACENE	4.6	U	
ATRAZINE	4.6	U	
BENZALDEHYDE	4.6	U	
BENZO(A)ANTHRACENE	4.6	U	
BENZO(A)PYRENE	0.92	U	
BENZO(B)FLUORANTHENE	4.6	U	
BENZO(G,H,I)PERYLENE	4.6	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB03-052809		
SDG: CARPT004	LAB_ID	0905238-08		
FRACTION: OS	SAMP_DATE	5/28/2009		
MEDIA: WATER	QC_TYPE	RB		
	UNITS	UG/L		
	PCT_SOLIDS			
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		4.6	U	
BIS(2-CHLOROETHOXY)METHANE		4.6	U	
BIS(2-CHLOROETHYL)ETHER		4.6	U	
BIS(2-ETHYLHEXYL)PHTHALATE		4.6	U	A
BUTYL BENZYL PHTHALATE		4.6	U	
CAPROLACTAM		4.6	UJ	AE
CARBAZOLE		9.2	U	
CHRYSENE		2.8	U	
DIBENZO(A,H)ANTHRACENE		4.6	U	
DIBENZOFURAN		4.6	U	
DIETHYL PHTHALATE		4.6	U	
DIMETHYL PHTHALATE		4.6	U	
DI-N-BUTYL PHTHALATE		4.6	U	
DI-N-OCTYL PHTHALATE		4.6	U	
FLUORANTHENE		4.6	U	
FLUORENE		4.6	U	
HEXACHLOROBENZENE		0.92	U	
HEXACHLOROBUTADIENE		4.6	U	
HEXACHLOROCYCLOPENTADIENE		4.6	U	
HEXACHLOROETHANE		9.2	U	
INDENO(1,2,3-CD)PYRENE		4.6	U	
ISOPHORONE		4.6	U	
NAPHTHALENE		4.6	U	
NITROBENZENE		4.6	U	
N-NITROSO-DI-N-PROPYLAMINE		4.6	U	
N-NITROSODIPHENYLAMINE		4.6	U	
PENTACHLOROPHENOL		18	U	
PHENANTHRENE		4.6	U	
PHENOL		4.6	U	
PYRENE		4.6	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB04-0002			CRP-SB04-0406			CRP-SB04-0810			CRP-SB04-3234		
SDG: CARPT004	LAB_ID	0905238-02			0905238-03			0905238-04			0905238-05		
FRACTION: PEST/PCB	SAMP_DATE	5/28/2009			5/28/2009			5/28/2009			5/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			83.9			88.8			83.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.74	U		0.79	U		0.75	U		0.8	U	
4,4'-DDE		0.74	U		0.79	U		0.3	J	P	0.8	U	
4,4'-DDT		14	UJ	U	0.79	U		0.55	J	PU	0.8	U	
ALDRIN		0.37	U		0.4	U		0.38	U		0.4	U	
ALPHA-BHC		0.37	U		0.4	U		1.3			1.8	UJ	U
ALPHA-CHLORDANE		0.37	U		0.4	U		0.38	U		0.4	U	
AROCLOR-1016		18	UJ	C	20	UJ	C	19	UJ	C	20	UJ	C
AROCLOR-1221		18	U		20	U		19	U		20	U	
AROCLOR-1232		18	U		20	U		19	U		20	U	
AROCLOR-1242		18	U		20	U		19	U		20	U	
AROCLOR-1248		18	U		20	U		19	U		20	U	
AROCLOR-1254		18	U		20	U		19	U		20	U	
AROCLOR-1260		18	U		20	U		19	U		20	U	
BETA-BHC		0.37	U		0.4	U		0.38	U		0.4	U	
DELTA-BHC		0.37	U		0.4	U		0.57	J	U	0.4	U	
DIELDRIN		0.74	U		0.79	U		0.75	U		0.8	U	
ENDOSULFAN I		0.37	U		0.4	U		0.38	U		0.4	U	
ENDOSULFAN II		5			0.79	U		0.75	U		0.8	U	
ENDOSULFAN SULFATE		0.74	U		0.79	U		0.75	U		0.8	U	
ENDRIN		4.2	UJ	U	0.79	U		0.75	U		0.8	U	
ENDRIN ALDEHYDE		1.7	J	U	0.79	U		0.75	U		0.8	U	
ENDRIN KETONE		0.74	U		0.79	U		0.75	U		0.8	U	
GAMMA-BHC (LINDANE)		12			0.4	U		0.65			0.4	U	
GAMMA-CHLORDANE		40	UJ	AU	0.48	U	A	0.68	UJ	AU	0.77	UJ	AU
HEPTACHLOR		0.37	U		0.4	U		0.44			0.4	U	
HEPTACHLOR EPOXIDE		0.37	U		0.4	U		0.38	U		0.4	U	
METHOXYCHLOR		0.37	U		0.4	U		0.38	U		0.4	U	
TOXAPHENE		37	U		40	U		38	U		40	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB05-0204			CRP-SB05-0810			CRP-SB05-3032			CRP-SB06-0810		
SDG: CARPT004	LAB_ID	0905235-01			0905235-02			0905235-03			0905235-04		
FRACTION: PEST/PCB	SAMP_DATE	5/27/2009			5/27/2009			5/27/2009			5/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.9			82.8			86.6			88.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.75	U		0.8	U		0.77	U		0.76	U	
4,4'-DDE		0.75	U		0.8	U		0.77	U		0.76	U	
4,4'-DDT		0.75	U		0.8	U		0.77	U		0.76	U	
ALDRIN		0.38	U		0.4	U		0.38	U		0.38	U	
ALPHA-BHC		0.38	U		0.4	U		0.38	U		0.38	U	
ALPHA-CHLORDANE		0.38	U		0.4	U		0.38	U		0.38	U	
AROCLOR-1016		19	UJ	C	20	UJ	C	19	UJ	C	19	UJ	C
AROCLOR-1221		19	U		20	U		19	U		19	U	
AROCLOR-1232		19	U		20	U		19	U		19	U	
AROCLOR-1242		19	U		20	U		19	U		19	U	
AROCLOR-1248		19	U		20	U		19	U		19	U	
AROCLOR-1254		19	U		20	U		19	U		19	U	
AROCLOR-1260		6.8	J	P	20	U		19	U		19	U	
BETA-BHC		0.38	U		0.4	U		0.38	U		0.38	U	
DELTA-BHC		0.38	U		0.4	U		0.38	U		0.38	U	
DIELDRIN		0.75	U		0.8	U		0.77	U		0.76	U	
ENDOSULFAN I		0.38	U		0.4	U		0.38	U		0.38	U	
ENDOSULFAN II		0.75	U		0.8	U		0.77	U		0.76	U	
ENDOSULFAN SULFATE		0.61	J	PU	0.8	U		0.77	U		0.76	U	
ENDRIN		0.75	U		0.8	U		0.77	U		0.76	U	
ENDRIN ALDEHYDE		0.75	U		0.8	U		0.77	U		0.76	U	
ENDRIN KETONE		0.75	U		0.8	U		0.77	U		0.76	U	
GAMMA-BHC (LINDANE)		0.38	U		0.4	U		0.38	U		0.54		
GAMMA-CHLORDANE		0.39	U	A	1.3	U	A	0.85	U	A	1.8		
HEPTACHLOR		0.38	U		0.4	U		0.38	U		0.38	U	
HEPTACHLOR EPOXIDE		0.38	U		0.4	U		0.38	U		3	J	U
METHOXYCHLOR		0.38	U		0.4	U		0.38	U		0.38	U	
TOXAPHENE		38	U		40	U		38	U		38	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB06-1214			CRP-SB06-2224			CRP-SB07-0406			CRP-SB07-0810		
SDG: CARPT004	LAB_ID	0905235-05			0905238-01			0905229-04			0905229-06		
FRACTION: PEST/PCB	SAMP_DATE	5/27/2009			5/28/2009			5/26/2009			5/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.8			88.5			94.9			90.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.75	U		0.75	U		0.7	U		0.73	U	
4,4'-DDE		0.75	U		0.75	U		0.31	J	P	0.73	U	
4,4'-DDT		0.75	U		0.32	J	P	0.99			0.73	U	
ALDRIN		0.38	U		0.38	U		0.35	U		0.37	U	
ALPHA-BHC		0.38	U		0.46	J	U	0.35	U		0.37	U	
ALPHA-CHLORDANE		0.38	U		0.38	U		0.35	U		0.37	U	
AROCLOR-1016		19	UJ	C	19	UJ	C	18	UJ	C	18	UJ	C
AROCLOR-1221		19	U		19	U		18	U		18	U	
AROCLOR-1232		19	U		19	U		18	U		18	U	
AROCLOR-1242		19	U		19	U		18	U		18	U	
AROCLOR-1248		19	U		19	U		18	U		18	U	
AROCLOR-1254		19	U		19	U		18	U		18	U	
AROCLOR-1260		19	U		19	U		18	U		18	U	
BETA-BHC		0.38	U		0.38	U		0.35	U		0.37	U	
DELTA-BHC		0.38	U		0.38	U		0.35	U		0.37	U	
DIELDRIN		0.75	U		0.75	U		0.7	U		0.73	U	
ENDOSULFAN I		0.38	U		0.38	U		0.35	U		0.37	U	
ENDOSULFAN II		0.75	U		0.75	U		0.7	U		0.73	U	
ENDOSULFAN SULFATE		0.75	U		0.75	U		0.78	J	U	0.73	U	
ENDRIN		0.75	U		0.75	U		0.7	U		0.73	U	
ENDRIN ALDEHYDE		0.75	U		0.75	U		0.7	U		0.73	U	
ENDRIN KETONE		0.75	U		0.75	U		0.7	U		0.73	U	
GAMMA-BHC (LINDANE)		0.38	U		0.38	U		0.35	U		0.37	U	
GAMMA-CHLORDANE		0.49	UJ	AU	0.56	U	A	0.35	U		0.74	U	A
HEPTACHLOR		0.38	U		0.38	U		0.35	U		0.37	U	
HEPTACHLOR EPOXIDE		0.38	U		0.38	U		0.35	U		0.37	U	
METHOXYCHLOR		0.38	U		0.38	U		1.2	UJ	U	0.37	U	
TOXAPHENE		38	U		38	U		35	U		37	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB07-1416			CRP-SB08-0810			CRP-SB08-1214			CRP-SB08-1416		
SDG: CARPT004	LAB_ID	0905229-05			0905229-01			0905229-03			0905229-02		
FRACTION: PEST/PCB	SAMP_DATE	5/26/2009			5/26/2009			5/26/2009			5/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.3			90.0			96.0			87.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.73	U		0.74	U		0.69	U		0.76	U	
4,4'-DDE		0.73	U		0.29	J	P	0.69	U		0.76	U	
4,4'-DDT		0.73	U		0.54	J	PU	0.69	U		0.76	U	
ALDRIN		0.36	U		0.37	U		0.35	U		0.38	U	
ALPHA-BHC		0.36	U		0.37	U		0.35	U		0.38	U	
ALPHA-CHLORDANE		0.36	U		0.37	U		0.35	U		0.38	U	
AROCLOR-1016		18	UJ	C	18	UJ	C	17	UJ	C	19	UJ	C
AROCLOR-1221		18	U		18	U		17	U		19	U	
AROCLOR-1232		18	U		18	U		17	U		19	U	
AROCLOR-1242		18	U		18	U		17	U		19	U	
AROCLOR-1248		18	U		18	U		17	U		19	U	
AROCLOR-1254		18	U		18	U		17	U		19	U	
AROCLOR-1260		18	U		18	U		17	U		19	U	
BETA-BHC		0.36	U		0.37	U		0.35	U		0.38	U	
DELTA-BHC		0.23	J	PU	0.37	U		0.35	U		0.38	U	
DIELDRIN		0.73	U		0.74	U		0.69	U		0.76	U	
ENDOSULFAN I		0.36	U		0.37	U		0.35	U		0.38	U	
ENDOSULFAN II		0.73	U		0.74	U		0.69	U		0.76	U	
ENDOSULFAN SULFATE		0.73	U		0.74	U		0.69	U		0.76	U	
ENDRIN		0.73	U		0.74	U		0.69	U		0.76	U	
ENDRIN ALDEHYDE		0.73	U		0.74	U		0.69	U		0.76	U	
ENDRIN KETONE		0.73	U		0.74	U		0.69	U		0.76	U	
GAMMA-BHC (LINDANE)		0.36	U		0.37	U		0.35	U		0.38	U	
GAMMA-CHLORDANE		1.4	U	A	0.76	UJ	AG	0.35	U	A	0.76	U	A
HEPTACHLOR		0.36	U		0.37	U		0.35	U		0.38	U	
HEPTACHLOR EPOXIDE		0.36	U		0.37	U		0.35	U		0.38	U	
METHOXYCHLOR		0.36	U		0.37	U		0.35	U		0.38	U	
TOXAPHENE		36	U		37	U		35	U		38	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-DUP05			CRP-SB-DUP06		
SDG: CARPT004	LAB_ID	0905229-07			0905238-06		
FRACTION: PEST/PCB	SAMP_DATE	5/26/2009			5/28/2009		
MEDIA: SOIL	QC_TYPE	FD			FD		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	90.8			86.0		
	DUP_OF	CRP-SB08-0810			CRP-SB06-2224		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.73	U		0.78	U	
4,4'-DDE		0.73	U		0.78	U	
4,4'-DDT		0.73	U		0.78	U	
ALDRIN		0.37	U		0.39	U	
ALPHA-BHC		0.37	U		0.2	J	PU
ALPHA-CHLORDANE		0.37	U		0.39	U	
AROCLOR-1016		18	UJ	C	19	UJ	C
AROCLOR-1221		18	U		19	U	
AROCLOR-1232		18	U		19	U	
AROCLOR-1242		18	U		19	U	
AROCLOR-1248		18	U		19	U	
AROCLOR-1254		18	U		19	U	
AROCLOR-1260		18	U		19	U	
BETA-BHC		0.37	U		0.39	U	
DELTA-BHC		0.28	J	P	0.39	U	
DIELDRIN		0.73	U		0.78	U	
ENDOSULFAN I		0.37	U		0.39	U	
ENDOSULFAN II		0.73	U		0.78	U	
ENDOSULFAN SULFATE		0.73	U		0.78	U	
ENDRIN		0.73	U		0.78	U	
ENDRIN ALDEHYDE		0.73	U		0.78	U	
ENDRIN KETONE		0.73	U		0.78	U	
GAMMA-BHC (LINDANE)		0.37	U		0.39	U	
GAMMA-CHLORDANE		0.35	UJ	AG	0.71	U	A
HEPTACHLOR		0.37	U		0.39	U	
HEPTACHLOR EPOXIDE		0.37	U		0.39	U	
METHOXYCHLOR		0.37	U		0.39	U	
TOXAPHENE		37	U		39	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB03-052809		
SDG: CARPT004	LAB_ID	0905238-08		
FRACTION: PEST/PCB	SAMP_DATE	5/28/2009		
MEDIA: WATER	QC_TYPE	RB		
	UNITS	UG/L		
	PCT_SOLIDS			
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
4,4'-DDD		0.018	U	
4,4'-DDE		0.018	U	
4,4'-DDT		0.018	U	
ALDRIN		0.0092	U	
ALPHA-BHC		0.0092	U	
ALPHA-CHLORDANE		0.0092	U	
AROCLOR-1016		0.46	U	
AROCLOR-1221		0.46	U	
AROCLOR-1232		0.46	U	
AROCLOR-1242		0.46	U	
AROCLOR-1248		0.46	U	
AROCLOR-1254		0.46	U	
AROCLOR-1260		0.46	U	
BETA-BHC		0.0092	U	
DELTA-BHC		0.0092	U	
DIELDRIN		0.018	U	
ENDOSULFAN I		0.0092	U	
ENDOSULFAN II		0.018	U	
ENDOSULFAN SULFATE		0.018	U	
ENDRIN		0.018	U	
ENDRIN ALDEHYDE		0.018	U	
ENDRIN KETONE		0.018	U	
GAMMA-BHC (LINDANE)		0.0092	U	
GAMMA-CHLORDANE		0.0094	J	U
HEPTACHLOR		0.0071	J	PU
HEPTACHLOR EPOXIDE		0.0092	U	
METHOXYCHLOR		0.0092	U	
TOXAPHENE		0.92	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB04-0002			CRP-SB04-0406			CRP-SB04-0810			CRP-SB04-3234		
SDG: CARPT004	LAB_ID	0905238-02			0905238-03			0905238-04			0905238-05		
FRACTION: PET	SAMP_DATE	5/28/2009			5/28/2009			5/28/2009			5/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	90.0			83.9			88.8			83.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		170			110			14			13		
GASOLINE RANGE ORGANICS		2.3	U		3	U		2.3	U		2.5	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB05-0204			CRP-SB05-0810			CRP-SB05-3032			CRP-SB06-0810		
SDG: CARPT004	LAB_ID	0905235-01			0905235-02			0905235-03			0905235-04		
FRACTION: PET	SAMP_DATE	5/27/2009			5/27/2009			5/27/2009			5/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	88.9			82.8			86.6			88.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		49			10			8.7			18		
GASOLINE RANGE ORGANICS		2.6	U		2.8	U		2.4	U		2.5	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB06-1214			CRP-SB06-2224			CRP-SB07-0406			CRP-SB07-0810		
SDG: CARPT004	LAB_ID	0905235-05			0905238-01			0905229-04			0905229-06		
FRACTION: PET	SAMP_DATE	5/27/2009			5/28/2009			5/26/2009			5/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	88.8			88.5			94.9			90.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		8			9.6			19			9		
GASOLINE RANGE ORGANICS		2.4	U		2.6	U		2.2	U		2.4	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB07-1416			CRP-SB08-0810			CRP-SB08-1214			CRP-SB08-1416		
SDG: CARPT004	LAB_ID	0905229-05			0905229-01			0905229-03			0905229-02		
FRACTION: PET	SAMP_DATE	5/26/2009			5/26/2009			5/26/2009			5/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	91.3			90.0			96.0			87.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		11			14			13			9.5		
GASOLINE RANGE ORGANICS		2.4	U		2.8	U		2.6	U		2.4	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-DUP05			CRP-SB-DUP06		
SDG: CARPT004	LAB_ID	0905229-07			0905238-06		
FRACTION: PET	SAMP_DATE	5/26/2009			5/28/2009		
MEDIA: SOIL	QC_TYPE	FD			FD		
	UNITS	MG/KG			MG/KG		
	PCT_SOLIDS	90.8			86.0		
	DUP_OF	CRP-SB08-0810			CRP-SB06-2224		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		14			9.4		
GASOLINE RANGE ORGANICS		2.1	U		2.4	U	

PROJ_NO: 00870	NSAMPLE	CRP-SB-RB03-052809		
SDG: CARPT004	LAB_ID	0905238-08		
FRACTION: PET	SAMP_DATE	5/28/2009		
MEDIA: WATER	QC_TYPE	RB		
	UNITS	MG/L		
	PCT_SOLIDS			
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		0.13		

TETRA TECH

INTERNAL CORRESPONDENCE

C-NAVY-08-09-3276W

Date: August 13, 2009

c: File G00870-4.10 (w/enc.-original)
T. Campbell (scan, w/o enc.)

To: Steve Parker (scan, w/o enc.)

From: Jennifer Cardinal (no copy) JC (for)

Subject: Tier II Organic Data Validation, SDG CARPT005
Empirical Laboratories, LLC
CTO 406, MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island

VOC/SVOC/Pesticides/PCB/DRO/GRO:

9/Groundwaters/	CRP-MW01-0609	CRP-MW02-0609
	CRP-MW03-0609	CRP-MW04-0609
	CRP-MW05-0609	CRP-MW06-0609
	CRP-MW07-0609	CRP-MW08-0609
	CRP-MW-DUP01	
	(Field duplicate pair: CRP-MW08-0609/CRP-MW-DUP01)	
1/Rinsate Blank/	CRP-MW-RB01-060209	

VOC/GRO:

3/Trip Blanks/	CRP-TB13-060109	CRP-TB14-060309
	CRP-TB15-060309	

VOC:

1/Trip Blank/	CRP-TB12-060109

Tetra Tech NUS, Inc. (TtNUS) performed a Tier II data validation on the volatile organic compound (VOC), semivolatile organic compound (SVOC), pesticide, polychlorinated biphenyl (PCB), gasoline range organics (GRO), and diesel range organics (DRO) analytical data for the groundwater samples collected by TtNUS at MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island from June 1-4, 2009. Sample collection and analysis was performed according to the approved Work Plan and Quality Assurance Project Plan for MRP Site 1, Carr Point, Naval Station Newport, Portsmouth, Rhode Island, dated April 2009.

The VOC and SVOC analyses were performed according to USEPA SW-846 Methods 8260B and 8270C, respectively. The semivolatile compounds benzo(a)pyrene, hexachlorobenzene, and pentachlorophenol were analyzed by Method 8270C in the selective ion monitoring (SIM) mode in order to achieve lower quantitation limits. The pesticides and PCB analyses were performed according to USEPA SW-846 Methods 8081 and 8082, respectively. The GRO and DRO analyses were both performed according to USEPA SW-846 Method 8015B.

The VOC, SVOC, GRO, and DRO data validation was performed in accordance with the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996. The pesticides and PCB validation was performed in accordance with the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Organic Analyses, Part III, February 2004.

The sample results, validation qualifiers (VQ), and qualifier codes (QLCD) are presented in the enclosed data summary tables. A list of the qualifier codes, which provide the reasons for the validation qualifiers, is enclosed.

The data were evaluated based on the following parameters:

- Data Completeness
- * Preservation and Technical Holding Times
- * GC/MS Instrument Performance Check (Tuning)
- * Pesticide Degradation
- Initial and Continuing Calibrations
- Blanks
- * Surrogate Compounds
- * Internal Standards
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample/Laboratory Control Sample Duplicate
- * Field Duplicates
- Analyte Identification/Quantitation
- Reporting Limits

* All criteria were met for this parameter.

Data Completeness

Pesticides and PCBs

On July 6, 2009 the laboratory clarified that the Form 10s for the pesticide and PCB analyses report the relative percent difference (RPD) between the results in the dual column analysis and not the %D as indicated by the column header on the forms (see CARPT001).

Pesticides

The heptachlor epoxide result for sample CRP-MW04-0609 on the Form I did not match the concentration reported on the Form 10. On July 24, 2009 the laboratory resubmitted the Form I to report the correct concentration.

Initial and Continuing Calibrations

Volatiles

The following table summarizes the volatile compounds that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	%D	Action		Affected Samples
		(+)	NDs	
Acetone	63.1	J	UJ	CRP-TB12-060109, CRP-TB13-060109, CRP-TB14-060309, CRP-MW-RB01-060209, CRP-MW01-0609, CRP-MW02-0609, CRP-MW03-0609

Compound	%D	Action		Affected Samples
		(+)	NDs	
2-Butanone	41.2		UJ	CRP-TB12-060109, CRP-TB13-060109, CRP-TB14-060309, CRP-MW-RB01-060209, CRP-MW01-0609, CRP-MW02-0609, CRP-MW03-0609
trans-1,3-Dichloropropene	26.7, 26.7		UJ	CRP-TB12-060109, CRP-TB13-060109, CRP-TB14-060309, CRP-MW-RB01-060209, CRP-MW01-0609, CRP-MW02-0609, CRP-MW03-0609, CRP-TB15-060309, CRP-MW04-0609, CRP-MW05-0609, CRP-MW06-0609
2-Hexanone	41.7, 27.6		UJ	
4-Methyl-2-pentanone	28.3, 29.8		UJ	
Methyl acetate	31.5, 31.5		UJ	

Although the %D for acetone, 2-butanone, trans-1,3-dichloropropene, 2-hexanone, 4-methyl-2-pentanone, and methyl acetate exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for these compounds for the groundwater samples. The positive and non-detected acetone, 2-butanone, trans-1,3-dichloropropene, 2-hexanone, 4-methyl-2-pentanone, and methyl acetate results in the affected samples are usable as estimated values and estimated quantitation limits.

Semivolatiles

The following table summarizes the semivolatile compound that failed to meet the continuing calibration (CC) criterion of %D < 25:

Compound	%D	Action		Affected Samples
		(+)	NDs	
Atrazine	-35.4		UJ	CRP-MW02-0609, CRP-MW06-0609, CRP-MW-RB01-060209
Benzaldehyde	-28.6		UJ	
2,4-Dinitrophenol	-27.0		UJ	CRP-MW03-0609, CRP-MW08-0609, CRP-MW07-0609, CRP-MW05-0609, CRP-MW-DUP01
Di-n-octylphthalate	34.5		UJ	
Hexachlorocyclopentadiene	-26.7		UJ	

Although the %D for atrazine, benzaldehyde, 2,4-dinitrophenol, and di-n-octylphthalate exceeded the QC criterion, the project accuracy goals are not impacted since there are no regulatory limits established for these compounds for the groundwater samples. The non-detected atrazine, benzaldehyde, 2,4-dinitrophenol, and di-n-octylphthalate results in the affected samples are usable as estimated quantitation limits.

Although the %D for hexachlorocyclopentadiene exceeded the QC criterion, the project accuracy goals are not impacted since the affected sample results are much lower than the project action limit. The non-detected hexachlorocyclopentadiene results in the affected samples are usable as estimated quantitation limits.

Blanks

Volatiles

The following table summarizes the level of blank contamination detected in the laboratory and trip blanks associated with the listed samples:

Compound	Type of Blank	Maximum Concentration (µg/L)	Action Level (µg/L)	Affected Samples
Methylene chloride	Method	0.20	2.0	CRP-MW08-0609, CRP-MW-DUP01, CRP-MW-RB01-060209
1,2,4-Trichlorobenzene	Method	0.32	1.6	CRP-MW07-0609
1,4-Dichlorobenzene	Method	0.13	0.65	CRP-MW07-0609
Chloroform	Trip	0.16	0.80	CRP-MW01-0609, CRP-MW02-0609, CRP-MW08-0609, CRP-MW-DUP01

Blank actions were applied to elevate the reporting limits for methylene chloride, 1,2,4-trichlorobenzene, 1,4-dichlorobenzene, and chloroform in the affected samples due to laboratory and trip blank contamination. The 10x rule applies to calculate the action level for methylene chloride while the 5x rule applies for 1,2,4-trichlorobenzene, 1,4-dichlorobenzene, and chloroform. The positive results below the blank action level and below the quantitation limit are changed to non-detected values at the quantitation limit (QL).

Although methylene chloride, 1,2,4-trichlorobenzene, 1,4-dichlorobenzene, and chloroform contamination was found in the laboratory and trip blanks, the project sensitivity goals are not impacted since the non-detected values do not exceed the project action limits. The methylene chloride, 1,2,4-trichlorobenzene, 1,4-dichlorobenzene, and chloroform results in the affected samples are usable as non-detected values.

Semivolatiles/Semivolatiles-SIM

The following table summarizes the level of blank contamination detected in the laboratory blank associated with the listed samples:

Compound	Type of Blank	Maximum Concentration (µg/L)	Action Level (µg/L)	Affected Samples
Bis(2-ethylhexyl)phthalate	Method	2.0	20	CRP-MW01-0609, CRP-MW08-0609
Caprolactam	Method	1.2	6.0	All groundwater samples and CRP-MW-RB01-060209
Pentachlorophenol	Method	0.098	0.49	CRP-MW01-0609, CRP-MW02-0609, CRP-MW04-0609, CRP-MW06-0609, CRP-MW07-0609
Hexachlorobenzene	Method	0.042	0.21	CRP-MW03-0609

Blank actions were applied to elevate the reporting limits for bis(2-ethylhexyl)phthalate, caprolactam, pentachlorophenol, and hexachlorobenzene in the affected samples due to laboratory blank contamination. The 10x rule applies to calculate the action limit for bis(2-ethylhexyl)phthalate while the 5x rule applies for caprolactam, pentachlorophenol, and hexachlorobenzene. The positive results below the blank action levels and below the quantitation limits are changed to non-detected values at the quantitation limit (QL).

Bis(2-ethylhexyl)phthalate contamination was found in the laboratory blank; therefore, the project sensitivity goals may be impacted since the non-detected values exceed the project action limit. The bis(2-ethylhexyl)phthalate results in the affected sample are usable as non-detected values.

Although caprolactam contamination was found in the laboratory blank, the project sensitivity goals are not impacted since there are no regulatory limits established for caprolactam for the groundwater samples. The caprolactam results in the affected samples are usable as non-detected values.

Although pentachlorophenol and hexachlorobenzene contamination was found in the laboratory blank, the project sensitivity goals are not impacted since the non-detected values do not exceed the project action limits. The pentachlorophenol and hexachlorobenzene results in the affected samples are usable as non-detected values.

Matrix Spike/Matrix Spike Duplicate

Semivolatiles

The following table summarizes the semivolatile matrix spiking recoveries that did not meet QC limits in the matrix spike and matrix spike duplicate analysis and the qualifications applied to the affected sample:

CRP-MW07-0609					
Compound	MS %REC	MSD %REC	QC Limits	Action	
			%REC	(+)	ND
Caprolactam	14	14	20-110	J	

-Criterion met

Although the MS/MSD recovery criteria were not met for caprolactam, the accuracy project goals are not impacted since there are no regulatory limits established for caprolactam in the groundwater samples. The positive caprolactam result in sample CRP-MW07-0609 is usable as an estimated value which may be biased low.

Laboratory Control Sample/Laboratory Control Sample Duplicates

Semivolatiles

The following table summarizes the semivolatile compound that failed to meet the LCS recovery limits:

Compound	% Rec.	QC Limits	Action		Affected Samples
			(+)	NDs	
Caprolactam	15, 16, 12, 12, 14	20-110	J		All groundwater samples and CRP-MW-RB01-060209

Although the laboratory control sample recovery criteria were not met for caprolactam, the project accuracy goals are not impacted since there are no regulatory limits established for caprolactam for the

groundwater samples. The affected positive results in the affected samples are usable as estimated values.

Analyte Identification/Quantitation

Pesticides

The relative percent difference (RPD) between the results of analytical columns 1 and 2 exceeded the 40% RPD QC criterion for the compounds in the following samples:

Sample	Analyte	%RPD	Action (+)
CRP-MW01-0609	Gamma-chlordane	53.5	J
CRP-MW07-0609	4,4'-DDT	74.0	J
CRP-MW06-0609	Heptachlor epoxide	171.9	UJ* at 3.7
CRP-MW04-0609	Heptachlor epoxide	185.4	UJ* at 0.43

*Professional judgment was used to raise the result to the higher of the two results and qualify the result as estimated, non-detected (UJ).

Although the analyte quantitation relative percent difference exceeded the 40% RPD QC limit for gamma-chlordane in sample CRP-MW01-609 and 4,4'-DDT in sample CRP-MW07-0609; the project accuracy goals are not impacted since the affected gamma-chlordane result in both columns are well below the project action limit, and there are no regulatory limits established for 4,4'-DDT. The positive results for the affected compounds in the affected samples are usable as estimated values.

The analyte quantitation relative percent differences exceeded the 100% RPD QC limit for heptachlor epoxide in sample CRP-MW06-0609 and CRP-MW04-0609; therefore, the project sensitivity goals may be impacted. The results for the heptachlor epoxide in the affected samples are usable as estimated, non-detected values.

Reporting Limits

Results above the method detection limit (MDL) and below the quantitation limit (QL) are reported as estimated (J) due to uncertainty below the QL.

Volatiles

The laboratory quantitation limits did not achieve the project action limits for 1,2-dibromoethane and 1,2-dibromo-3-chloropropane. Data usability may be impacted.

Due to high analyte concentrations determined at screening, samples CRP-MW08-0609 and CRP-MW-DUP01 were analyzed exclusively at 20x dilutions. Project action limits for several compounds were not achievable for these diluted samples.

Blank actions were taken on acetone, 2-butanone, trans-1,3-dichloropropene, 2-hexanone, 4-methyl-2-pentanone, and methyl acetate in the select samples due to method and trip blank contamination. As described above in the Blanks section, the project sensitivity goals are not impacted.

Semivolatiles/Semivolatiles-SIM

The laboratory quantitation limits did not achieve the project action limit for bis(2-ethylhexyl)phthalate. Data usability may be impacted.

Blank actions were taken on bis(2-ethylhexyl)phthalate, caprolactam, pentachlorophenol, and hexachlorobenzene in the select samples due to method blank contamination. As described above in the Blanks section, the project sensitivity goals may be impacted for bis(2-ethylhexyl)phthalate in the affected samples. Data usability may be impacted.

Pesticides

The analyte quantitation relative percent differences exceeded the 100% RPD QC limit for heptachlor epoxide in select samples. As described in the Analyte Identification/Quantitation section, the project sensitivity goals may be impacted for these results. Data usability may be impacted.

Data Usability Assessment

The data usability assessment was performed to determine if the data met the project data quality objectives for acceptable accuracy, precision, sensitivity and completeness; and to determine and define the impact of the exceeded quality control indicators on the technical usability of the data. Please refer to the specific sections in the above validation report for further details.

Volatiles

The project goals with respect to accuracy were met for the volatiles data set. Acetone, 2-butanone, trans-1,3-dichloropropene, 2-hexanone, 4-methyl-2-pentanone, and methyl acetate were qualified as estimated in select samples due to instrument calibration variability. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to sensitivity were met for the volatiles data set with the following exceptions. The laboratory quantitation limits did not achieve the project action limits for 1,2-dibromoethane and 1,2-dibromo-3-chloropropane. In addition, samples CRP-MW08-0609 and CRP-MW-DUP01 were analyzed exclusively at 20x dilutions. Project action limits for several compounds were not achievable for these diluted samples. Data usability may be impacted.

The project goals with respect to precision and completeness were met for the volatiles data set. Data usability was not impacted with regards to precision and completeness.

Semivolatiles/Semivolatiles-SIM

The project goals with respect to accuracy were met for the semivolatiles/semivolatiles-SIM data set. Atrazine, benzaldehyde, 2,4-dinitrophenol, di-n-octylphthalate, and hexachlorocyclopentadiene were qualified as estimated in select samples due to instrument calibration variability. Caprolactam was qualified as estimated in sample CRP-MW07-0609 due to low MS/MSD recoveries; result may be biased low. Caprolactam was also qualified as estimated in all samples due to poor LCS recoveries; results may be biased low. Although specific method criteria were not met in these instances, data usability is not impacted and the affected positive and non-detected results are usable as estimated values and estimated quantitation limits.

The project goals with respect to sensitivity were met for the semivolatiles/semivolatiles-SIM data set with the following exceptions. The laboratory quantitation limits did not achieve the project action limit for bis(2-ethylhexyl)phthalate. In addition, blank actions taken on bis(2-ethylhexyl)phthalate in select samples resulted in non-detected values above the project action limit. Data usability may be impacted.

The project goals with respect to precision and completeness were met for the semivolatiles/semivolatiles-SIM data set. Data usability was not impacted with regards to precision and completeness.

Pesticides

The project goals with respect to accuracy were met for the pesticides data set. Gamma-chlordane and 4,4-DDT were qualified as estimated in select samples due to analytical interferences detected in the dual column analysis. Although specific method criteria were not met in this instance, data usability is not impacted and the affected positive results are usable as estimated values.

The project goals with respect to sensitivity were met for the pesticides data set with the following exception. Reporting limits were elevated for heptachlor epoxide in select samples since the analyte quantitation relative percent differences exceeded the 100% RPD QC limit. The non-detected results exceed the project action limit. Data usability may be impacted.

The project goals with respect to precision and completeness were met for the pesticides data set. Data usability was not impacted with regards to precision and completeness.

PCB, GRO, and DRO

The project goals with respect to accuracy, precision, sensitivity, and completeness were met for the PCB, GRO, and DRO data sets. Data usability was not impacted with regards to accuracy, precision, sensitivity, and completeness.

Tables: Data Validation Qualifiers and Codes
Data Summary Tables

Enclosures: Data Validation Worksheets

Data Validation Qualifiers and Codes

Data Validation Qualifiers:

= No qualifier attached to value (positive hit)
J = Value is estimated
U = Value is not detected
UJ = Value is not detected and estimated
R = Value (positive hit) is not usable
UR = Value was reported as ND but is not usable

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00870	NSAMPLE	CRP-MW01-0609			CRP-MW02-0609			CRP-MW03-0609			CRP-MW04-0609		
SDG: CARPT005	LAB_ID	0906013-01			0906028-01			0906028-02			0906056-02		
FRACTION: OV	SAMP_DATE	6/1/2009			6/2/2009			6/2/2009			6/4/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE		1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE		1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE		1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE		1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE		1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE		1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE		1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE		1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE		1	U		1	U		1	U		1	U	
2-BUTANONE		10	UJ	C	10	UJ	C	10	UJ	C	10	U	
2-HEXANONE		5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
4-METHYL-2-PENTANONE		5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
ACETONE		10	UJ	C	1.3	J	CP	2.3	J	CP	5.6	J	C
BENZENE		1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE		1	U		1	U		1	U		1	U	
BROMOFORM		1	U		1	U		1	U		1	U	
BROMOMETHANE		2	U		2	U		2	U		2	U	
CARBON DISULFIDE		1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE		1	U		1	U		1	U		1	U	
CHLOROBENZENE		1	U		1	U		1	U		1	U	
CHLORODIBROMOMETHANE		1	U		1	U		1	U		1	U	
CHLOROETHANE		2	U		2	U		2	U		2	U	
CHLOROFORM		1	U	A	1	U	A	1	U		3.3		
CHLOROMETHANE		2	U		2	U		2	U		2	U	
CIS-1,2-DICHLOROETHENE		1	U		1	U		1	U		0.62	J	P
CIS-1,3-DICHLOROPROPENE		1	U		1	U		1	U		1	U	
CYCLOHEXANE		1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE		2	U		2	U		2	U		2	U	
ETHYLBENZENE		1	U		1	U		1	U		1	U	
ISOPROPYLBENZENE		1	U		1	U		1	U		1	U	
METHYL ACETATE		2	UJ	C	2	UJ	C	2	UJ	C	2	UJ	C

PROJ_NO: 00870	NSAMPLE	CRP-MW05-0609			CRP-MW06-0609			CRP-MW07-0609			CRP-MW08-0609		
SDG: CARPT005	LAB_ID	0906041-03			0906041-04			0906041-02			0906041-01		
FRACTION: OV	SAMP_DATE	6/3/2009			6/3/2009			6/3/2009			6/3/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		1	U		1	U		1	U		20	U	
1,1,2,2-TETRACHLOROETHANE		1	U		0.27	J	P	1	U		21		
1,1,2-TRICHLOROETHANE		1	U		1	U		1	U		20	U	
1,1-DICHLOROETHANE		1	U		1	U		1	U		20	U	
1,1-DICHLOROETHENE		1	U		1	U		1	U		20	U	
1,2,4-TRICHLOROBENZENE		1	U		1	U		1	U	A	20	U	
1,2-DIBROMO-3-CHLOROPROPANE		1	U		1	U		1	U		20	U	
1,2-DIBROMOETHANE		1	U		1	U		1	U		20	U	
1,2-DICHLOROBENZENE		1	U		1	U		1	U		20	U	
1,2-DICHLOROETHANE		1	U		1	U		1	U		20	U	
1,2-DICHLOROPROPANE		1	U		1	U		1	U		20	U	
1,3-DICHLOROBENZENE		1	U		1	U		1	U		20	U	
1,4-DICHLOROBENZENE		1	U		1	U		1	U	A	20	U	
2-BUTANONE		10	U		10	U		10	U		200	U	
2-HEXANONE		5	UJ	C	5	UJ	C	5	U		100	U	
4-METHYL-2-PENTANONE		5	UJ	C	5	UJ	C	5	U		100	U	
ACETONE		2.2	J	P	10	U		1.1	J	P	200	U	
BENZENE		0.11	J	P	1	U		1	U		22		
BROMODICHLOROMETHANE		1	U		1	U		1	U		20	U	
BROMOFORM		1	U		1	U		1	U		20	U	
BROMOMETHANE		2	U		2	U		2	U		40	U	
CARBON DISULFIDE		1	U		1	U		1	U		20	U	
CARBON TETRACHLORIDE		1	U		1	U		1	U		20	U	
CHLOROBENZENE		1	U		1	U		1	U		20	U	
CHLORODIBROMOMETHANE		1	U		0.12	J	P	1	U		20	U	
CHLOROETHANE		2	U		2	U		2	U		40	U	
CHLOROFORM		1.5			2.4			1	U		20	U	A
CHLOROMETHANE		2	U		2	U		2	U		40	U	
CIS-1,2-DICHLOROETHENE		1	U		0.32	J	P	1	U		20	U	
CIS-1,3-DICHLOROPROPENE		1	U		1	U		1	U		20	U	
CYCLOHEXANE		1	U		1	U		1	U		20	U	
DICHLORODIFLUOROMETHANE		2	U		2	U		2	U		40	U	
ETHYLBENZENE		1	U		1	U		1	U		20	U	
ISOPROPYLBENZENE		1	U		1	U		1.2			24		
METHYL ACETATE		2	UJ	C	2	UJ	C	2	U		40	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW-DUP01			CRP-MW-RB01-060209			CRP-TB12-060109			CRP-TB13-060109		
SDG: CARPT005	LAB_ID	0906041-05			0906028-06			0906013-03			0906028-05		
FRACTION: OV	SAMP_DATE	6/3/2009			6/2/2009			6/1/2009			6/2/2009		
MEDIA: WATER	QC_TYPE	FD			RB			TB			TB		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF	CRP-MW08-0609											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		20	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE		20	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE		20	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE		20	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE		20	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE		20	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE		20	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE		20	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE		20	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE		20	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE		20	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE		20	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE		20	U		1	U		1	U		1	U	
2-BUTANONE		200	U		10	UJ	C	10	UJ	C	10	UJ	C
2-HEXANONE		100	U		5	UJ	C	5	UJ	C	5	UJ	C
4-METHYL-2-PENTANONE		100	U		5	UJ	C	5	UJ	C	5	UJ	C
ACETONE		200	U		4.3	J	CP	10	UJ	C	10	UJ	C
BENZENE		20	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE		20	U		1	U		1	U		1	U	
BROMOFORM		20	U		1	U		1	U		1	U	
BROMOMETHANE		40	U		2	U		2	U		2	U	
CARBON DISULFIDE		20	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE		20	U		1	U		1	U		1	U	
CHLOROBENZENE		20	U		1	U		1	U		1	U	
CHLORODIBROMOMETHANE		20	U		1	U		1	U		1	U	
CHLOROETHANE		40	U		2	U		2	U		2	U	
CHLOROFORM		20	U	A	1	U		0.16	J	P	1	U	
CHLOROMETHANE		40	U		2	U		2	U		2	U	
CIS-1,2-DICHLOROETHENE		20	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE		20	U		1	U		1	U		1	U	
CYCLOHEXANE		20	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE		40	U		2	U		2	U		2	U	
ETHYLBENZENE		20	U		1	U		1	U		1	U	
ISOPROPYLBENZENE		20	U		1	U		1	U		1	U	
METHYL ACETATE		40	U		2	UJ	C	2	UJ	C	2	UJ	C

PROJ_NO: 00870	NSAMPLE	CRP-TB14-060309			CRP-TB15-060309		
SDG: CARPT005	LAB_ID	0906041-11			0906056-01		
FRACTION: OV	SAMP_DATE	6/3/2009			6/4/2009		
MEDIA: WATER	QC_TYPE	TB			TB		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS						
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE		1	U		1	U	
1,1,2-TRICHLOROETHANE		1	U		1	U	
1,1-DICHLOROETHANE		1	U		1	U	
1,1-DICHLOROETHENE		1	U		1	U	
1,2,4-TRICHLOROBENZENE		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE		1	U		1	U	
1,2-DIBROMOETHANE		1	U		1	U	
1,2-DICHLOROBENZENE		1	U		1	U	
1,2-DICHLOROETHANE		1	U		1	U	
1,2-DICHLOROPROPANE		1	U		1	U	
1,3-DICHLOROBENZENE		1	U		1	U	
1,4-DICHLOROBENZENE		1	U		1	U	
2-BUTANONE		10	UJ	C	10	U	
2-HEXANONE		5	UJ	C	5	UJ	C
4-METHYL-2-PENTANONE		5	UJ	C	5	UJ	C
ACETONE		10	UJ	C	10	U	
BENZENE		1	U		1	U	
BROMODICHLOROMETHANE		1	U		1	U	
BROMOFORM		1	U		1	U	
BROMOMETHANE		2	U		2	U	
CARBON DISULFIDE		1	U		1	U	
CARBON TETRACHLORIDE		1	U		1	U	
CHLOROBENZENE		1	U		1	U	
CHLORODIBROMOMETHANE		1	U		1	U	
CHLOROETHANE		2	U		2	U	
CHLOROFORM		1	U		0.12	J	P
CHLOROMETHANE		2	U		2	U	
CIS-1,2-DICHLOROETHENE		1	U		1	U	
CIS-1,3-DICHLOROPROPENE		1	U		1	U	
CYCLOHEXANE		1	U		1	U	
DICHLORODIFLUOROMETHANE		2	U		2	U	
ETHYLBENZENE		1	U		1	U	
ISOPROPYLBENZENE		1	U		1	U	
METHYL ACETATE		2	UJ	C	2	UJ	C

PROJ_NO: 00870	NSAMPLE	CRP-MW01-0609			CRP-MW02-0609			CRP-MW03-0609			CRP-MW04-0609		
SDG: CARPT005	LAB_ID	0906013-01			0906028-01			0906028-02			0906056-02		
FRACTION: OV	SAMP_DATE	6/1/2009			6/2/2009			6/2/2009			6/4/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		1	U		1	U		1	U		1	U	
METHYL TERT-BUTYL ETHER		1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE		2	U		2	U		2	U		2	U	
STYRENE		1	U		1	U		1	U		1	U	
TETRACHLOROETHENE		1	U		1	U		1	U		74		
TOLUENE		1	U		1	U		1	U		0.17	J	P
TOTAL XYLENES		0.37	J	P	1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE		1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
TRICHLOROETHENE		1	U		1	U		1	U		14		
TRICHLOROFLUOROMETHANE		2	U		2	U		2	U		2	U	
VINYL CHLORIDE		2	U		2	U		2	U		2	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW05-0609			CRP-MW06-0609			CRP-MW07-0609			CRP-MW08-0609		
SDG: CARPT005	LAB_ID	0906041-03			0906041-04			0906041-02			0906041-01		
FRACTION: OV	SAMP_DATE	6/3/2009			6/3/2009			6/3/2009			6/3/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		1	U		1	U		1	U		20	U	
METHYL TERT-BUTYL ETHER		1	U		1	U		1	U		20	U	
METHYLENE CHLORIDE		2	U		2	U		2	U		40	U	A
STYRENE		1	U		1	U		1	U		20	U	
TETRACHLOROETHENE		1	U		0.21	J	P	1	U		2700		
TOLUENE		1	U		1	U		1	U		22		
TOTAL XYLENES		1	U		1	U		1	U		10	J	P
TRANS-1,2-DICHLOROETHENE		1	U		1	U		1	U		20	U	
TRANS-1,3-DICHLOROPROPENE		1	UJ	C	1	UJ	C	1	U		20	U	
TRICHLOROETHENE		1	U		28			1	U		5.9	J	P
TRICHLOROFLUOROMETHANE		2	U		2	U		2	U		40	U	
VINYL CHLORIDE		2	U		2	U		2	U		40	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW-DUP01			CRP-MW-RB01-060209			CRP-TB12-060109			CRP-TB13-060109		
SDG: CARPT005	LAB_ID	0906041-05			0906028-06			0906013-03			0906028-05		
FRACTION: OV	SAMP_DATE	6/3/2009			6/2/2009			6/1/2009			6/2/2009		
MEDIA: WATER	QC_TYPE	FD			RB			TB			TB		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF	CRP-MW08-0609											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		20	U		1	U		1	U		1	U	
METHYL TERT-BUTYL ETHER		20	U		1	U		1	U		1	U	
METHYLENE CHLORIDE		40	U	A	1	U	A	2	U		2	U	
STYRENE		20	U		1	U		1	U		1	U	
TETRACHLOROETHENE		2700			1	U		1	U		1	U	
TOLUENE		2.3	J	P	0.17	J	P	1	U		1	U	
TOTAL XYLENES		20	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE		20	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		20	U		1	UJ	C	1	UJ	C	1	UJ	C
TRICHLOROETHENE		4.2	J	P	1	U		1	U		1	U	
TRICHLOROFLUOROMETHANE		40	U		2	U		2	U		2	U	
VINYL CHLORIDE		40	U		2	U		2	U		2	U	

PROJ_NO: 00870	NSAMPLE	CRP-TB14-060309			CRP-TB15-060309		
SDG: CARPT005	LAB_ID	0906041-11			0906056-01		
FRACTION: OV	SAMP_DATE	6/3/2009			6/4/2009		
MEDIA: WATER	QC_TYPE	TB			TB		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS						
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		1	U		1	U	
METHYL TERT-BUTYL ETHER		1	U		1	U	
METHYLENE CHLORIDE		2	U		2	U	
STYRENE		1	U		1	U	
TETRACHLOROETHENE		1	U		1	U	
TOLUENE		1	U		1	U	
TOTAL XYLENES		1	U		1	U	
TRANS-1,2-DICHLOROETHENE		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		1	UJ	C	1	UJ	C
TRICHLOROETHENE		1	U		1	U	
TRICHLOROFLUOROMETHANE		2	U		2	U	
VINYL CHLORIDE		2	U		2	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW01-0609			CRP-MW02-0609			CRP-MW03-0609			CRP-MW04-0609		
SDG: CARPT005	LAB_ID	0906013-01			0906028-01			0906028-02			0906056-02		
FRACTION: OS	SAMP_DATE	6/1/2009			6/2/2009			6/2/2009			6/4/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		4.7	U		4.8	U		4.9	U		4.7	U	
1,4-DIOXANE		9.3	U		9.6	U		9.8	U		9.3	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		4.7	U		4.8	U		4.9	U		4.7	U	
2,4,5-TRICHLOROPHENOL		4.7	U		4.8	U		4.9	U		4.7	U	
2,4,6-TRICHLOROPHENOL		4.7	U		4.8	U		4.9	U		4.7	U	
2,4-DICHLOROPHENOL		4.7	U		4.8	U		4.9	U		4.7	U	
2,4-DIMETHYLPHENOL		19	U		19	U		20	U		19	U	
2,4-DINITROPHENOL		47	U		48	U		49	UJ	C	47	U	
2,4-DINITROTOLUENE		4.7	U		4.8	U		4.9	U		4.7	U	
2,6-DINITROTOLUENE		4.7	U		4.8	U		4.9	U		4.7	U	
2-CHLORONAPHTHALENE		4.7	U		4.8	U		4.9	U		4.7	U	
2-CHLOROPHENOL		4.7	U		4.8	U		4.9	U		4.7	U	
2-METHYLNAPHTHALENE		4.7	U		4.8	U		4.9	U		4.7	U	
2-METHYLPHENOL		4.7	U		4.8	U		4.9	U		4.7	U	
2-NITROANILINE		19	U		19	U		20	U		19	U	
2-NITROPHENOL		4.7	U		4.8	U		4.9	U		4.7	U	
3,3'-DICHLOROBENZIDINE		4.7	U		4.8	U		4.9	U		4.7	U	
3-NITROANILINE		19	U		19	U		20	U		19	U	
4,6-DINITRO-2-METHYLPHENOL		19	U		19	U		20	U		19	U	
4-BROMOPHENYL PHENYL ETHER		4.7	U		4.8	U		4.9	U		4.7	U	
4-CHLORO-3-METHYLPHENOL		4.7	U		4.8	U		4.9	U		4.7	U	
4-CHLOROANILINE		4.7	U		4.8	U		4.9	U		4.7	U	
4-CHLOROPHENYL PHENYL ETHER		4.7	U		4.8	U		4.9	U		4.7	U	
4-METHYLPHENOL		4.7	U		4.8	U		4.9	U		4.7	U	
4-NITROANILINE		19	U		19	U		20	U		19	U	
4-NITROPHENOL		19	U		19	U		20	U		19	U	
ACENAPHTHENE		4.7	U		4.8	U		4.9	U		4.7	U	
ACENAPHTHYLENE		4.7	U		4.8	U		4.9	U		4.7	U	
ACETOPHENONE		4.7	U		4.8	U		4.9	U		4.7	U	
ANTHRACENE		4.7	U		4.8	U		4.9	U		4.7	U	
ATRAZINE		4.7	U		4.8	UJ	C	4.9	U		4.7	U	
BENZALDEHYDE		4.7	U		4.8	UJ	C	4.9	U		4.7	U	
BENZO(A)ANTHRACENE		4.7	U		4.8	U		4.9	U		4.7	U	
BENZO(A)PYRENE		0.093	U		0.096	U		0.098	U		0.093	U	
BENZO(B)FLUORANTHENE		4.7	U		4.8	U		4.9	U		4.7	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW05-0609			CRP-MW06-0609			CRP-MW07-0609			CRP-MW08-0609		
SDG: CARPT005	LAB_ID	0906041-03			0906041-04			0906041-02			0906041-01		
FRACTION: OS	SAMP_DATE	6/3/2009			6/3/2009			6/3/2009			6/3/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		4.7	U		4.6	U		4.8	U		4.8	U	
1,4-DIOXANE		9.4	U		9.2	U		9.6	U		9.5	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		4.7	U		4.6	U		4.8	U		4.8	U	
2,4,5-TRICHLOROPHENOL		4.7	U		4.6	U		4.8	U		4.8	U	
2,4,6-TRICHLOROPHENOL		4.7	U		4.6	U		4.8	U		4.8	U	
2,4-DICHLOROPHENOL		4.7	U		4.6	U		4.8	U		4.8	U	
2,4-DIMETHYLPHENOL		19	U		18	U		19	U		19	U	
2,4-DINITROPHENOL		47	UJ	C	46	U		48	UJ	C	48	UJ	C
2,4-DINITROTOLUENE		4.7	U		4.6	U		4.8	U		4.8	U	
2,6-DINITROTOLUENE		4.7	U		4.6	U		4.8	U		4.8	U	
2-CHLORONAPHTHALENE		4.7	U		4.6	U		4.8	U		4.8	U	
2-CHLOROPHENOL		4.7	U		4.6	U		4.8	U		4.8	U	
2-METHYLNAPHTHALENE		4.7	U		4.6	U		4.8	U		4.8	U	
2-METHYLPHENOL		4.7	U		4.6	U		4.8	U		4.8	U	
2-NITROANILINE		19	U		18	U		19	U		19	U	
2-NITROPHENOL		4.7	U		4.6	U		4.8	U		4.8	U	
3,3'-DICHLOROBENZIDINE		4.7	U		4.6	U		4.8	U		4.8	U	
3-NITROANILINE		19	U		18	U		19	U		19	U	
4,6-DINITRO-2-METHYLPHENOL		19	U		18	U		19	U		19	U	
4-BROMOPHENYL PHENYL ETHER		4.7	U		4.6	U		4.8	U		4.8	U	
4-CHLORO-3-METHYLPHENOL		4.7	U		4.6	U		4.8	U		4.8	U	
4-CHLOROANILINE		4.7	U		4.6	U		4.8	U		4.8	U	
4-CHLOROPHENYL PHENYL ETHER		4.7	U		4.6	U		4.8	U		4.8	U	
4-METHYLPHENOL		4.7	U		4.6	U		4.8	U		4.8	U	
4-NITROANILINE		19	U		18	U		19	U		19	U	
4-NITROPHENOL		19	U		18	U		19	U		19	U	
ACENAPHTHENE		4.7	U		4.6	U		4.8	U		4.8	U	
ACENAPHTHYLENE		4.7	U		4.6	U		4.8	U		4.8	U	
ACETOPHENONE		4.7	U		4.6	U		4.8	U		4.8	U	
ANTHRACENE		4.7	U		4.6	U		4.8	U		4.8	U	
ATRAZINE		4.7	U		4.6	UJ	C	4.8	U		4.8	U	
BENZALDEHYDE		4.7	U		4.6	UJ	C	4.8	U		4.8	U	
BENZO(A)ANTHRACENE		4.7	U		4.6	U		4.8	U		4.8	U	
BENZO(A)PYRENE		0.094	U		0.092	U		0.096	U		0.095	U	
BENZO(B)FLUORANTHENE		4.7	U		4.6	U		4.8	U		4.8	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW-DUP01			CRP-MW-RB01-060209		
SDG: CARPT005	LAB_ID	0906041-05			0906028-06		
FRACTION: OS	SAMP_DATE	6/3/2009			6/2/2009		
MEDIA: WATER	QC_TYPE	FD			RB		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS						
	DUP_OF	CRP-MW08-0609					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		4.6	U		4.7	U	
1,4-DIOXANE		9.2	U		9.4	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		4.6	U		4.7	U	
2,4,5-TRICHLOROPHENOL		4.6	U		4.7	U	
2,4,6-TRICHLOROPHENOL		4.6	U		4.7	U	
2,4-DICHLOROPHENOL		4.6	U		4.7	U	
2,4-DIMETHYLPHENOL		18	U		19	U	
2,4-DINITROPHENOL		46	UJ	C	47	U	
2,4-DINITROTOLUENE		4.6	U		4.7	U	
2,6-DINITROTOLUENE		4.6	U		4.7	U	
2-CHLORONAPHTHALENE		4.6	U		4.7	U	
2-CHLOROPHENOL		4.6	U		4.7	U	
2-METHYLNAPHTHALENE		4.6	U		4.7	U	
2-METHYLPHENOL		4.6	U		4.7	U	
2-NITROANILINE		18	U		19	U	
2-NITROPHENOL		4.6	U		4.7	U	
3,3'-DICHLOROBENZIDINE		4.6	U		4.7	U	
3-NITROANILINE		18	U		19	U	
4,6-DINITRO-2-METHYLPHENOL		18	U		19	U	
4-BROMOPHENYL PHENYL ETHER		4.6	U		4.7	U	
4-CHLORO-3-METHYLPHENOL		4.6	U		4.7	U	
4-CHLOROANILINE		4.6	U		4.7	U	
4-CHLOROPHENYL PHENYL ETHER		4.6	U		4.7	U	
4-METHYLPHENOL		4.6	U		4.7	U	
4-NITROANILINE		18	U		19	U	
4-NITROPHENOL		18	U		19	U	
ACENAPHTHENE		4.6	U		4.7	U	
ACENAPHTHYLENE		4.6	U		4.7	U	
ACETOPHENONE		4.6	U		4.7	U	
ANTHRACENE		4.6	U		4.7	U	
ATRAZINE		4.6	U		4.7	UJ	C
BENZALDEHYDE		4.6	U		4.7	UJ	C
BENZO(A)ANTHRACENE		4.6	U		4.7	U	
BENZO(A)PYRENE		0.092	U		0.094	U	
BENZO(B)FLUORANTHENE		4.6	U		4.7	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW01-0609			CRP-MW02-0609			CRP-MW03-0609			CRP-MW04-0609		
SDG: CARPT005	LAB_ID	0906013-01			0906028-01			0906028-02			0906056-02		
FRACTION: OS	SAMP_DATE	6/1/2009			6/2/2009			6/2/2009			6/4/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(G,H,I)PERYLENE		4.7	U		4.8	U		4.9	U		4.7	U	
BENZO(K)FLUORANTHENE		4.7	U		4.8	U		4.9	U		4.7	U	
BIS(2-CHLOROETHOXY)METHANE		4.7	U		4.8	U		4.9	U		4.7	U	
BIS(2-CHLOROETHYL)ETHER		4.7	U		4.8	U		4.9	U		4.7	U	
BIS(2-ETHYLHEXYL)PHTHALATE		9.3	U	A	9.6	U		9.8	U		9.3	U	
BUTYL BENZYL PHTHALATE		4.7	U		4.8	U		4.9	U		4.7	U	
CAPROLACTAM		4.7	UJ	AE	4.8	UJ	AE	4.9	UJ	AE	4.7	UJ	AE
CARBAZOLE		4.7	U		4.8	U		4.9	U		4.7	U	
CHRYSENE		4.7	U		4.8	U		4.9	U		4.7	U	
DIBENZO(A,H)ANTHRACENE		4.7	U		4.8	U		4.9	U		4.7	U	
DIBENZOFURAN		4.7	U		4.8	U		4.9	U		4.7	U	
DIETHYL PHTHALATE		4.7	U		4.8	U		4.9	U		4.7	U	
DIMETHYL PHTHALATE		4.7	U		4.8	U		4.9	U		4.7	U	
DI-N-BUTYL PHTHALATE		4.7	U		4.8	U		4.9	U		4.7	U	
DI-N-OCTYL PHTHALATE		4.7	U		4.8	U		4.9	UJ	C	4.7	U	
FLUORANTHENE		4.7	U		4.8	U		4.9	U		4.7	U	
FLUORENE		4.7	U		4.8	U		4.9	U		4.7	U	
HEXACHLOROBENZENE		0.093	U		0.096	U		0.098	U	A	0.093	U	
HEXACHLOROBUTADIENE		4.7	U		4.8	U		4.9	U		4.7	U	
HEXACHLOROCYCLOPENTADIENE		4.7	U		4.8	U		4.9	UJ	C	4.7	U	
HEXACHLOROETHANE		4.7	U		4.8	U		4.9	U		4.7	U	
INDENO(1,2,3-CD)PYRENE		4.7	U		4.8	U		4.9	U		4.7	U	
ISOPHORONE		4.7	U		4.8	U		4.9	U		4.7	U	
NAPHTHALENE		4.7	U		4.8	U		4.9	U		4.7	U	
NITROBENZENE		4.7	U		4.8	U		4.9	U		4.7	U	
N-NITROSO-DI-N-PROPYLAMINE		4.7	U		4.8	U		4.9	U		4.7	U	
N-NITROSODIPHENYLAMINE		4.7	U		4.8	U		4.9	U		4.7	U	
PENTACHLOROPHENOL		0.093	U	A	0.096	U	A	0.098	U		0.093	U	A
PHENANTHRENE		4.7	U		4.8	U		4.9	U		4.7	U	
PHENOL		4.7	U		4.8	U		4.9	U		4.7	U	
PYRENE		4.7	U		4.8	U		4.9	U		4.7	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW05-0609			CRP-MW06-0609			CRP-MW07-0609			CRP-MW08-0609		
SDG: CARPT005	LAB_ID	0906041-03			0906041-04			0906041-02			0906041-01		
FRACTION: OS	SAMP_DATE	6/3/2009			6/3/2009			6/3/2009			6/3/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(G,H,I)PERYLENE		4.7	U		4.6	U		4.8	U		4.8	U	
BENZO(K)FLUORANTHENE		4.7	U		4.6	U		4.8	U		4.8	U	
BIS(2-CHLOROETHOXY)METHANE		4.7	U		4.6	U		4.8	U		4.8	U	
BIS(2-CHLOROETHYL)ETHER		4.7	U		4.6	U		4.8	U		4.8	U	
BIS(2-ETHYLHEXYL)PHTHALATE		9.4	U		9.2	U		9.6	U		9.6	U	A
BUTYL BENZYL PHTHALATE		4.7	U		4.6	U		4.8	U		4.8	U	
CAPROLACTAM		4.7	UJ	AE	4.6	UJ	AE	4.8	UJ	ADE	4.8	UJ	AE
CARBAZOLE		4.7	U		4.6	U		4.8	U		4.8	U	
CHRYSENE		4.7	U		4.6	U		4.8	U		4.8	U	
DIBENZO(A,H)ANTHRACENE		4.7	U		4.6	U		4.8	U		4.8	U	
DIBENZOFURAN		4.7	U		4.6	U		4.8	U		4.8	U	
DIETHYL PHTHALATE		4.7	U		4.6	U		4.8	U		4.8	U	
DIMETHYL PHTHALATE		4.7	U		4.6	U		4.8	U		4.8	U	
DI-N-BUTYL PHTHALATE		4.7	U		4.6	U		4.8	U		4.8	U	
DI-N-OCTYL PHTHALATE		4.7	UJ	C	4.6	U		4.8	UJ	C	4.8	UJ	C
FLUORANTHENE		4.7	U		4.6	U		4.8	U		4.8	U	
FLUORENE		4.7	U		4.6	U		4.8	U		4.8	U	
HEXACHLOROBENZENE		0.094	U		0.092	U		0.096	U		0.095	U	
HEXACHLOROBUTADIENE		4.7	U		4.6	U		4.8	U		4.8	U	
HEXACHLOROCYCLOPENTADIENE		4.7	UJ	C	4.6	U		4.8	UJ	C	4.8	UJ	C
HEXACHLOROETHANE		4.7	U		4.6	U		4.8	U		4.8	U	
INDENO(1,2,3-CD)PYRENE		4.7	U		4.6	U		4.8	U		4.8	U	
ISOPHORONE		4.7	U		4.6	U		4.8	U		4.8	U	
NAPHTHALENE		4.7	U		4.6	U		4.8	U		4.8	U	
NITROBENZENE		4.7	U		4.6	U		4.8	U		4.8	U	
N-NITROSO-DI-N-PROPYLAMINE		4.7	U		4.6	U		4.8	U		4.8	U	
N-NITROSODIPHENYLAMINE		4.7	U		4.6	U		4.8	U		4.8	U	
PENTACHLOROPHENOL		0.094	U		0.092	U	A	0.096	U	A	0.095	U	
PHENANTHRENE		4.7	U		4.6	U		4.8	U		4.8	U	
PHENOL		4.7	U		4.6	U		4.8	U		4.8	U	
PYRENE		4.7	U		4.6	U		4.8	U		4.8	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW-DUP01			CRP-MW-RB01-060209		
SDG: CARPT005	LAB_ID	0906041-05			0906028-06		
FRACTION: OS	SAMP_DATE	6/3/2009			6/2/2009		
MEDIA: WATER	QC_TYPE	FD			RB		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS						
	DUP_OF	CRP-MW08-0609					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(G,H,I)PERYLENE		4.6	U		4.7	U	
BENZO(K)FLUORANTHENE		4.6	U		4.7	U	
BIS(2-CHLOROETHOXY)METHANE		4.6	U		4.7	U	
BIS(2-CHLOROETHYL)ETHER		4.6	U		4.7	U	
BIS(2-ETHYLHEXYL)PHTHALATE		9.2	U		9.4	U	
BUTYL BENZYL PHTHALATE		4.6	U		4.7	U	
CAPROLACTAM		4.6	UJ	AE	4.7	UJ	AE
CARBAZOLE		4.6	U		4.7	U	
CHRYSENE		4.6	U		4.7	U	
DIBENZO(A,H)ANTHRACENE		4.6	U		4.7	U	
DIBENZOFURAN		4.6	U		4.7	U	
DIETHYL PHTHALATE		4.6	U		4.7	U	
DIMETHYL PHTHALATE		4.6	U		4.7	U	
DI-N-BUTYL PHTHALATE		4.6	U		4.7	U	
DI-N-OCTYL PHTHALATE		4.6	UJ	C	4.7	U	
FLUORANTHENE		4.6	U		4.7	U	
FLUORENE		4.6	U		4.7	U	
HEXACHLOROBENZENE		0.092	U		0.094	U	
HEXACHLOROBUTADIENE		4.6	U		4.7	U	
HEXACHLOROCYCLOPENTADIENE		4.6	UJ	C	4.7	U	
HEXACHLOROETHANE		4.6	U		4.7	U	
INDENO(1,2,3-CD)PYRENE		4.6	U		4.7	U	
ISOPHORONE		4.6	U		4.7	U	
NAPHTHALENE		4.6	U		4.7	U	
NITROBENZENE		4.6	U		4.7	U	
N-NITROSO-DI-N-PROPYLAMINE		4.6	U		4.7	U	
N-NITROSODIPHENYLAMINE		4.6	U		4.7	U	
PENTACHLOROPHENOL		0.092	U		0.094	U	
PHENANTHRENE		4.6	U		4.7	U	
PHENOL		4.6	U		4.7	U	
PYRENE		4.6	U		4.7	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW01-0609			CRP-MW02-0609			CRP-MW03-0609			CRP-MW04-0609		
SDG: CARPT005	LAB_ID	0906013-01			0906028-01			0906028-02			0906056-02		
FRACTION: PEST/PCB	SAMP_DATE	6/1/2009			6/2/2009			6/2/2009			6/4/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.019	U		0.019	U		0.02	U		0.019	U	
4,4'-DDE		0.019	U		0.019	U		0.02	U		0.019	U	
4,4'-DDT		0.019	U		0.019	U		0.02	U		0.019	U	
ALDRIN		0.0094	U		0.0096	U		0.0098	U		0.0096	U	
ALPHA-BHC		0.0094	U		0.0096	U		0.0098	U		0.0096	U	
ALPHA-CHLORDANE		0.0094	U		0.0096	U		0.0098	U		0.0096	U	
AROCLOR-1016		0.47	U		0.48	U		0.49	U		0.48	U	
AROCLOR-1221		0.47	U		0.48	U		0.49	U		0.48	U	
AROCLOR-1232		0.47	U		0.48	U		0.49	U		0.48	U	
AROCLOR-1242		0.47	U		0.48	U		0.49	U		0.48	U	
AROCLOR-1248		0.47	U		0.48	U		0.49	U		0.48	U	
AROCLOR-1254		0.47	U		0.48	U		0.49	U		0.48	U	
AROCLOR-1260		0.47	U		0.48	U		0.49	U		0.48	U	
BETA-BHC		0.0094	U		0.0096	U		0.0098	U		0.0096	U	
DELTA-BHC		0.0094	U		0.0096	U		0.0098	U		0.0096	U	
DIELDRIN		0.019	U		0.019	U		0.02	U		0.019	U	
ENDOSULFAN I		0.0094	U		0.0096	U		0.0098	U		0.0096	U	
ENDOSULFAN II		0.019	U		0.019	U		0.02	U		0.019	U	
ENDOSULFAN SULFATE		0.019	U		0.019	U		0.02	U		0.019	U	
ENDRIN		0.019	U		0.019	U		0.02	U		0.019	U	
ENDRIN ALDEHYDE		0.019	U		0.019	U		0.02	U		0.019	U	
ENDRIN KETONE		0.019	U		0.019	U		0.02	U		0.019	U	
GAMMA-BHC (LINDANE)		0.0094	U		0.0096	U		0.0098	U		0.0096	U	
GAMMA-CHLORDANE		0.0038	J	PU	0.0096	U		0.0098	U		0.0096	U	
HEPTACHLOR		0.0094	U		0.0096	U		0.0098	U		0.0096	U	
HEPTACHLOR EPOXIDE		0.0094	U		0.0096	U		0.0098	U		0.43	UJ	U
METHOXYCHLOR		0.0094	U		0.0096	U		0.0098	U		0.0096	U	
TOXAPHENE		0.94	U		0.96	U		0.98	U		0.96	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW05-0609			CRP-MW06-0609			CRP-MW07-0609			CRP-MW08-0609		
SDG: CARPT005	LAB_ID	0906041-03			0906041-04			0906041-02			0906041-01		
FRACTION: PEST/PCB	SAMP_DATE	6/3/2009			6/3/2009			6/3/2009			6/3/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.019	U		0.018	U		0.019	U		0.018	U	
4,4'-DDE		0.019	U		0.018	U		0.01	J	P	0.018	U	
4,4'-DDT		0.019	U		0.018	U		0.01	J	PU	0.018	U	
ALDRIN		0.0093	U		0.0092	U		0.0094	U		0.0092	U	
ALPHA-BHC		0.0093	U		0.0092	U		0.0094	U		0.0092	U	
ALPHA-CHLORDANE		0.0093	U		0.0092	U		0.0094	U		0.0092	U	
AROCLOR-1016		0.47	U		0.46	U		0.47	U		0.46	U	
AROCLOR-1221		0.47	U		0.46	U		0.47	U		0.46	U	
AROCLOR-1232		0.47	U		0.46	U		0.47	U		0.46	U	
AROCLOR-1242		0.47	U		0.46	U		0.47	U		0.46	U	
AROCLOR-1248		0.47	U		0.46	U		0.47	U		0.46	U	
AROCLOR-1254		0.47	U		0.46	U		0.47	U		0.46	U	
AROCLOR-1260		0.47	U		0.46	U		0.47	U		0.46	U	
BETA-BHC		0.0093	U		0.0092	U		0.0094	U		0.0092	U	
DELTA-BHC		0.0093	U		0.0092	U		0.0094	U		0.0092	U	
DIELDRIN		0.019	U		0.018	U		0.019	U		0.018	U	
ENDOSULFAN I		0.0093	U		0.0092	U		0.0094	U		0.0092	U	
ENDOSULFAN II		0.0089	J	P	0.018	U		0.019	U		0.018	U	
ENDOSULFAN SULFATE		0.019	U		0.018	U		0.019	U		0.018	U	
ENDRIN		0.019	U		0.018	U		0.019	U		0.018	U	
ENDRIN ALDEHYDE		0.019	U		0.018	U		0.019	U		0.018	U	
ENDRIN KETONE		0.019	U		0.018	U		0.019	U		0.018	U	
GAMMA-BHC (LINDANE)		0.0093	U		0.0092	U		0.0094	U		0.0092	U	
GAMMA-CHLORDANE		0.0093	U		0.0092	U		0.0094	U		0.0092	U	
HEPTACHLOR		0.0093	U		0.0092	U		0.0094	U		0.0092	U	
HEPTACHLOR EPOXIDE		0.0093	U		3.7	UJ	U	0.0094	U		0.0092	U	
METHOXYCHLOR		0.0093	U		0.0092	U		0.0094	U		0.0092	U	
TOXAPHENE		0.93	U		0.92	U		0.94	U		0.92	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW-DUP01			CRP-MW-RB01-060209		
SDG: CARPT005	LAB_ID	0906041-05			0906028-06		
FRACTION: PEST/PCB	SAMP_DATE	6/3/2009			6/2/2009		
MEDIA: WATER	QC_TYPE	FD			RB		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS						
	DUP_OF	CRP-MW08-0609					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.019	U		0.019	U	
4,4'-DDE		0.019	U		0.019	U	
4,4'-DDT		0.019	U		0.019	U	
ALDRIN		0.0093	U		0.0094	U	
ALPHA-BHC		0.0093	U		0.0094	U	
ALPHA-CHLORDANE		0.0093	U		0.0094	U	
AROCLOR-1016		0.47	U		0.47	U	
AROCLOR-1221		0.47	U		0.47	U	
AROCLOR-1232		0.47	U		0.47	U	
AROCLOR-1242		0.47	U		0.47	U	
AROCLOR-1248		0.47	U		0.47	U	
AROCLOR-1254		0.47	U		0.47	U	
AROCLOR-1260		0.47	U		0.47	U	
BETA-BHC		0.0093	U		0.0094	U	
DELTA-BHC		0.0093	U		0.0094	U	
DIELDRIN		0.019	U		0.019	U	
ENDOSULFAN I		0.0093	U		0.0094	U	
ENDOSULFAN II		0.019	U		0.019	U	
ENDOSULFAN SULFATE		0.019	U		0.019	U	
ENDRIN		0.019	U		0.019	U	
ENDRIN ALDEHYDE		0.019	U		0.019	U	
ENDRIN KETONE		0.019	U		0.019	U	
GAMMA-BHC (LINDANE)		0.0093	U		0.0094	U	
GAMMA-CHLORDANE		0.0093	U		0.0094	U	
HEPTACHLOR		0.0093	U		0.0094	U	
HEPTACHLOR EPOXIDE		0.0093	U		0.0094	U	
METHOXYCHLOR		0.0093	U		0.0094	U	
TOXAPHENE		0.93	U		0.94	U	

PROJ_NO: 00870	NSAMPLE	CRP-MW01-0609			CRP-MW02-0609			CRP-MW03-0609			CRP-MW04-0609		
SDG: CARPT005	LAB_ID	0906013-01			0906028-01			0906028-02			0906056-02		
FRACTION: PET	SAMP_DATE	6/1/2009			6/2/2009			6/2/2009			6/4/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/L			MG/L			MG/L			MG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		0.093	U		0.094	U		0.094	U		0.093	U	
GASOLINE RANGE ORGANICS		0.055	U		0.055	U		0.055	U		0.061		

PROJ_NO: 00870	NSAMPLE	CRP-MW05-0609			CRP-MW06-0609			CRP-MW07-0609			CRP-MW08-0609		
SDG: CARPT005	LAB_ID	0906041-03			0906041-04			0906041-02			0906041-01		
FRACTION: PET	SAMP_DATE	6/3/2009			6/3/2009			6/3/2009			6/3/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/L			MG/L			MG/L			MG/L		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		0.092	U		0.092	U		0.099	U		0.094	U	
GASOLINE RANGE ORGANICS		0.055	U		0.055	U		0.055	U		0.42		

PROJ_NO: 00870	NSAMPLE	CRP-MW-DUP01			CRP-MW-RB01-060209			CRP-TB13-060109			CRP-TB14-060309		
SDG: CARPT005	LAB_ID	0906041-05			0906028-06			0906028-05			0906041-11		
FRACTION: PET	SAMP_DATE	6/3/2009			6/2/2009			6/2/2009			6/3/2009		
MEDIA: WATER	QC_TYPE	FD			RB			TB			TB		
	UNITS	MG/L			MG/L			MG/L			MG/L		
	PCT_SOLIDS												
	DUP_OF	CRP-MW08-0609											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		0.092	U		0.093	U							
GASOLINE RANGE ORGANICS		0.4			0.055	U		0.055	U		0.055	U	

PROJ_NO: 00870	NSAMPLE	CRP-TB15-060309		
SDG: CARPT005	LAB_ID	0906056-01		
FRACTION: PET	SAMP_DATE	6/4/2009		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	MG/L		
	PCT_SOLIDS			
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
DIESEL RANGE ORGANICS				
GASOLINE RANGE ORGANICS		0.055	U	

APPENDIX E

ANALYTICAL DATA

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001	CRP-SB04-0002	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001	CRP-SB07-0001-AVG	CRP-SB07-0001-D	CRP-SB08-0001	CRP-SB09-0001
LOCATION ID			CRP-SB01	CRP-SB02	CRP-SB03	CRP-SB04	CRP-SB05	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB09
SAMPLE DATE			05/12/09	05/12/09	05/12/09	05/28/09	05/12/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09	05/12/09
TOP DEPTH			0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM
VOLATILES (UG/KG)													
1,1,1-TRICHLOROETHANE	540000	900000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
1,1,2,2-TETRACHLOROETHANE	1300	590	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
1,1,2-TRICHLOROETHANE	3600	1100	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
1,1-DICHLOROETHANE	920000	3400	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
1,1-DICHLOROETHENE	200	25000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
1,2,4-TRICHLOROBENZENE	20000	8700	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
1,2-DIBROMO-3-CHLOROPROPANE	500	5.6	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
1,2-DIBROMOETHANE	10	34	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
1,2-DICHLOROBENZENE	510000	200000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
1,2-DICHLOROETHANE	900	450	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
1,2-DICHLOROPROPANE	1900	930	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
1,3-DICHLOROBENZENE	430000		7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
1,4-DICHLOROBENZENE	20000	2600	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
2-BUTANONE	10000000	2800000	72 UJ	53 UJ	56 UJ	39 U	94 UJ	52 UJ	60 UJ	59.5 UJ	59 UJ	56 UJ	80 UJ
2-HEXANONE			14 U	11 U	11 U	7.8 U	19 U	10 U	12 U	12 U	12 U	11 U	16 U
4-METHYL-2-PENTANONE	1200000	530000	14 U	11 U	11 U	7.8 U	19 U	10 U	12 U	12 U	12 U	11 U	16 U
ACETONE	7800000	6100000	72 UJ	53 UJ	56 UJ	39 U	9.6 J	52 UJ	76 J	59 J	42 J	12 J	80 UJ
BENZENE	2500	1100	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
BROMODICHLOROMETHANE	10000	280	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001	CRP-SB04-0002	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001	CRP-SB07-0001-AVG	CRP-SB07-0001-D	CRP-SB08-0001	CRP-SB09-0001
LOCATION ID			CRP-SB01	CRP-SB02	CRP-SB03	CRP-SB04	CRP-SB05	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB09
SAMPLE DATE			05/12/09	05/12/09	05/12/09	05/28/09	05/12/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09	05/12/09
TOP DEPTH			0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM
BROMOFORM	81000	61000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
BROMOMETHANE	800	790	14 U	11 U	11 U	7.8 U	19 U	10 U	12 U	12 U	12 U	11 U	16 U
BTEX			7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	6 U	5.9 U	5.6 U	8 U
CARBON DISULFIDE		67000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
CARBON TETRACHLORIDE	1500	250	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
CHLOROBENZENE	40000	31000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
CHLORODIBROMOMETHANE	7600	700	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
CHLOROETHANE		1500000	14 U	11 U	11 U	7.8 U	19 U	10 U	12 U	12 U	12 U	11 U	16 U
CHLOROFORM	1200	300	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
CHLOROMETHANE		120000	14 U	11 U	11 U	7.8 U	19 U	10 U	12 U	12 U	12 U	11 U	16 U
CIS-1,2-DICHLOROETHENE	630000	78000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
CIS-1,3-DICHLOROPROPENE		1700	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
CYCLOHEXANE		720000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
DICHLORODIFLUOROMETHANE		19000	14 U	11 U	11 U	7.8 U	19 U	10 U	12 U	12 U	12 U	11 U	16 U
ETHYLBENZENE	71000	5700	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
ISOPROPYLBENZENE	27000	220000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
METHYL ACETATE		7800000	14 U	11 U	11 U	7.8 U	19 U	10 U	12 U	12 U	12 U	11 U	16 U
METHYL CYCLOHEXANE			7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
METHYL TERT-BUTYL ETHER	390000	39000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
METHYLENE CHLORIDE	45000	11000	14 U	11 U	0.74 J	7.8 U	19 U	10 U	12 U	12 U	12 U	11 U	16 U
STYRENE	13000	650000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001	CRP-SB04-0002	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001	CRP-SB07-0001-AVG	CRP-SB07-0001-D	CRP-SB08-0001	CRP-SB09-0001
LOCATION ID			CRP-SB01	CRP-SB02	CRP-SB03	CRP-SB04	CRP-SB05	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB09
SAMPLE DATE			05/12/09	05/12/09	05/12/09	05/28/09	05/12/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09	05/12/09
TOP DEPTH			0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM
TETRACHLOROETHENE	12000	570	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
TOLUENE	190000	500000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
TOTAL 1,2-DICHLOROETHENE		70000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	6 U	5.9 U	5.6 U	8 U
TOTAL CHLORINATED ETHENES			8.9 U	6.7 U	7 U	4.9 U	12 U	6.4 U	7.5 U	7.5 U	7.4 U	7 U	10 U
TOTAL CHLORINATED VOCS			8.8 U	6.6 U	0.74 J	4.8 U	12 U	6.3 U	7.4 U	7.3 U	7.3 U	6.8 U	9.8 U
TOTAL XYLENES	110000	60000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
TRANS-1,2-DICHLOROETHENE	1100000	11000	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
TRANS-1,3-DICHLOROPROPENE		1700	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
TRICHLOROETHENE	13000	2800	7.2 U	5.3 U	5.6 U	3.9 U	9.4 U	5.2 U	6 U	5.95 U	5.9 U	5.6 U	8 U
TRICHLOROFLUOROMETHANE		80000	14 U	11 U	11 U	7.8 U	19 U	10 U	12 U	12 U	12 U	11 U	16 U
VINYL CHLORIDE	20	60	14 U	11 U	11 U	7.8 U	19 U	10 U	12 U	12 U	12 U	11 U	16 U
SEMIVOLATILES (UG/KG)													
1,1-BIPHENYL	800	390000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	300 J
2,2'-OXYBIS(1-CHLOROPROPANE)		3500	4000 U	3900 U	3600 U	3700 U	4700 U	3600 U	810 U	2455 U	4100 U	760 U	4100 U
2,4,5-TRICHLOROPHENOL	9000	610000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
2,4,6-TRICHLOROPHENOL	4000	44000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
2,4-DICHLOROPHENOL	30000	18000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
2,4-DIMETHYLPHENOL	1400000	120000	8000 U	7800 U	7200 U	7400 U	9400 U	7300 U	1600 U	4850 U	8100 U	1500 U	8100 U
2,4-DINITROPHENOL	20000	12000	20000 U	20000 U	18000 U	18000 U	23000 U	18000 U	4000 UJ	12000 UJ	20000 U	3800 U	20000 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001	CRP-SB04-0002	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001	CRP-SB07-0001-AVG	CRP-SB07-0001-D	CRP-SB08-0001	CRP-SB09-0001
LOCATION ID			CRP-SB01	CRP-SB02	CRP-SB03	CRP-SB04	CRP-SB05	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB09
SAMPLE DATE			05/12/09	05/12/09	05/12/09	05/28/09	05/12/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09	05/12/09
TOP DEPTH			0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM
2,4-DINITROTOLUENE	900	1600	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 UJ	2000 UJ	380 U	2000 U
2,6-DINITROTOLUENE	61000	6100	2000 U	2000 U	1800 U	1800 U	2300 U	1800 UJ	400 U	1200 U	2000 U	380 U	2000 U
2-CHLORONAPHTHALENE		630000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
2-CHLOROPHENOL	50000	39000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
2-METHYLNAPHTHALENE	29000	31000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	1400 J
2-METHYLPHENOL		310000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
2-NITROANILINE		18000	8000 U	7800 U	7200 U	7400 U	9400 U	7300 U	1600 U	4850 U	8100 U	1500 U	8100 U
2-NITROPHENOL			2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
3,3'-DICHLOROBENZIDINE	1400	1100	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 UJ
3-NITROANILINE			8000 U	7800 U	7200 U	7400 U	9400 U	7300 U	1600 U	4850 U	8100 U	1500 U	8100 U
4,6-DINITRO-2-METHYLPHENOL		610	8000 U	7800 U	7200 U	7400 U	9400 U	7300 U	1600 U	4850 U	8100 U	1500 U	8100 U
4-BROMOPHENYL PHENYL ETHER			2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
4-CHLORO-3-METHYLPHENOL			2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
4-CHLOROANILINE	310000	2400	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
4-CHLOROPHENYL PHENYL ETHER			2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
4-METHYLPHENOL		31000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
4-NITROANILINE		24000	8000 U	7800 U	7200 U	7400 U	9400 U	7300 U	1600 U	4850 U	8100 U	1500 U	8100 U
4-NITROPHENOL	7000		8000 U	7800 U	7200 U	7400 U	9400 U	7300 U	1600 U	4850 U	8100 U	1500 UJ	8100 U
ACENAPHTHENE	29000	340000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	15000

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
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TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001	CRP-SB04-0002	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001	CRP-SB07-0001-AVG	CRP-SB07-0001-D	CRP-SB08-0001	CRP-SB09-0001
LOCATION ID			CRP-SB01	CRP-SB02	CRP-SB03	CRP-SB04	CRP-SB05	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB09
SAMPLE DATE			05/12/09	05/12/09	05/12/09	05/28/09	05/12/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09	05/12/09
TOP DEPTH			0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM
ACENAPHTHYLENE	23000	340000	2000 U	2000 U	1800 U	1800 U	1200 J	1800 U	400 U	1200 U	2000 U	380 U	2000 U
ACETOPHENONE		780000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
ANTHRACENE	29000	1700000	2000 U	2000 U	1800 U	200 J	2800 J	1800 U	400 U	1200 U	2000 U	380 U	16000 J
ATRAZINE		2100	2000 UJ	2000 UJ	1800 UJ	1800 U	2300 UJ	1800 U	400 U	1200 U	2000 U	380 U	2000 UJ
BENZALDEHYDE		780000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
BENZO(A)ANTHRACENE	900	150	1100 J	2000 U	1800 U	960 J	22000 J	240 J	400 U	1200 U	2000 U	380 U	91000 J
BENZO(A)PYRENE	400	15	1700	390 U	360 U	1000	13000 J	360 U	81 U	245.5 U	410 U	76 U	120000
BENZO(B)FLUORANTHENE	900	150	1200 J	2000 U	1800 U	950 J	30000 J	1800 U	400 U	1200 U	2000 U	49 J	130000
BENZO(G,H,I)PERYLENE	800	170000	1300 J	2000 U	1800 U	870 J	7900 J	1800 U	400 U	1200 U	2000 U	380 U	78000
BENZO(K)FLUORANTHENE	900	1500	280 J	2000 U	1800 U	1800 U	13000 J	1800 U	400 U	1200 U	2000 U	380 U	47000
BIS(2-CHLOROETHOXY)METHANE		18000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
BIS(2-CHLOROETHYL)ETHER	600	190	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 UJ	2000 UJ
BUTYL BENZYL PHTHALATE		26000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 UJ
CAPROLACTAM		3100000	2000 UJ	2000 UJ	1800 UJ	1800 U	2300 UJ	1800 U	400 U	1200 U	2000 U	380 U	2000 UJ
CARBAZOLE			4000 U	3900 U	3600 U	3700 U	4700 U	3600 U	810 U	2455 U	4100 U	760 U	11000
CHRYSENE	400	15000	1600 J	390 U	360 U	980	22000 J	220 J	81 U	245.5 U	410 U	76 U	100000 J
DIBENZO(A,H)ANTHRACENE	400	15	400 U	390 U	360 U	370 U	3400 J	360 U	81 U	245.5 U	410 U	76 U	22000 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
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TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001	CRP-SB04-0002	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001	CRP-SB07-0001-AVG	CRP-SB07-0001-D	CRP-SB08-0001	CRP-SB09-0001
LOCATION ID			CRP-SB01	CRP-SB02	CRP-SB03	CRP-SB04	CRP-SB05	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB09
SAMPLE DATE			05/12/09	05/12/09	05/12/09	05/28/09	05/12/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09	05/12/09
TOP DEPTH			0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM
DIBENZOFURAN			2000 U	2000 U	1800 U	1800 U	180 J	1800 U	400 U	1200 U	2000 U	380 U	3500
DIETHYL PHTHALATE	100000	4900000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
DIMETHYL PHTHALATE	1900000		2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
DI-N-BUTYL PHTHALATE	200000	610000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
DI-N-OCTYL PHTHALATE			2000 UJ	2000 UJ	1800 UJ	1800 U	2300 UJ	1800 U	400 UJ	1200 UJ	2000 U	380 U	2000 UJ
FLUORANTHENE	20000	230000	870 J	2000 U	1800 U	2000	39000 J	430 J	400 U	1200 U	2000 U	380 U	110000 J
FLUORENE	28000	230000	2000 U	2000 U	1800 U	1800 U	230 J	1800 U	400 U	1200 U	2000 U	380 U	6100
HEXACHLOROBENZENE	400	300	400 U	390 U	360 U	370 U	470 U	360 U	81 U	245.5 U	410 U	76 U	410 U
HEXACHLOROBUTADIENE	8200	6200	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
HEXACHLOROCYCLOPENTADIENE	10000	37000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 UJ	2000 U
HEXACHLOROETHANE	46000	35000	4000 U	3900 U	3600 U	3700 U	4700 U	3600 U	810 U	2455 U	4100 U	760 U	4100 U
HIGH MOLECULAR WEIGHT PAHS			10950 J	260 J	1400 U	10460 J	199300 J	1410 J	72 J	72 J	1500 U	115 J	899000 J
INDENO(1,2,3-CD)PYRENE	900	150	1400 J	2000 U	1800 U	1200 J	11000 J	1800 U	400 U	1200 U	2000 U	380 U	81000
ISOPHORONE		510000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
LOW MOLECULAR WEIGHT PAHS			620 J	230 J	1800 U	2300 J	7480 J	220 J	31 J	31 J	2000 U	380 U	105200 J
NAPHTHALENE	29000	3900	2000 U	2000 U	1800 U	1800 U	350 J	1800 U	400 U	1200 U	2000 U	380 U	3700
NITROBENZENE		4400	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001	CRP-SB04-0002	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001	CRP-SB07-0001-AVG	CRP-SB07-0001-D	CRP-SB08-0001	CRP-SB09-0001
LOCATION ID			CRP-SB01	CRP-SB02	CRP-SB03	CRP-SB04	CRP-SB05	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB09
SAMPLE DATE			05/12/09	05/12/09	05/12/09	05/28/09	05/12/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09	05/12/09
TOP DEPTH			0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM
N-NITROSO-DI-N-PROPYLAMINE		69	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
N-NITROSODIPHENYLAMINE		99000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
PENTACHLOROPHENOL	2100	3000	8000 U	7800 U	7200 U	7400 U	9400 U	7300 U	1600 U	4850 U	8100 U	1500 U	8100 U
PHENANTHRENE	29000	170000	620 J	230 J	1800 U	2100	2900	220 J	31 J	31 J	2000 U	380 U	63000
PHENOL	30000	1800000	2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
PYRENE	1100	170000	1500 J	260 J	1800 U	2500	38000	520 J	72 J	72 J	2000 U	66 J	120000
TOTAL CHLORINATED VOCS			2000 U	2000 U	1800 U	1800 U	2300 U	1800 U	400 U	1200 U	2000 U	380 U	2000 U
TOTAL PAHS			11570 J	490 J	1500 U	12760 J	206780 J	1630 J	103 J	103 J	1700 U	115 J	1004200 J
PESTICIDES/PCBS (UG/KG)													
4,4'-DDD		2000	1.2 J	0.78 UJ	5.7 UJ	0.74 U	8.1 UJ	3.8 UJ	0.81 U	0.81 U	0.81 U	0.76 U	3.6 J
4,4'-DDE		1400	1.2	0.78 UJ	5.6	0.74 U	0.93 U	2.5	1.3	1.35	1.4	0.76 U	30
4,4'-DDT	21	1700	3.4 J	3700 UJ	24	14 UJ	5.4 J	5.2 J	1.5 J	1.155 J	0.81 J	0.7 UJ	62
ALDRIN		29	0.4 U	0.39 UJ	0.36 U	0.37 U	0.47 U	0.36 U	0.4 U	0.405 U	0.41 U	0.38 U	0.41 U
ALPHA-BHC		77	0.4 U	0.39 UJ	0.36 U	0.37 U	0.47 U	0.93	0.93 UJ	0.67 UJ	0.41 U	0.38 U	0.41 U
ALPHA-CHLORDANE	500	1600	0.4 U	0.39 UJ	0.36 U	0.37 U	0.47 U	2.3	0.4 U	0.405 U	0.41 U	0.38 U	0.41 U
AROCLOR-1016	371	22	20 U	20 U	18 U	18 UJ	23 U	18 U	20 U	20 U	20 U	19 U	20 U
AROCLOR-1221	371	170	20 U	20 U	18 U	18 U	23 U	18 U	20 U	20 U	20 U	19 U	20 U
AROCLOR-1232	371	170	20 U	20 U	18 U	18 U	23 U	18 U	20 U	20 U	20 U	19 U	20 U
AROCLOR-1242	371	220	20 U	20 U	18 U	18 U	23 U	18 U	20 U	20 U	20 U	19 U	20 U
AROCLOR-1248	371	220	20 U	20 U	18 U	18 U	23 U	18 U	20 U	20 U	20 U	19 U	20 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001	CRP-SB04-0002	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001	CRP-SB07-0001-AVG	CRP-SB07-0001-D	CRP-SB08-0001	CRP-SB09-0001
LOCATION ID			CRP-SB01	CRP-SB02	CRP-SB03	CRP-SB04	CRP-SB05	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB09
SAMPLE DATE			05/12/09	05/12/09	05/12/09	05/28/09	05/12/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09	05/12/09
TOP DEPTH			0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM
AROCLOR-1254	371	220	20 U	20 U	18 U	18 U	23 U	18 U	20 U	20 U	20 U	19 U	20 U
AROCLOR-1260	371	220	19	45000 J	74	18 U	14 J	46	11 J	10.35 J	9.7 J	7.2 J	20 U
BETA-BHC		270	0.4 U	0.39 UJ	0.36 U	0.37 U	0.47 U	0.36 U	0.4 U	0.405 U	0.41 U	0.38 U	0.41 U
DELTA-BHC		77	0.4 U	0.39 UJ	0.36 U	0.37 U	0.47 U	0.36 U	0.4 U	0.405 U	0.41 U	0.38 U	0.41 U
DIELDRIN	4.9	30	3 UJ	1100 UJ	0.97	0.74 U	0.93 U	1.1	0.81 U	0.81 U	0.81 U	0.76 U	7 UJ
ENDOSULFAN I		37000	0.4 U	0.39 UJ	0.36 U	0.37 U	0.47 U	1.2	0.4 U	0.405 U	0.41 U	0.38 U	0.41 U
ENDOSULFAN II		37000	0.8 U	480 J	1 UJ	5	0.93 U	0.73 U	0.81 U	0.81 U	0.81 U	0.76 U	0.81 U
ENDOSULFAN SULFATE		37000	0.8 U	1200 UJ	0.72 U	0.74 U	5.9	0.73 U	2.6	2.65	2.7	0.76 U	0.81 U
ENDRIN		1800	0.8 U	150 J	0.33 J	4.2 UJ	0.93 U	0.73 UJ	0.81 UJ	0.81 UJ	0.81 UJ	0.76 UJ	0.81 U
ENDRIN ALDEHYDE		1800	0.8 U	0.78 UJ	0.72 U	1.7 J	0.93 U	0.73 U	0.63 J	0.63 J	0.81 U	0.76 U	0.81 U
ENDRIN KETONE		1800	0.8 U	0.78 UJ	0.72 U	0.74 U	0.93 U	0.73 U	0.81 U	0.81 U	0.81 U	0.87 J	0.81 U
GAMMA-BHC (LINDANE)		520	0.79	0.39 UJ	0.36 U	12	0.47 U	0.36 U	0.9 UJ	0.975 J	1.5	0.38 U	5.3
GAMMA-CHLORDANE	500	1600	0.4 U	0.39 UJ	0.36 U	40 UJ	0.47 U	1.4	0.4 U	0.405 U	0.41 U	0.38 U	0.41 U
HEPTACHLOR		110	0.4 U	0.39 UJ	0.36 U	0.37 U	0.47 U	0.36 UJ	0.4 UJ	0.405 UJ	0.41 UJ	0.38 UJ	0.41 U
HEPTACHLOR EPOXIDE		53	0.4 U	0.39 UJ	1.2 UJ	0.37 U	0.47 U	5 UJ	2.5 UJ	1.455 UJ	0.41 U	0.38 U	0.41 U
METHOXYCHLOR		31000	11 UJ	11000 UJ	0.36 UJ	0.37 U	0.47 UJ	0.36 UJ	0.4 UJ	0.405 UJ	0.41 UJ	1.8 UJ	0.41 UJ
TOTAL AROCLOR	371	220	19	45000 J	74	18 UJ	14 J	46	11 J	10.35 J	9.7 J	7.2 J	20 U
TOTAL DDD/DDE/DDT			5.8 J	1200 UJ	29.6 J	5.2 UJ	5.4 J	7.7 J	2.8 J	2.505 J	2.21 J	0.74 UJ	95.6 J
TOXAPHENE		440	40 U	39 UJ	36 U	37 U	47 U	36 U	40 U	40.5 U	41 U	38 U	41 U
EXPLOSIVES (MG/KG)													
2,4-DINITROTOLUENE	0.9	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
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TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001	CRP-SB04-0002	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001	CRP-SB07-0001-AVG	CRP-SB07-0001-D	CRP-SB08-0001	CRP-SB09-0001
LOCATION ID			CRP-SB01	CRP-SB02	CRP-SB03	CRP-SB04	CRP-SB05	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB09
SAMPLE DATE			05/12/09	05/12/09	05/12/09	05/28/09	05/12/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09	05/12/09
TOP DEPTH			0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM
2,6-DINITROTOLUENE	61	6.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROGLYCERIN	6.1	0.61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)													
ALUMINUM		7700	13400 J	11500 J	9650 J	7520 J	8910 J	5160 J	11300 J	12100 J	12900 J	14600 J	11100 J
ANTIMONY	0.27	3.1	1.8 UJ	2 J	0.86 J	0.83 U	0.64 J	0.43 J	0.92 UJ	1.36 UJ	1.8 UJ	1.7 UJ	2.2 J
ARSENIC	7	0.39	13.6 J	85.5 J	9 J	8.1	8 J	4.6 J	14.8 J	16.2 J	17.6 J	18.8 J	15.1 J
BARIUM	330	1500	25.9 J	51.9 J	23.2 J	24.5 J	34.2 J	27.9 J	18.8 J	18.95 J	19.1 J	12.6 J	37 J
BERYLLIUM	0.4	16	0.33 J	0.38 J	0.28 J	0.3	0.3 J	0.22 J	0.33 J	0.35 J	0.37 J	0.3 J	0.36 J
CADMIUM	0.36	7	0.45	0.9	1.3	0.104 J	0.34 J	0.31	0.22 J	0.26 J	0.3 J	0.19 J	0.5
CALCIUM			2310 J	1550 J	558 J	756 J	667 J	1560 J	829 J	900.5 J	972 J	1280 J	14200 J
CHROMIUM	26	280	19.4 J	17.8 J	45.9 J	10.8 J	13.4 J	18.6 J	14.1 J	15.2 J	16.3 J	19.7 J	13.4 J
COBALT	13	2.3	15.3	18.5	10.4	9.4	7.4	4.4	12.1	11.35	10.6	21.8	8.5
COPPER	28	310	25.2	301	36.8	25.1	34.7	55.3	23.2	24.95	26.7	27.1	22.5
IRON		5500	31200	28200	23900	18900	30600	17600	27400	26950 J	26500 J	33800 J	20100
LEAD	11	400	438 J	999 J	174 J	40.4 J	56.6 J	40.7 J	24 J	24.9 J	25.8 J	13.3 J	572 J
MAGNESIUM			3810 J	3330 J	2760 J	2000 J	2630 J	1530 J	3200 J	3595 J	3990 J	4290 J	4590 J
MANGANESE	220	180	543	465	508	294	357	187	407	409	411	660	311
MERCURY	0.1	0.43	0.03 J	0.058	0.019 J	0.035 U	0.04 J	0.02 J	0.017 J	0.017 J	0.041 U	0.04 U	0.067
NICKEL	38	150	31.3	29.4	23.6	21.3	15.3	15.7	24.1	24.2	24.3	33.2	16.5
POTASSIUM			338 J	422 J	375 J	311 J	471 J	475 J	361 J	373.5 J	386 J	298 J	497 J
SELENIUM	0.52	39	0.44	0.54	0.35 U	0.27 UJ	0.57	0.23 J	0.4 U	0.38 J	0.38 J	0.43	0.63
SILVER	4.2	39	0.18 U	0.17 U	0.21	0.17 UJ	0.21 U	0.16 U	0.18 U	0.18 U	0.18 U	0.17 U	0.1 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
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TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB02-0001	CRP-SB03-0001	CRP-SB04-0002	CRP-SB05-0001	CRP-SB06-0001	CRP-SB07-0001	CRP-SB07-0001-AVG	CRP-SB07-0001-D	CRP-SB08-0001	CRP-SB09-0001
LOCATION ID			CRP-SB01	CRP-SB02	CRP-SB03	CRP-SB04	CRP-SB05	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB09
SAMPLE DATE			05/12/09	05/12/09	05/12/09	05/28/09	05/12/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09	05/12/09
TOP DEPTH			0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM
SODIUM			292 U	291 U	269 U	278 U	347 U	262 U	306 U	305.5 U	305 U	277 U	301 U
THALLIUM	1	0.51	0.47 UJ	0.46 UJ	0.43 UJ	0.44 U	0.56 UJ	0.42 UJ	0.49 UJ	0.49 UJ	0.49 UJ	0.44 UJ	0.48 UJ
VANADIUM	7.8	39	18.8	16.6	19.1	12.6	15.4	11.3	14.5	15.7	16.9	18.2	19.2
ZINC	46	2300	124	197	69.2	57.5 J	198	69.7	58.6	62.35	66.1	75	217
PETROLEUM HYDROCARBONS (MG/KG)													
DIESEL RANGE ORGANICS	500		200	99	150	170	1500	130	65	68	71	68	5600
GASOLINE RANGE ORGANICS	500		3.2 U	3.4 U	2.7 U	2.3 U	6.6 U	3.3 U	3.8 U	3.6 U	3.4 U	2.8 U	3.5 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
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TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB10-0001	CRP-SB11-0001	CRP-SO-ARC1A	CRP-SO-ARC1B	CRP-SO-ARC1C	CRP-SO-ARC2A	CRP-SO-ARC2B	CRP-SO-ARC2C	CRP-SO-ARC3A
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB11	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC3
SAMPLE DATE			05/12/09	05/13/09	05/13/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09
TOP DEPTH			0 FT	0 FT	0 FT	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
VOLATILES (UG/KG)												
1,1,1-TRICHLOROETHANE	540000	900000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	1300	590	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	3600	1100	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	920000	3400	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	200	25000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	20000	8700	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	500	5.6	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	10	34	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	510000	200000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	900	450	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	1900	930	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	430000		7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	20000	2600	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	10000000	2800000	72 UJ	45 UJ	56 UJ	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE			14 U	8.9 U	11 U	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	1200000	530000	14 U	8.9 U	11 U	NA	NA	NA	NA	NA	NA	NA
ACETONE	7800000	6100000	72 UJ	45 UJ	56 UJ	NA	NA	NA	NA	NA	NA	NA
BENZENE	2500	1100	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	10000	280	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
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TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB10-0001	CRP-SB11-0001	CRP-SO-ARC1A	CRP-SO-ARC1B	CRP-SO-ARC1C	CRP-SO-ARC2A	CRP-SO-ARC2B	CRP-SO-ARC2C	CRP-SO-ARC3A
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB11	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC3
SAMPLE DATE			05/12/09	05/13/09	05/13/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09
TOP DEPTH			0 FT	0 FT	0 FT	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
BROMOFORM	81000	61000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	800	790	14 U	8.9 U	11 U	NA	NA	NA	NA	NA	NA	NA
BTEX			7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE		67000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	1500	250	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	40000	31000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	7600	700	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE		1500000	14 U	8.9 U	11 U	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	1200	300	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE		120000	14 U	8.9 U	11 U	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	630000	78000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE		1700	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
CYCLOHEXANE		720000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE		19000	14 U	8.9 U	11 U	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	71000	5700	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
ISOPROPYLBENZENE	27000	220000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
METHYL ACETATE		7800000	14 U	8.9 U	11 U	NA	NA	NA	NA	NA	NA	NA
METHYL CYCLOHEXANE			7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	390000	39000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	45000	11000	14 U	8.9 U	11 U	NA	NA	NA	NA	NA	NA	NA
STYRENE	13000	650000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB10-0001	CRP-SB11-0001	CRP-SO-ARC1A	CRP-SO-ARC1B	CRP-SO-ARC1C	CRP-SO-ARC2A	CRP-SO-ARC2B	CRP-SO-ARC2C	CRP-SO-ARC3A
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB11	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC3
SAMPLE DATE			05/12/09	05/13/09	05/13/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09
TOP DEPTH			0 FT	0 FT	0 FT	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
TETRACHLOROETHENE	12000	570	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
TOLUENE	190000	500000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
TOTAL 1,2-DICHLOROETHENE		70000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
TOTAL CHLORINATED ETHENES			8.9 U	5.6 U	7 U	NA	NA	NA	NA	NA	NA	NA
TOTAL CHLORINATED VOCS			8.8 U	5.5 U	6.8 U	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	110000	60000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	1100000	11000	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE		1700	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	13000	2800	7.2 U	4.5 U	5.6 U	NA	NA	NA	NA	NA	NA	NA
TRICHLOROFLUOROMETHANE		80000	14 U	8.9 U	11 U	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	20	60	14 U	8.9 U	11 U	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)												
1,1-BIPHENYL	800	390000	2000 U	370 U	1800 U	200 U	250 U	200 U	210 U	180 U	200 U	180 U
2,2'-OXYBIS(1-CHLOROPROPANE)		3500	4000 U	740 U	3700 U	340 U	440 U	340 U	360 U	320 U	350 U	320 U
2,4,5-TRICHLOROPHENOL	9000	610000	2000 U	370 U	1800 U	180 U	230 U	180 U	190 U	160 U	180 U	170 U
2,4,6-TRICHLOROPHENOL	4000	44000	2000 U	370 U	1800 U	230 U	300 U	230 U	250 U	220 U	240 U	220 U
2,4-DICHLOROPHENOL	30000	18000	2000 U	370 U	1800 U	120 U	160 U	120 U	130 U	120 U	130 U	120 U
2,4-DIMETHYLPHENOL	1400000	120000	8000 U	1500 U	7400 U	140 U	180 U	140 U	150 U	130 U	140 U	130 U
2,4-DINITROPHENOL	20000	12000	20000 U	3700 U	18000 U	890 U	1100 U	880 U	940 U	820 U	910 U	830 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB10-0001	CRP-SB11-0001	CRP-SO-ARC1A	CRP-SO-ARC1B	CRP-SO-ARC1C	CRP-SO-ARC2A	CRP-SO-ARC2B	CRP-SO-ARC2C	CRP-SO-ARC3A
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB11	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC3
SAMPLE DATE			05/12/09	05/13/09	05/13/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09
TOP DEPTH			0 FT	0 FT	0 FT	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
2,4-DINITROTOLUENE	900	1600	2000 U	370 U	1800 UJ	160 U	210 U	160 U	170 U	150 U	160 U	150 U
2,6-DINITROTOLUENE	61000	6100	2000 U	370 U	1800 U	250 U	320 U	250 U	270 U	230 U	260 U	240 U
2-CHLORONAPHTHALENE		630000	2000 U	370 U	1800 U	210 U	270 U	210 U	230 U	200 U	220 U	200 U
2-CHLOROPHENOL	50000	39000	2000 U	370 U	1800 U	270 U	350 U	270 U	290 U	250 U	280 U	250 U
2-METHYLNAPHTHALENE	29000	31000	2000 U	370 U	1800 U	230 U	300 U	230 U	250 U	220 U	240 U	220 U
2-METHYLPHENOL		310000	2000 U	370 U	1800 U	260 U	330 U	260 U	270 U	240 U	260 U	240 U
2-NITROANILINE		18000	8000 U	1500 U	7400 U	210 U	280 U	210 U	230 U	200 U	220 U	200 U
2-NITROPHENOL			2000 U	370 U	1800 U	150 U	190 U	150 U	160 U	140 U	150 U	140 U
3,3'-DICHLOROBENZIDINE	1400	1100	2000 U	370 U	1800 U	210 U	270 U	210 U	220 U	190 U	210 U	200 U
3-NITROANILINE			8000 U	1500 U	7400 U	310 U	400 U	310 U	330 U	290 U	320 U	290 U
4,6-DINITRO-2-METHYLPHENOL		610	8000 U	1500 U	7400 U	140 U	190 U	140 U	150 U	140 U	150 U	140 U
4-BROMOPHENYL PHENYL ETHER			2000 U	370 U	1800 U	170 U	220 U	170 U	180 U	160 U	180 U	160 U
4-CHLORO-3-METHYLPHENOL			2000 U	370 U	1800 U	180 U	240 U	180 U	200 U	170 U	190 U	170 U
4-CHLOROANILINE	310000	2400	2000 U	370 U	1800 U	320 U	410 U	320 U	340 U	300 U	330 U	300 U
4-CHLOROPHENYL PHENYL ETHER			2000 U	370 U	1800 U	200 U	260 U	200 U	220 U	190 U	210 U	190 U
4-METHYLPHENOL		31000	2000 U	370 U	1800 U	180 U	230 U	180 U	190 U	160 U	180 U	160 U
4-NITROANILINE		24000	8000 U	1500 U	7400 U	670 U	860 U	660 U	710 U	620 U	680 U	620 U
4-NITROPHENOL	7000		8000 U	1500 UJ	7400 U	540 U	700 U	540 U	570 U	500 U	550 U	500 U
ACENAPHTHENE	29000	340000	2000 U	370 U	1800 U	2100 J	630 J	820 J	460 J	260 J	290 J	260 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
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MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB10-0001	CRP-SB11-0001	CRP-SO-ARC1A	CRP-SO-ARC1B	CRP-SO-ARC1C	CRP-SO-ARC2A	CRP-SO-ARC2B	CRP-SO-ARC2C	CRP-SO-ARC3A
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB11	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC3
SAMPLE DATE			05/12/09	05/13/09	05/13/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09
TOP DEPTH			0 FT	0 FT	0 FT	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
ACENAPHTHYLENE	23000	340000	2000 U	370 U	1800 U	130 U	170 U	130 U	140 U	120 U	130 U	120 U
ACETOPHENONE		780000	2000 U	370 U	1800 U	270 U	350 U	270 U	290 U	250 U	280 U	260 U
ANTHRACENE	29000	1700000	2000 U	370 U	150 J	3400 J	1000 J	1300 J	810 J	380 J	500 J	400 J
ATRAZINE		2100	2000 UJ	370 U	1800 U	190 UJ	240 UJ	190 UJ	200 UJ	180 UJ	190 UJ	180 UJ
BENZALDEHYDE		780000	2000 U	370 U	1800 U	370 U	480 U	370 U	390 U	340 U	380 U	340 U
BENZO(A)ANTHRACENE	900	150	1100 J	70 J	640 J	19000 J	5800 J	7400 J	4400 J	2300 J	2900 J	2300 J
BENZO(A)PYRENE	400	15	1700	74 J	940	25000 J	8100 J	10000 J	6100	3400	4300	3600 J
BENZO(B)FLUORANTHENE	900	150	1200 J	120 J	970 J	25000 J	9200 J	11000 J	6300	3700	4900	4100 J
BENZO(G,H,I)PERYLENE	800	170000	1300 J	370 U	850 J	19000 J	4800 J	7100 J	4700	2600	2500	2500 J
BENZO(K)FLUORANTHENE	900	1500	280 J	46 J	1800 U	10000 J	3300 J	4000 J	2200 J	1300 J	1600 J	1500 J
BIS(2-CHLOROETHOXY)METHANE		18000	2000 U	370 U	1800 U	200 U	260 U	200 U	220 U	190 U	210 U	190 U
BIS(2-CHLOROETHYL)ETHER	600	190	2000 U	370 U	1800 U	270 U	350 U	270 U	290 U	250 U	280 U	250 U
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	2000 U	370 UJ	1800 U	240 U	310 U	240 U	260 U	220 U	250 U	220 U
BUTYL BENZYL PHTHALATE		26000	2000 U	370 U	1800 U	200 U	260 U	200 U	210 U	180 U	200 U	180 U
CAPROLACTAM		3100000	2000 UJ	370 U	1800 U	450 UJ	580 UJ	450 UJ	480 UJ	420 UJ	460 UJ	420 UJ
CARBAZOLE			4000 U	740 U	3700 U	2300 J	630 J	830 J	260 U	280 J	310 J	280 J
CHRYSENE	400	15000	1600 J	80 J	660 J	22000 J	7200 J	9300 J	5800 J	2800 J	3700 J	3000 J
DIBENZO(A,H)ANTHRACENE	400	15	400 U	74 U	370 U	5000	2300	2500 J	2100 J	370 UJ	410 UJ	370 UJ

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LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB11	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC3
SAMPLE DATE			05/12/09	05/13/09	05/13/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09
TOP DEPTH			0 FT	0 FT	0 FT	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
DIBENZOFURAN			2000 U	370 U	1800 U	750 J	210 J	300 J	180 J	150 U	170 U	150 U
DIETHYL PHTHALATE	100000	4900000	2000 U	370 U	1800 U	220 U	290 U	220 U	240 U	210 U	230 U	210 U
DIMETHYL PHTHALATE	1900000		2000 U	370 U	1800 U	200 U	260 U	200 U	220 U	190 U	210 U	190 U
DI-N-BUTYL PHTHALATE	200000	610000	2000 U	370 U	1800 U	200 U	260 U	200 U	210 U	190 U	210 U	190 U
DI-N-OCTYL PHTHALATE			2000 UJ	370 U	1800 U	180 UJ	230 UJ	180 UJ	190 UJ	170 UJ	180 UJ	170 UJ
FLUORANTHENE	20000	230000	870 J	140 J	1400 J	24000 J	8400 J	9500 J	6300 J	3600 J	4200 J	3400 J
FLUORENE	28000	230000	2000 U	370 U	1800 U	1200 J	350 J	460 J	180 U	160 U	180 U	160 U
HEXACHLOROBENZENE	400	300	400 U	74 U	370 U	230 U	300 U	230 U	240 U	210 U	240 U	220 U
HEXACHLOROBUTADIENE	8200	6200	2000 U	370 U	1800 U	220 U	280 U	220 U	230 U	200 U	220 U	200 U
HEXACHLOROCYCLOPENTADIENE	10000	37000	2000 U	370 UJ	1800 U	410 U	530 U	400 U	430 U	380 U	420 U	380 U
HEXACHLOROETHANE	46000	35000	4000 U	740 U	3700 U	260 U	340 U	260 U	280 U	240 U	270 U	240 U
HIGH MOLECULAR WEIGHT PAHS			10950 J	690 J	6860 J	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	900	150	1400 J	370 U	1800 U	19000 J	5300 J	7100 J	5000	2900	3000	2900 J
ISOPHORONE		510000	2000 U	370 U	1800 U	190 U	240 U	190 U	200 U	180 U	190 U	180 U
LOW MOLECULAR WEIGHT PAHS			620 J	59 J	1090 J	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	29000	3900	2000 U	370 U	1800 U	520 J	280 U	240 J	230 U	200 U	220 U	200 U
NITROBENZENE		4400	2000 U	370 U	1800 U	230 U	300 U	230 U	240 U	210 U	240 U	220 U

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LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB11	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC3
SAMPLE DATE			05/12/09	05/13/09	05/13/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09
TOP DEPTH			0 FT	0 FT	0 FT	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
N-NITROSO-DI-N-PROPYLAMINE		69	2000 U	370 U	1800 U	360 U	470 U	360 U	390 U	340 U	370 U	340 U
N-NITROSODIPHENYLAMINE		99000	2000 U	370 U	1800 U	920 J	450 J	560 J	420 J	200 U	500 J	200 U
PENTACHLOROPHENOL	2100	3000	8000 U	1500 U	7400 U	220 U	290 U	220 U	240 U	210 U	230 U	210 U
PHENANTHRENE	29000	170000	620 J	59 J	940 J	14000 J	4600 J	5600 J	3600	1900 J	2400	1900 J
PHENOL	30000	1800000	2000 U	370 U	1800 U	240 U	310 U	240 U	250 U	220 U	240 U	220 U
PYRENE	1100	170000	1500 J	160 J	1400 J	28000 J	8100 J	12000 J	6100	3500	4300	4200
TOTAL CHLORINATED VOCS			2000 U	370 U	1800 U	NA	NA	NA	NA	NA	NA	NA
TOTAL PAHS			11570 J	749 J	7950 J	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)												
4,4'-DDD		2000	1.2 J	0.74 U	1.8 J	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE		1400	1.2	9.7 UJ	4.5	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	21	1700	3.4 J	130 UJ	8.6 J	NA	NA	NA	NA	NA	NA	NA
ALDRIN		29	0.4 U	0.37 U	0.37 U	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC		77	0.4 U	0.37 U	0.37 U	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	500	1600	0.4 U	0.37 U	3.8 J	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	371	22	20 U	18 U	18 U	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	371	170	20 U	18 U	18 U	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	371	170	20 U	18 U	18 U	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	371	220	20 U	18 U	18 U	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	371	220	20 U	18 U	18 U	NA	NA	NA	NA	NA	NA	NA

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LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB11	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC3
SAMPLE DATE			05/12/09	05/13/09	05/13/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09
TOP DEPTH			0 FT	0 FT	0 FT	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AROCLOR-1254	371	220	20 U	18 U	18 U	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	371	220	19	1700	58	NA	NA	NA	NA	NA	NA	NA
BETA-BHC		270	0.4 U	0.37 U	0.37 U	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC		77	0.4 U	0.37 U	0.37 U	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	4.9	30	3 UJ	32 J	1.2	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I		37000	0.4 U	0.37 U	0.37 U	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II		37000	0.8 U	15 J	0.31 J	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE		37000	0.8 U	39 UJ	0.74 U	NA	NA	NA	NA	NA	NA	NA
ENDRIN		1800	0.8 U	20 J	0.72 J	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE		1800	0.8 U	15 UJ	0.74 U	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE		1800	0.8 U	0.74 U	0.74 U	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)		520	0.79	0.37 U	0.37 U	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	500	1600	0.4 U	7.8	2.6 J	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR		110	0.4 U	0.37 UJ	0.37 UJ	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE		53	0.4 U	0.37 U	1.4 J	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR		31000	11 UJ	290 UJ	0.37 UJ	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	371	220	19	1700	58	NA	NA	NA	NA	NA	NA	NA
TOTAL DDD/DDE/DDT			5.8 J	47 UJ	14.9 J	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE		440	40 U	37 U	37 U	NA	NA	NA	NA	NA	NA	NA
EXPLOSIVES (MG/KG)												
2,4-DINITROTOLUENE	0.9	1.6	NA	NA	NA	0.16 J	0.13 J	0.13 J	0.098 J	0.3 U	0.3 U	0.3 U

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LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB11	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC3
SAMPLE DATE			05/12/09	05/13/09	05/13/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09
TOP DEPTH			0 FT	0 FT	0 FT	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
2,6-DINITROTOLUENE	61	6.1	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
NITROGLYCERIN	6.1	0.61	NA	NA	NA	16 J	12	11	7.5	7.6	7	1.8 J
METALS (MG/KG)												
ALUMINUM		7700	13400 J	10200 J	8120	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	0.27	3.1	1.8 UJ	8.5 J	0.81 UJ	NA	NA	NA	NA	NA	NA	NA
ARSENIC	7	0.39	13.6 J	24 J	10.3 J	NA	NA	NA	NA	NA	NA	NA
BARIUM	330	1500	25.9 J	24.4 J	23.5 J	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	0.4	16	0.33 J	0.39 J	0.31	NA	NA	NA	NA	NA	NA	NA
CADMIUM	0.36	7	0.45	1.4	0.25 J	NA	NA	NA	NA	NA	NA	NA
CALCIUM			2310 J	413 J	1950 J	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	26	280	19.4 J	15.5 J	14.3 J	NA	NA	NA	NA	NA	NA	NA
COBALT	13	2.3	15.3	17.1	8.8	NA	NA	NA	NA	NA	NA	NA
COPPER	28	310	25.2	579	33.1	NA	NA	NA	NA	NA	NA	NA
IRON		5500	31200	26100 J	19800	NA	NA	NA	NA	NA	NA	NA
LEAD	11	400	438 J	97.3 J	41.7 J	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM			3810 J	2480 J	2330 J	NA	NA	NA	NA	NA	NA	NA
MANGANESE	220	180	543	493	267	NA	NA	NA	NA	NA	NA	NA
MERCURY	0.1	0.43	0.03 J	0.17	0.11	NA	NA	NA	NA	NA	NA	NA
NICKEL	38	150	31.3	35.7	21.9	NA	NA	NA	NA	NA	NA	NA
POTASSIUM			338 J	416 J	436 J	NA	NA	NA	NA	NA	NA	NA
SELENIUM	0.52	39	0.44	0.36 U	0.37	NA	NA	NA	NA	NA	NA	NA
SILVER	4.2	39	0.18 U	0.17 U	0.16 U	NA	NA	NA	NA	NA	NA	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SB10-0001	CRP-SB11-0001	CRP-SO-ARC1A	CRP-SO-ARC1B	CRP-SO-ARC1C	CRP-SO-ARC2A	CRP-SO-ARC2B	CRP-SO-ARC2C	CRP-SO-ARC3A
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB11	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC1	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC2	CRP-SO-ARC3
SAMPLE DATE			05/12/09	05/13/09	05/13/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09	05/14/09
TOP DEPTH			0 FT	0 FT	0 FT	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN	0 IN
BOTTOM DEPTH			1 FT	1 FT	1 FT	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN	2 IN
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
SODIUM			292 U	277 U	270 U	NA	NA	NA	NA	NA	NA	NA
THALLIUM	1	0.51	0.47 UJ	0.44 UJ	0.43 UJ	NA	NA	NA	NA	NA	NA	NA
VANADIUM	7.8	39	18.8	33	14.7	NA	NA	NA	NA	NA	NA	NA
ZINC	46	2300	124	185	87.8	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/KG)												
DIESEL RANGE ORGANICS	500		200	47	72	NA	NA	NA	NA	NA	NA	NA
GASOLINE RANGE ORGANICS	500		3.2 U	2.3 U	2.9 U	NA	NA	NA	NA	NA	NA	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SO-ARC3B	CRP-SO-ARC3C	CRP-SS01-0006	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612	CRP-TP05-0102
LOCATION ID			CRP-SB01	CRP-SO-ARC3	CRP-SO-ARC3	CRP-SS01	CRP-SS01	CRP-SS02	CRP-SS02	CRP-TP05
SAMPLE DATE			05/12/09	05/14/09	05/14/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09
TOP DEPTH			0 FT	0 IN	0 IN	0 FT	0.5 FT	0 FT	0.5 FT	1 FT
BOTTOM DEPTH			1 FT	2 IN	2 IN	0.5 FT	1 FT	0.5 FT	1 FT	2 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM
VOLATILES (UG/KG)										
1,1,1-TRICHLOROETHANE	540000	900000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
1,1,2,2-TETRACHLOROETHANE	1300	590	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
1,1,2-TRICHLOROETHANE	3600	1100	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
1,1-DICHLOROETHANE	920000	3400	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
1,1-DICHLOROETHENE	200	25000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
1,2,4-TRICHLOROBENZENE	20000	8700	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
1,2-DIBROMO-3-CHLOROPROPANE	500	5.6	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
1,2-DIBROMOETHANE	10	34	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
1,2-DICHLOROBENZENE	510000	200000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
1,2-DICHLOROETHANE	900	450	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
1,2-DICHLOROPROPANE	1900	930	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
1,3-DICHLOROBENZENE	430000		7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
1,4-DICHLOROBENZENE	20000	2600	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
2-BUTANONE	10000000	2800000	72 UJ	NA	NA	45 UJ	51 UJ	56 UJ	53 UJ	49 UJ
2-HEXANONE			14 U	NA	NA	8.9 U	10 U	11 U	11 U	9.8 U
4-METHYL-2-PENTANONE	1200000	530000	14 U	NA	NA	8.9 U	10 U	11 U	11 U	9.8 U
ACETONE	7800000	6100000	72 UJ	NA	NA	7.2 J	51 UJ	56 UJ	53 UJ	49 UJ
BENZENE	2500	1100	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
BROMODICHLOROMETHANE	10000	280	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SO-ARC3B	CRP-SO-ARC3C	CRP-SS01-0006	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612	CRP-TP05-0102
LOCATION ID			CRP-SB01	CRP-SO-ARC3	CRP-SO-ARC3	CRP-SS01	CRP-SS01	CRP-SS02	CRP-SS02	CRP-TP05
SAMPLE DATE			05/12/09	05/14/09	05/14/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09
TOP DEPTH			0 FT	0 IN	0 IN	0 FT	0.5 FT	0 FT	0.5 FT	1 FT
BOTTOM DEPTH			1 FT	2 IN	2 IN	0.5 FT	1 FT	0.5 FT	1 FT	2 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM
BROMOFORM	81000	61000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
BROMOMETHANE	800	790	14 U	NA	NA	8.9 U	10 U	11 U	11 U	9.8 U
BTEX			7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
CARBON DISULFIDE		67000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
CARBON TETRACHLORIDE	1500	250	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
CHLOROBENZENE	40000	31000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
CHLORODIBROMOMETHANE	7600	700	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
CHLOROETHANE		1500000	14 U	NA	NA	8.9 U	10 U	11 U	11 U	9.8 U
CHLOROFORM	1200	300	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
CHLOROMETHANE		120000	14 U	NA	NA	8.9 U	10 U	11 U	11 U	9.8 U
CIS-1,2-DICHLOROETHENE	630000	78000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
CIS-1,3-DICHLOROPROPENE		1700	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
CYCLOHEXANE		720000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
DICHLORODIFLUOROMETHANE		19000	14 U	NA	NA	8.9 U	10 U	11 U	11 U	9.8 U
ETHYLBENZENE	71000	5700	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
ISOPROPYLBENZENE	27000	220000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
METHYL ACETATE		7800000	14 U	NA	NA	8.9 U	10 U	11 U	11 U	9.8 U
METHYL CYCLOHEXANE			7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
METHYL TERT-BUTYL ETHER	390000	39000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
METHYLENE CHLORIDE	45000	11000	14 U	NA	NA	8.9 U	10 U	11 U	11 U	9.8 U
STYRENE	13000	650000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SO-ARC3B	CRP-SO-ARC3C	CRP-SS01-0006	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612	CRP-TP05-0102
LOCATION ID			CRP-SB01	CRP-SO-ARC3	CRP-SO-ARC3	CRP-SS01	CRP-SS01	CRP-SS02	CRP-SS02	CRP-TP05
SAMPLE DATE			05/12/09	05/14/09	05/14/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09
TOP DEPTH			0 FT	0 IN	0 IN	0 FT	0.5 FT	0 FT	0.5 FT	1 FT
BOTTOM DEPTH			1 FT	2 IN	2 IN	0.5 FT	1 FT	0.5 FT	1 FT	2 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM
TETRACHLOROETHENE	12000	570	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	1.1 J	4.9 U
TOLUENE	190000	500000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
TOTAL 1,2-DICHLOROETHENE		70000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
TOTAL CHLORINATED ETHENES			8.9 U	NA	NA	5.6 U	6.3 U	7 U	1.1 J	6.1 U
TOTAL CHLORINATED VOCS			8.8 U	NA	NA	5.5 U	6.2 U	6.8 U	1.1 J	6 U
TOTAL XYLENES	110000	60000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
TRANS-1,2-DICHLOROETHENE	1100000	11000	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
TRANS-1,3-DICHLOROPROPENE		1700	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
TRICHLOROETHENE	13000	2800	7.2 U	NA	NA	4.5 U	5.1 U	5.6 U	5.3 U	4.9 U
TRICHLOROFLUOROMETHANE		80000	14 U	NA	NA	8.9 U	10 U	11 U	11 U	9.8 U
VINYL CHLORIDE	20	60	14 U	NA	NA	8.9 U	10 U	11 U	11 U	9.8 U
SEMIVOLATILES (UG/KG)										
1,1-BIPHENYL	800	390000	2000 U	210 U	180 U	1900 U	1800 U	420 U	2000 U	390 U
2,2'-OXYBIS(1-CHLOROPROPANE)		3500	4000 U	370 U	320 U	3800 U	3700 U	830 U	4000 U	780 U
2,4,5-TRICHLOROPHENOL	9000	610000	2000 U	190 U	160 U	1900 U	1800 U	420 U	2000 U	390 U
2,4,6-TRICHLOROPHENOL	4000	44000	2000 U	250 U	210 U	1900 U	1800 U	420 U	2000 U	390 U
2,4-DICHLOROPHENOL	30000	18000	2000 U	140 U	120 U	1900 U	1800 U	420 U	2000 U	390 U
2,4-DIMETHYLPHENOL	1400000	120000	8000 U	150 U	130 U	7500 U	7400 U	1700 U	7900 U	1600 U
2,4-DINITROPHENOL	20000	12000	20000 U	960 U	820 U	19000 U	18000 U	4200 U	20000 U	3900 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SO-ARC3B	CRP-SO-ARC3C	CRP-SS01-0006	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612	CRP-TP05-0102
LOCATION ID			CRP-SB01	CRP-SO-ARC3	CRP-SO-ARC3	CRP-SS01	CRP-SS01	CRP-SS02	CRP-SS02	CRP-TP05
SAMPLE DATE			05/12/09	05/14/09	05/14/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09
TOP DEPTH			0 FT	0 IN	0 IN	0 FT	0.5 FT	0 FT	0.5 FT	1 FT
BOTTOM DEPTH			1 FT	2 IN	2 IN	0.5 FT	1 FT	0.5 FT	1 FT	2 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM
2,4-DINITROTOLUENE	900	1600	2000 U	170 U	150 U	1900 UJ	1800 UJ	420 U	2000 UJ	390 U
2,6-DINITROTOLUENE	61000	6100	2000 U	270 U	230 U	1900 U	1800 U	420 UJ	2000 U	390 U
2-CHLORONAPHTHALENE		630000	2000 U	230 U	200 U	1900 U	1800 U	420 U	2000 U	390 U
2-CHLOROPHENOL	50000	39000	2000 U	290 U	250 U	1900 U	1800 U	420 U	2000 U	390 U
2-METHYLNAPHTHALENE	29000	31000	2000 U	250 U	220 U	580 J	1800 U	420 U	2000 U	390 U
2-METHYLPHENOL		310000	2000 U	280 U	240 U	1900 U	1800 U	420 U	2000 U	390 U
2-NITROANILINE		18000	8000 U	230 U	200 U	7500 U	7400 U	1700 U	7900 U	1600 U
2-NITROPHENOL			2000 U	160 U	140 U	1900 U	1800 U	420 U	2000 U	390 U
3,3'-DICHLOROBENZIDINE	1400	1100	2000 U	230 U	190 U	1900 U	1800 U	420 U	2000 U	390 U
3-NITROANILINE			8000 U	340 U	290 U	7500 U	7400 U	1700 U	7900 U	1600 U
4,6-DINITRO-2-METHYLPHENOL		610	8000 U	160 U	130 U	7500 U	7400 U	1700 U	7900 U	1600 U
4-BROMOPHENYL PHENYL ETHER			2000 U	180 U	160 U	1900 U	1800 U	420 U	2000 U	390 U
4-CHLORO-3-METHYLPHENOL			2000 U	200 U	170 U	1900 U	1800 U	420 U	2000 U	390 U
4-CHLOROANILINE	310000	2400	2000 U	340 U	300 U	1900 U	1800 U	420 U	2000 U	390 U
4-CHLOROPHENYL PHENYL ETHER			2000 U	220 U	190 U	1900 U	1800 U	420 U	2000 U	390 U
4-METHYLPHENOL		31000	2000 U	190 U	160 U	1900 U	1800 U	420 U	2000 U	390 U
4-NITROANILINE		24000	8000 U	720 U	620 U	7500 U	7400 U	1700 U	7900 U	1600 U
4-NITROPHENOL	7000		8000 U	580 U	500 U	7500 U	7400 U	1700 UJ	7900 U	1600 UJ
ACENAPHTHENE	29000	340000	2000 U	190 U	160 U	1900 U	1800 U	420 U	2000 U	390 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SO-ARC3B	CRP-SO-ARC3C	CRP-SS01-0006	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612	CRP-TP05-0102
LOCATION ID			CRP-SB01	CRP-SO-ARC3	CRP-SO-ARC3	CRP-SS01	CRP-SS01	CRP-SS02	CRP-SS02	CRP-TP05
SAMPLE DATE			05/12/09	05/14/09	05/14/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09
TOP DEPTH			0 FT	0 IN	0 IN	0 FT	0.5 FT	0 FT	0.5 FT	1 FT
BOTTOM DEPTH			1 FT	2 IN	2 IN	0.5 FT	1 FT	0.5 FT	1 FT	2 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM
ACENAPHTHYLENE	23000	340000	2000 U	140 U	120 U	1900 U	1800 U	420 U	2000 U	390 U
ACETOPHENONE		780000	2000 U	290 U	250 U	1900 U	1800 U	420 U	2000 U	390 U
ANTHRACENE	29000	1700000	2000 U	200 U	170 U	1900 U	1800 U	420 U	2000 U	390 U
ATRAZINE		2100	2000 UJ	200 UJ	170 UJ	1900 U	1800 U	420 U	2000 U	390 U
BENZALDEHYDE		780000	2000 U	400 U	340 U	1900 U	1800 U	420 U	2000 U	390 U
BENZO(A)ANTHRACENE	900	150	1100 J	1300 J	660 J	1900 U	1800 U	420 U	2000 U	390 U
BENZO(A)PYRENE	400	15	1700	2100 J	1300 J	380 U	370 U	83 U	400 U	78 U
BENZO(B)FLUORANTHENE	900	150	1200 J	2200 J	190 UJ	1900 U	1800 U	420 U	2000 U	44 J
BENZO(G,H,I)PERYLENE	800	170000	1300 J	1500 J	1000 J	1900 U	1800 U	420 U	2000 U	390 U
BENZO(K)FLUORANTHENE	900	1500	280 J	500 J	240 UJ	1900 U	1800 U	420 U	2000 U	390 U
BIS(2-CHLOROETHOXY)METHANE		18000	2000 U	220 U	190 U	1900 U	1800 U	420 U	2000 U	390 U
BIS(2-CHLOROETHYL)ETHER	600	190	2000 U	290 U	250 U	1900 U	1800 U	420 U	2000 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	2000 U	260 U	220 U	1900 U	1800 U	420 UJ	2000 U	390 UJ
BUTYL BENZYL PHTHALATE		26000	2000 U	210 U	180 U	1900 U	1800 U	420 U	2000 U	390 U
CAPROLACTAM		3100000	2000 UJ	480 UJ	420 UJ	1900 U	1800 U	420 U	2000 U	390 U
CARBAZOLE			4000 U	260 U	220 U	3800 U	3700 U	830 U	4000 U	780 U
CHRYSENE	400	15000	1600 J	1700 J	910 J	380 U	370 U	83 U	400 U	78 U
DIBENZO(A,H)ANTHRACENE	400	15	400 U	430 UJ	370 UJ	380 U	370 U	83 U	400 U	78 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SO-ARC3B	CRP-SO-ARC3C	CRP-SS01-0006	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612	CRP-TP05-0102
LOCATION ID			CRP-SB01	CRP-SO-ARC3	CRP-SO-ARC3	CRP-SS01	CRP-SS01	CRP-SS02	CRP-SS02	CRP-TP05
SAMPLE DATE			05/12/09	05/14/09	05/14/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09
TOP DEPTH			0 FT	0 IN	0 IN	0 FT	0.5 FT	0 FT	0.5 FT	1 FT
BOTTOM DEPTH			1 FT	2 IN	2 IN	0.5 FT	1 FT	0.5 FT	1 FT	2 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM
DIBENZOFURAN			2000 U	180 U	150 U	180 J	1800 U	420 U	2000 U	390 U
DIETHYL PHTHALATE	100000	4900000	2000 U	240 U	210 U	1900 U	1800 U	420 U	2000 U	390 U
DIMETHYL PHTHALATE	1900000		2000 U	220 U	190 U	1900 U	1800 U	420 U	2000 U	390 U
DI-N-BUTYL PHTHALATE	200000	610000	2000 U	220 U	190 U	1900 U	1800 U	420 U	2000 U	390 U
DI-N-OCTYL PHTHALATE			2000 UJ	190 UJ	160 UJ	1900 U	1800 U	420 U	2000 U	390 U
FLUORANTHENE	20000	230000	870 J	1800 J	910 J	1900 U	1800 U	420 U	2000 U	390 U
FLUORENE	28000	230000	2000 U	190 U	160 U	1900 U	1800 U	420 U	2000 U	390 U
HEXACHLOROBENZENE	400	300	400 U	250 U	210 U	380 U	370 U	83 U	400 U	78 U
HEXACHLOROBUTADIENE	8200	6200	2000 U	240 U	200 U	1900 U	1800 U	420 U	2000 U	390 U
HEXACHLOROCYCLOPENTADIENE	10000	37000	2000 U	440 U	380 U	1900 U	1800 U	420 UJ	2000 U	390 UJ
HEXACHLOROETHANE	46000	35000	4000 U	280 U	240 U	3800 U	3700 U	830 U	4000 U	780 U
HIGH MOLECULAR WEIGHT PAHS			10950 J	NA	NA	280 J	1400 U	320 U	1500 U	117 J
INDENO(1,2,3-CD)PYRENE	900	150	1400 J	330 UJ	280 UJ	1900 U	1800 U	420 U	2000 U	390 U
ISOPHORONE		510000	2000 U	200 U	170 U	1900 U	1800 U	420 U	2000 U	390 U
LOW MOLECULAR WEIGHT PAHS			620 J	NA	NA	1360 J	1800 U	420 U	2000 U	390 U
NAPHTHALENE	29000	3900	2000 U	230 U	200 U	250 J	1800 U	420 U	2000 U	390 U
NITROBENZENE		4400	2000 U	250 U	210 U	1900 U	1800 U	420 U	2000 U	390 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SO-ARC3B	CRP-SO-ARC3C	CRP-SS01-0006	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612	CRP-TP05-0102
LOCATION ID			CRP-SB01	CRP-SO-ARC3	CRP-SO-ARC3	CRP-SS01	CRP-SS01	CRP-SS02	CRP-SS02	CRP-TP05
SAMPLE DATE			05/12/09	05/14/09	05/14/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09
TOP DEPTH			0 FT	0 IN	0 IN	0 FT	0.5 FT	0 FT	0.5 FT	1 FT
BOTTOM DEPTH			1 FT	2 IN	2 IN	0.5 FT	1 FT	0.5 FT	1 FT	2 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM
N-NITROSO-DI-N-PROPYLAMINE		69	2000 U	390 U	340 U	1900 U	1800 U	420 U	2000 U	390 U
N-NITROSODIPHENYLAMINE		99000	2000 U	230 U	200 U	1900 U	1800 U	420 U	2000 U	390 U
PENTACHLOROPHENOL	2100	3000	8000 U	240 U	210 U	7500 U	7400 U	1700 U	7900 U	1600 U
PHENANTHRENE	29000	170000	620 J	920 J	450 J	530 J	1800 U	420 U	2000 U	390 U
PHENOL	30000	1800000	2000 U	260 U	220 U	1900 U	1800 U	420 U	2000 U	390 U
PYRENE	1100	170000	1500 J	2300 J	1300 J	280 J	1800 U	420 U	2000 U	73 J
TOTAL CHLORINATED VOCS			2000 U	NA	NA	1900 U	1800 U	420 U	2000 U	390 U
TOTAL PAHS			11570 J	NA	NA	1640 J	1500 U	360 U	1700 U	117 J
PESTICIDES/PCBS (UG/KG)										
4,4'-DDD		2000	1.2 J	NA	NA	1700 UJ	520 UJ	0.83 U	0.79 U	0.78 U
4,4'-DDE		1400	1.2	NA	NA	38 J	38 J	0.83 U	0.6 J	3.8 UJ
4,4'-DDT	21	1700	3.4 J	NA	NA	0.75 UJ	760 UJ	2.8 UJ	16 UJ	13 UJ
ALDRIN		29	0.4 U	NA	NA	0.38 U	0.37 U	0.42 U	0.4 U	0.39
ALPHA-BHC		77	0.4 U	NA	NA	0.38 U	0.37 U	0.32 J	0.4 U	0.39 U
ALPHA-CHLORDANE	500	1600	0.4 U	NA	NA	0.38 U	0.37 U	0.42 U	0.4 U	0.39 U
AROCLOR-1016	371	22	20 U	NA	NA	19 U	18 U	21 U	20 U	19 U
AROCLOR-1221	371	170	20 U	NA	NA	19 U	18 U	21 U	20 U	19 U
AROCLOR-1232	371	170	20 U	NA	NA	19 U	18 U	21 U	20 U	19 U
AROCLOR-1242	371	220	20 U	NA	NA	19 U	18 U	21 U	20 U	19 U
AROCLOR-1248	371	220	20 U	NA	NA	19 U	18 U	21 U	20 U	19 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SO-ARC3B	CRP-SO-ARC3C	CRP-SS01-0006	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612	CRP-TP05-0102
LOCATION ID			CRP-SB01	CRP-SO-ARC3	CRP-SO-ARC3	CRP-SS01	CRP-SS01	CRP-SS02	CRP-SS02	CRP-TP05
SAMPLE DATE			05/12/09	05/14/09	05/14/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09
TOP DEPTH			0 FT	0 IN	0 IN	0 FT	0.5 FT	0 FT	0.5 FT	1 FT
BOTTOM DEPTH			1 FT	2 IN	2 IN	0.5 FT	1 FT	0.5 FT	1 FT	2 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM
AROCLOR-1254	371	220	20 U	NA	NA	19 U	18 U	21 U	20 U	19 U
AROCLOR-1260	371	220	19	NA	NA	25000	7000	29	160	83
BETA-BHC		270	0.4 U	NA	NA	0.38 U	0.37 U	0.42 U	0.4 U	0.39 U
DELTA-BHC		77	0.4 U	NA	NA	0.38 U	0.37 U	0.42 U	0.4 U	0.39 U
DIELDRIN	4.9	30	3 UJ	NA	NA	190 J	40 J	0.5 J	0.83 J	4.8 J
ENDOSULFAN I		37000	0.4 U	NA	NA	0.38 U	0.37 U	0.42 U	0.4 U	0.39 U
ENDOSULFAN II		37000	0.8 U	NA	NA	170	44 J	0.83 U	1.1	3.7 UJ
ENDOSULFAN SULFATE		37000	0.8 U	NA	NA	480 UJ	170 UJ	0.83 U	0.6 J	0.78 U
ENDRIN		1800	0.8 U	NA	NA	200 J	54 J	0.83 UJ	0.79 UJ	5.7 J
ENDRIN ALDEHYDE		1800	0.8 U	NA	NA	0.75 U	0.74 U	0.83 U	0.79 U	4.4 UJ
ENDRIN KETONE		1800	0.8 U	NA	NA	0.75 U	0.74 U	3.2 UJ	20 UJ	0.78 U
GAMMA-BHC (LINDANE)		520	0.79	NA	NA	0.38 U	0.37 U	1.6	0.92	0.39 U
GAMMA-CHLORDANE	500	1600	0.4 U	NA	NA	13	0.37 U	0.42 U	0.4 U	2.8 J
HEPTACHLOR		110	0.4 U	NA	NA	0.38 UJ	0.37 UJ	0.42 UJ	0.4 UJ	0.39 UJ
HEPTACHLOR EPOXIDE		53	0.4 U	NA	NA	0.38 U	0.37 U	0.42 U	1.1 J	3.1 UJ
METHOXYCHLOR		31000	11 UJ	NA	NA	320 UJ	110 UJ	0.42 UJ	0.4 UJ	0.39 UJ
TOTAL AROCLOR	371	220	19	NA	NA	25000	7000	29	160	83
TOTAL DDD/DDE/DDT			5.8 J	NA	NA	38 J	38 J	1.5 UJ	0.6 J	5.9 UJ
TOXAPHENE		440	40 U	NA	NA	38 U	37 U	42 U	40 U	39 U
EXPLOSIVES (MG/KG)										
2,4-DINITROTOLUENE	0.9	1.6	NA	0.3 U	0.3 U	NA	NA	NA	NA	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SO-ARC3B	CRP-SO-ARC3C	CRP-SS01-0006	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612	CRP-TP05-0102
LOCATION ID			CRP-SB01	CRP-SO-ARC3	CRP-SO-ARC3	CRP-SS01	CRP-SS01	CRP-SS02	CRP-SS02	CRP-TP05
SAMPLE DATE			05/12/09	05/14/09	05/14/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09
TOP DEPTH			0 FT	0 IN	0 IN	0 FT	0.5 FT	0 FT	0.5 FT	1 FT
BOTTOM DEPTH			1 FT	2 IN	2 IN	0.5 FT	1 FT	0.5 FT	1 FT	2 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM
2,6-DINITROTOLUENE	61	6.1	NA	0.5 U	0.5 U	NA	NA	NA	NA	NA
NITROGLYCERIN	6.1	0.61	NA	1.4 J	1.2 J	NA	NA	NA	NA	NA
METALS (MG/KG)										
ALUMINUM		7700	13400 J	NA	NA	11200 J	9440 J	12700 J	14900 J	11900 J
ANTIMONY	0.27	3.1	1.8 UJ	NA	NA	0.66 J	1.6 UJ	1.9 UJ	1.8 UJ	1.7 UJ
ARSENIC	7	0.39	13.6 J	NA	NA	12 J	11.2 J	17.6 J	18.7 J	27.5 J
BARIUM	330	1500	25.9 J	NA	NA	20.8 J	22.1 J	21 J	14.6 J	19 J
BERYLLIUM	0.4	16	0.33 J	NA	NA	0.3 J	0.36 J	0.36 J	0.28 J	0.37 J
CADMIUM	0.36	7	0.45	NA	NA	0.96	0.54	0.33	0.3	0.35
CALCIUM			2310 J	NA	NA	1110 J	507 J	2000 J	1160 J	531 J
CHROMIUM	26	280	19.4 J	NA	NA	17.7 J	20.1 J	17.1 J	20.3 J	15.6 J
COBALT	13	2.3	15.3	NA	NA	13.2	14.2	21.3	15.8	14.5
COPPER	28	310	25.2	NA	NA	35.7	36.1	24.5	20.1	49.1
IRON		5500	31200	NA	NA	29700 J	29500 J	28600 J	32000 J	29300 J
LEAD	11	400	438 J	NA	NA	149 J	160 J	13.8 J	15 J	30.2 J
MAGNESIUM			3810 J	NA	NA	3410 J	3090 J	3640 J	4590 J	3150 J
MANGANESE	220	180	543	NA	NA	494	446	570	443	502
MERCURY	0.1	0.43	0.03 J	NA	NA	0.14	0.036 U	0.018 J	0.041 U	0.04 U
NICKEL	38	150	31.3	NA	NA	31.2	28.3	30.5	32.5	32.6
POTASSIUM			338 J	NA	NA	280 J	367 J	422 J	215 J	362 J
SELENIUM	0.52	39	0.44	NA	NA	0.42	0.35 U	0.34 J	0.27 J	0.37 U
SILVER	4.2	39	0.18 U	NA	NA	0.17 U	0.16 U	0.19 U	0.18 U	0.17 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-1
ANALYTICAL RESULTS - SURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0001	CRP-SO-ARC3B	CRP-SO-ARC3C	CRP-SS01-0006	CRP-SS01-0612	CRP-SS02-0006	CRP-SS02-0612	CRP-TP05-0102
LOCATION ID			CRP-SB01	CRP-SO-ARC3	CRP-SO-ARC3	CRP-SS01	CRP-SS01	CRP-SS02	CRP-SS02	CRP-TP05
SAMPLE DATE			05/12/09	05/14/09	05/14/09	05/13/09	05/13/09	05/13/09	05/13/09	05/13/09
TOP DEPTH			0 FT	0 IN	0 IN	0 FT	0.5 FT	0 FT	0.5 FT	1 FT
BOTTOM DEPTH			1 FT	2 IN	2 IN	0.5 FT	1 FT	0.5 FT	1 FT	2 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM
SODIUM			292 U	NA	NA	281 U	270 U	67.5 J	297 U	286 U
THALLIUM	1	0.51	0.47 UJ	NA	NA	0.45 UJ	0.43 UJ	0.5 UJ	0.48 UJ	0.46 UJ
VANADIUM	7.8	39	18.8	NA	NA	18.8	15.7	16.5	17	24.3
ZINC	46	2300	124	NA	NA	156	106	78.3	74.1	88.6
PETROLEUM HYDROCARBONS (MG/KG)										
DIESEL RANGE ORGANICS	500		200	NA	NA	170	51	77	50	32
GASOLINE RANGE ORGANICS	500		3.2 U	NA	NA	2.7 U	2.7 U	3 U	2.6 U	2.5 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628	CRP-SB02-0810	CRP-SB02-0810-AVG	CRP-SB02-0810-D	CRP-SB02-1618	CRP-SB02-2426	CRP-SB03-0810	CRP-SB03-1618	CRP-SB03-2830
LOCATION ID			CRP-SB01	CRP-SB01	CRP-SB01	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB03	CRP-SB03	CRP-SB03
SAMPLE DATE			05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/20/09	05/20/09	05/20/09	05/21/09	05/21/09	05/21/09
TOP DEPTH			6 FT	20 FT	26 FT	8 FT	8 FT	8 FT	16 FT	24 FT	8 FT	16 FT	28 FT
BOTTOM DEPTH			8 FT	22 FT	28 FT	10 FT	10 FT	10 FT	18 FT	26 FT	10 FT	18 FT	30 FT
SACODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
VOLATILES (UG/KG)													
1,1,1-TRICHLOROETHANE	540000	900000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
1,1,2,2-TETRACHLOROETHANE	1300	590	7.3 UJ	4.2 UJ	4.1 UJ	4.4 U	4.45 U	4.5 U	3.7 UJ	4 UJ	4.8 U	3.7 UJ	4 UJ
1,1,2-TRICHLOROETHANE	3600	1100	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
1,1-DICHLOROETHANE	920000	3400	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U
1,1-DICHLOROETHENE	200	25000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
1,2,4-TRICHLOROBENZENE	20000	8700	7.3 UJ	4.2 UJ	4.1 UJ	4.4 U	4.45 U	4.5 U	3.7 UJ	4 UJ	4.8 UJ	3.7 UJ	4 UJ
1,2-DIBROMO-3-CHLOROPROPANE	500	5.6	7.3 UJ	4.2 UJ	4.1 UJ	4.4 U	4.45 U	4.5 U	3.7 UJ	4 UJ	4.8 U	3.7 UJ	4 UJ
1,2-DIBROMOETHANE	10	34	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U
1,2-DICHLOROBENZENE	510000	200000	7.3 UJ	4.2 UJ	4.1 UJ	4.4 U	4.45 U	4.5 U	3.7 UJ	4 UJ	4.8 UJ	3.7 UJ	4 UJ
1,2-DICHLOROETHANE	900	450	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U
1,2-DICHLOROPROPANE	1900	930	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
1,3-DICHLOROBENZENE	430000		7.3 UJ	4.2 UJ	4.1 UJ	4.4 U	4.45 U	4.5 U	3.7 UJ	4 UJ	4.8 UJ	3.7 UJ	4 UJ
1,4-DICHLOROBENZENE	20000	2600	7.3 UJ	4.2 UJ	4.1 UJ	4.4 U	4.45 U	4.5 U	3.7 UJ	4 UJ	4.8 UJ	3.7 UJ	4 UJ
2-BUTANONE	10000000	2800000	73 UJ	42 U	41 U	44 U	44.5 U	45 U	37 UJ	40 U	48 U	37 U	40 U
2-HEXANONE			15 UJ	8.4 U	8.2 U	8.8 U	8.9 U	9 U	7.4 UJ	8 U	9.6 UJ	7.4 U	8 U
4-METHYL-2-PENTANONE	1200000	530000	15 UJ	8.4 U	8.2 U	8.8 U	8.9 U	9 U	7.4 UJ	8 U	9.6 U	7.4 U	8 U
ACETONE	7800000	6100000	73 UJ	42 U	5.4 J	44 U	44.5 U	45 U	37 UJ	5.3 J	48 U	37 U	40 U
BENZENE	2500	1100	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
BROMODICHLOROMETHANE	10000	280	7.3 UJ	4.2 U	4.1 U	0.39 J	0.39 J	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628	CRP-SB02-0810	CRP-SB02-0810-AVG	CRP-SB02-0810-D	CRP-SB02-1618	CRP-SB02-2426	CRP-SB03-0810	CRP-SB03-1618	CRP-SB03-2830
LOCATION ID			CRP-SB01	CRP-SB01	CRP-SB01	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB03	CRP-SB03	CRP-SB03
SAMPLE DATE			05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/20/09	05/20/09	05/20/09	05/21/09	05/21/09	05/21/09
TOP DEPTH			6 FT	20 FT	26 FT	8 FT	8 FT	8 FT	16 FT	24 FT	8 FT	16 FT	28 FT
BOTTOM DEPTH			8 FT	22 FT	28 FT	10 FT	10 FT	10 FT	18 FT	26 FT	10 FT	18 FT	30 FT
SACODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
BROMOFORM	81000	61000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
BROMOMETHANE	800	790	15 UJ	8.4 U	8.2 U	8.8 U	8.9 U	9 U	7.4 UJ	8 U	9.6 U	7.4 U	8 U
BTEX			7.3 UJ	4.2 U	4.1 U	4.4 U	4.4 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U
CARBON DISULFIDE		67000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
CARBON TETRACHLORIDE	1500	250	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
CHLOROBENZENE	40000	31000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U
CHLORODIBROMOMETHANE	7600	700	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
CHLOROETHANE		1500000	15 UJ	8.4 U	8.2 U	8.8 U	8.9 U	9 U	7.4 UJ	8 U	9.6 U	7.4 U	8 U
CHLOROFORM	1200	300	7.3 UJ	4.2 U	4.1 U	1 J	1 J	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U
CHLOROMETHANE		120000	15 UJ	8.4 U	8.2 U	8.8 U	8.9 U	9 U	7.4 UJ	8 U	9.6 U	7.4 U	8 U
CIS-1,2-DICHLOROETHENE	630000	78000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
CIS-1,3-DICHLOROPROPENE		1700	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U
CYCLOHEXANE		720000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
DICHLORODIFLUOROMETHANE		19000	15 UJ	8.4 U	8.2 U	8.8 U	8.9 U	9 U	7.4 UJ	8 U	9.6 UJ	7.4 U	8 U
ETHYLBENZENE	71000	5700	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
ISOPROPYLBENZENE	27000	220000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
METHYL ACETATE		7800000	15 UJ	8.4 U	8.2 U	8.8 U	8.9 U	9 U	7.4 UJ	8 U	9.6 U	7.4 U	8 U
METHYL CYCLOHEXANE			7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
METHYL TERT-BUTYL ETHER	390000	39000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U
METHYLENE CHLORIDE	45000	11000	15 UJ	8.4 U	8.2 U	8.8 U	8.9 U	9 U	7.4 UJ	8 U	9.6 U	7.4 U	8 U
STYRENE	13000	650000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628	CRP-SB02-0810	CRP-SB02-0810-AVG	CRP-SB02-0810-D	CRP-SB02-1618	CRP-SB02-2426	CRP-SB03-0810	CRP-SB03-1618	CRP-SB03-2830
LOCATION ID			CRP-SB01	CRP-SB01	CRP-SB01	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB03	CRP-SB03	CRP-SB03
SAMPLE DATE			05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/20/09	05/20/09	05/20/09	05/21/09	05/21/09	05/21/09
TOP DEPTH			6 FT	20 FT	26 FT	8 FT	8 FT	8 FT	16 FT	24 FT	8 FT	16 FT	28 FT
BOTTOM DEPTH			8 FT	22 FT	28 FT	10 FT	10 FT	10 FT	18 FT	26 FT	10 FT	18 FT	30 FT
SACODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
TETRACHLOROETHENE	12000	570	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U
TOLUENE	190000	500000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U
TOTAL 1,2-DICHLOROETHENE		70000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.4 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
TOTAL CHLORINATED ETHENES			9.2 UJ	5.2 U	5.1 U	5.5 U	5.6 U	5.6 U	4.6 UJ	5 U	6 UJ	4.6 U	5 U
TOTAL CHLORINATED VOCS			9.1 UJ	5.2 UJ	5 UJ	1.39 J	1.39 J	5.5 U	4.6 UJ	4.9 UJ	5.9 UJ	4.6 UJ	4.9 UJ
TOTAL XYLENES	110000	60000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U
TRANS-1,2-DICHLOROETHENE	1100000	11000	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
TRANS-1,3-DICHLOROPROPENE		1700	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 UJ	3.7 U	4 U
TRICHLOROETHENE	13000	2800	7.3 UJ	4.2 U	4.1 U	4.4 U	4.45 U	4.5 U	3.7 UJ	4 U	4.8 U	3.7 U	4 U
TRICHLOROFLUOROMETHANE		80000	15 UJ	8.4 U	8.2 U	8.8 U	8.9 U	9 U	7.4 UJ	8 U	9.6 UJ	7.4 U	8 U
VINYL CHLORIDE	20	60	15 UJ	8.4 U	8.2 U	8.8 U	8.9 U	9 U	7.4 UJ	8 U	9.6 UJ	7.4 U	8 U
SEMIVOLATILES (UG/KG)													
1,1-BIPHENYL	800	390000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
2,2'-OXYBIS(1-CHLOROPROPANE)		3500	820 U	680 U	720 U	720 U	730 U	740 U	730 U	740 U	700 U	670 U	730 U
2,4,5-TRICHLOROPHENOL	9000	610000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
2,4,6-TRICHLOROPHENOL	4000	44000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
2,4-DICHLOROPHENOL	30000	18000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
2,4-DIMETHYLPHENOL	1400000	120000	1600 U	1400 U	1400 U	1400 U	1450 U	1500 U	1500 U	1500 U	1400 UJ	1300 U	1500 U
2,4-DINITROPHENOL	20000	12000	4100 U	3400 U	3600 U	3600 U	3650 U	3700 U	3600 U	3700 U	3500 U	3300 U	3700 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628	CRP-SB02-0810	CRP-SB02-0810-AVG	CRP-SB02-0810-D	CRP-SB02-1618	CRP-SB02-2426	CRP-SB03-0810	CRP-SB03-1618	CRP-SB03-2830
LOCATION ID			CRP-SB01	CRP-SB01	CRP-SB01	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB03	CRP-SB03	CRP-SB03
SAMPLE DATE			05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/20/09	05/20/09	05/20/09	05/21/09	05/21/09	05/21/09
TOP DEPTH			6 FT	20 FT	26 FT	8 FT	8 FT	8 FT	16 FT	24 FT	8 FT	16 FT	28 FT
BOTTOM DEPTH			8 FT	22 FT	28 FT	10 FT	10 FT	10 FT	18 FT	26 FT	10 FT	18 FT	30 FT
SACODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
2,4-DINITROTOLUENE	900	1600	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
2,6-DINITROTOLUENE	61000	6100	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
2-CHLORONAPHTHALENE		630000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
2-CHLOROPHENOL	50000	39000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
2-METHYLNAPHTHALENE	29000	31000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
2-METHYLPHENOL		310000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
2-NITROANILINE		18000	1600 U	1400 U	1400 U	1400 U	1450 U	1500 U	1500 U	1500 U	1400 U	1300 U	1500 U
2-NITROPHENOL			410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
3,3'-DICHLOROBENZIDINE	1400	1100	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 UJ	330 U	370 U
3-NITROANILINE			1600 U	1400 U	1400 U	1400 U	1450 U	1500 U	1500 U	1500 U	1400 U	1300 U	1500 U
4,6-DINITRO-2-METHYLPHENOL		610	1600 U	1400 U	1400 U	1400 U	1450 U	1500 U	1500 U	1500 U	1400 U	1300 U	1500 U
4-BROMOPHENYL PHENYL ETHER			410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
4-CHLORO-3-METHYLPHENOL			410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
4-CHLOROANILINE	310000	2400	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
4-CHLOROPHENYL PHENYL ETHER			410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
4-METHYLPHENOL		31000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
4-NITROANILINE		24000	1600 U	1400 U	1400 U	1400 U	1450 U	1500 U	1500 U	1500 U	1400 U	1300 U	1500 U
4-NITROPHENOL	7000		1600 U	1400 U	1400 U	1400 U	1450 U	1500 U	1500 U	1500 U	1400 U	1300 U	1500 U
ACENAPHTHENE	29000	340000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628	CRP-SB02-0810	CRP-SB02-0810-AVG	CRP-SB02-0810-D	CRP-SB02-1618	CRP-SB02-2426	CRP-SB03-0810	CRP-SB03-1618	CRP-SB03-2830
LOCATION ID			CRP-SB01	CRP-SB01	CRP-SB01	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB03	CRP-SB03	CRP-SB03
SAMPLE DATE			05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/20/09	05/20/09	05/20/09	05/21/09	05/21/09	05/21/09
TOP DEPTH			6 FT	20 FT	26 FT	8 FT	8 FT	8 FT	16 FT	24 FT	8 FT	16 FT	28 FT
BOTTOM DEPTH			8 FT	22 FT	28 FT	10 FT	10 FT	10 FT	18 FT	26 FT	10 FT	18 FT	30 FT
SACODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
ACENAPHTHYLENE	23000	340000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
ACETOPHENONE		780000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
ANTHRACENE	29000	1700000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
ATRAZINE		2100	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
BENZALDEHYDE		780000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
BENZO(A)ANTHRACENE	900	150	56 J	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
BENZO(A)PYRENE	400	15	82 U	68 U	72 U	72 U	73 U	74 U	73 U	74 U	70 U	67 U	73 U
BENZO(B)FLUORANTHENE	900	150	53 J	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
BENZO(G,H,I)PERYLENE	800	170000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
BENZO(K)FLUORANTHENE	900	1500	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
BIS(2-CHLOROETHOXY)METHANE		18000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
BIS(2-CHLOROETHYL)ETHER	600	190	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	44 J	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
BUTYL BENZYL PHTHALATE		26000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
CAPROLACTAM		3100000	410 U	340 U	360 U	360 U	200 J	200 J	360 U	160 J	120 J	330 U	370 U
CARBAZOLE			820 U	680 U	720 U	720 U	730 U	740 U	730 U	740 U	700 U	670 U	730 U
CHRYSENE	400	15000	54 J	68 U	72 U	72 U	73 U	74 U	73 U	74 U	70 U	67 U	73 U
DIBENZO(A,H)ANTHRACENE	400	15	82 U	68 U	72 U	72 U	73 U	74 U	73 U	74 U	70 U	67 U	73 U
DIBENZOFURAN			410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
DIETHYL PHTHALATE	100000	4900000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628	CRP-SB02-0810	CRP-SB02-0810-AVG	CRP-SB02-0810-D	CRP-SB02-1618	CRP-SB02-2426	CRP-SB03-0810	CRP-SB03-1618	CRP-SB03-2830
LOCATION ID			CRP-SB01	CRP-SB01	CRP-SB01	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB03	CRP-SB03	CRP-SB03
SAMPLE DATE			05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/20/09	05/20/09	05/20/09	05/21/09	05/21/09	05/21/09
TOP DEPTH			6 FT	20 FT	26 FT	8 FT	8 FT	8 FT	16 FT	24 FT	8 FT	16 FT	28 FT
BOTTOM DEPTH			8 FT	22 FT	28 FT	10 FT	10 FT	10 FT	18 FT	26 FT	10 FT	18 FT	30 FT
SACODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
DIMETHYL PHTHALATE	1900000		410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
DI-N-BUTYL PHTHALATE	200000	610000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
DI-N-OCTYL PHTHALATE			410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
FLUORANTHENE	20000	230000	110 J	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
FLUORENE	28000	230000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
HEXACHLOROBENZENE	400	300	82 U	68 U	72 U	72 U	73 U	74 U	73 U	74 U	70 U	67 U	73 U
HEXACHLOROBUTADIENE	8200	6200	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
HEXACHLOROCYCLOPENTADIENE	10000	37000	410 UJ	340 UJ	360 UJ	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
HEXACHLOROETHANE	46000	35000	820 U	680 U	720 U	720 U	730 U	740 U	730 U	740 U	700 U	670 U	730 U
HIGH MOLECULAR WEIGHT PAHS			366 J	260 U	270 U	270 U	280 U	280 U	270 U	280 U	270 U	250 U	280 U
INDENO(1,2,3-CD)PYRENE	900	150	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
ISOPHORONE		510000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
LOW MOLECULAR WEIGHT PAHS			72 J	340 U	360 U	360 U	360 U	370 U	360 U	370 U	350 U	330 U	370 U
NAPHTHALENE	29000	3900	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
NITROBENZENE		4400	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
N-NITROSO-DI-N-PROPYLAMINE		69	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
N-NITROSODIPHENYLAMINE		99000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
PENTACHLOROPHENOL	2100	3000	1600 U	1400 U	1400 U	1400 U	1450 U	1500 U	1500 U	1500 U	1400 U	1300 U	1500 U
PHENANTHRENE	29000	170000	72 J	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628	CRP-SB02-0810	CRP-SB02-0810-AVG	CRP-SB02-0810-D	CRP-SB02-1618	CRP-SB02-2426	CRP-SB03-0810	CRP-SB03-1618	CRP-SB03-2830
LOCATION ID			CRP-SB01	CRP-SB01	CRP-SB01	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB03	CRP-SB03	CRP-SB03
SAMPLE DATE			05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/20/09	05/20/09	05/20/09	05/21/09	05/21/09	05/21/09
TOP DEPTH			6 FT	20 FT	26 FT	8 FT	8 FT	8 FT	16 FT	24 FT	8 FT	16 FT	28 FT
BOTTOM DEPTH			8 FT	22 FT	28 FT	10 FT	10 FT	10 FT	18 FT	26 FT	10 FT	18 FT	30 FT
SACODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
PHENOL	30000	1800000	410 U	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
PYRENE	1100	170000	93 J	340 U	360 U	360 U	365 U	370 U	360 U	370 U	350 U	330 U	370 U
TOTAL CHLORINATED VOCS			410 U	340 U	360 U	360 U	360 U	370 U	360 U	370 U	350 U	330 U	370 U
TOTAL PAHS			438 J	290 U	310 U	310 U	310 U	320 U	310 U	320 U	300 U	280 U	320 U
PESTICIDES/PCBS (UG/KG)													
4,4'-DDD		2000	0.82 U	0.68 U	0.72 U	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 U	0.67 U	0.73 U
4,4'-DDE		1400	0.82 U	0.68 U	0.72 U	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 U	0.67 U	0.73 U
4,4'-DDT	21	1700	0.74 J	0.68 U	0.48 J	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 U	0.67 U	0.73 U
ALDRIN		29	0.41 U	0.34 U	0.36 U	0.36 U	0.365 U	0.37 U	0.36 U	0.37 U	0.35 U	0.33 U	0.37 U
ALPHA-BHC		77	0.41 U	0.51 UJ	0.36 U	0.36 U	0.365 U	0.37 U	2.6 UJ	0.37 U	0.35 U	0.33 U	0.37 U
ALPHA-CHLORDANE	500	1600	0.41 U	0.34 U	0.36 U	0.36 U	0.365 U	0.37 U	0.36 U	0.37 U	0.35 U	0.33 U	0.37 U
AROCLOR-1016	371	22	20 U	17 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	17 U	18 U
AROCLOR-1221	371	170	20 U	17 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	17 U	18 U
AROCLOR-1232	371	170	20 U	17 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	17 U	18 U
AROCLOR-1242	371	220	20 U	17 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	17 U	18 U
AROCLOR-1248	371	220	20 U	17 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	17 U	18 U
AROCLOR-1254	371	220	20 U	17 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	17 U	18 U
AROCLOR-1260	371	220	9.8 J	17 U	18 U	18 UJ	18 UJ	18 U	18 U	18 U	18 U	17 U	18 U
BETA-BHC		270	0.41 U	0.16 J	0.36 U	0.28 J	0.28 J	0.83 UJ	0.36 U	0.34 J	0.35 U	0.33 U	0.37 U
DELTA-BHC		77	0.41 U	0.34 U	0.36 U	0.36 U	0.365 U	0.37 U	0.36 U	0.37 U	0.35 U	0.33 U	0.37 U
DIELDRIN	4.9	30	0.82 U	0.68 U	0.72 U	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 U	0.67 U	0.73 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628	CRP-SB02-0810	CRP-SB02-0810-AVG	CRP-SB02-0810-D	CRP-SB02-1618	CRP-SB02-2426	CRP-SB03-0810	CRP-SB03-1618	CRP-SB03-2830
LOCATION ID			CRP-SB01	CRP-SB01	CRP-SB01	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB03	CRP-SB03	CRP-SB03
SAMPLE DATE			05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/20/09	05/20/09	05/20/09	05/21/09	05/21/09	05/21/09
TOP DEPTH			6 FT	20 FT	26 FT	8 FT	8 FT	8 FT	16 FT	24 FT	8 FT	16 FT	28 FT
BOTTOM DEPTH			8 FT	22 FT	28 FT	10 FT	10 FT	10 FT	18 FT	26 FT	10 FT	18 FT	30 FT
SACODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
ENDOSULFAN I		37000	0.41 U	0.34 U	0.36 U	0.36 U	0.365 U	0.37 U	0.36 U	0.37 U	0.35 U	0.33 U	0.37 U
ENDOSULFAN II		37000	0.8 J	0.4 J	1.8	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.33 J	0.67 U	0.36 J
ENDOSULFAN SULFATE		37000	2.5 UJ	0.68 U	0.72 U	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 UJ	0.67 U	0.73 U
ENDRIN		1800	0.82 U	0.68 U	0.72 U	0.72 U	0.73 UJ	0.74 UJ	0.73 UJ	0.74 UJ	0.7 U	0.67 U	0.73 U
ENDRIN ALDEHYDE		1800	0.82 U	0.68 U	0.72 U	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 U	0.67 U	0.73 U
ENDRIN KETONE		1800	0.82 U	0.68 U	0.72 U	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 U	0.67 U	0.73 U
GAMMA-BHC (LINDANE)		520	0.41 U	0.34 U	0.36 U	0.36 U	0.365 U	0.37 U	0.36 U	0.37 U	0.35 U	0.33 U	0.19 J
GAMMA-CHLORDANE	500	1600	0.24 J	0.34 U	0.26 J	0.36 U	0.365 U	0.37 U	0.36 U	0.37 U	0.35 U	0.33 U	0.19 J
HEPTACHLOR		110	0.41 U	0.34 U	0.36 U	0.36 U	0.365 U	0.37 U	0.36 U	0.37 U	0.35 U	0.33 U	0.37 U
HEPTACHLOR EPOXIDE		53	0.41 U	0.34 U	0.36 U	0.15 J	0.15 J	0.37 U	0.36 U	0.58 UJ	0.35 U	0.33 U	0.37 U
METHOXYCHLOR		31000	0.41 U	0.34 U	0.36 U	2.3 UJ	1.335 UJ	0.37 UJ	0.36 UJ	0.37 UJ	0.35 U	0.33 U	0.37 U
TOTAL AROCLOR	371	220	9.8 J	17 U	18 U	18 UJ	18 UJ	18 U	18 U	18 U	18 U	17 U	18 U
TOTAL DDD/DDE/DDT			0.74 J	0.68 U	0.48 J	0.72 U	0.73 U	0.74 U	0.73 U	0.74 U	0.7 U	0.67 U	0.73 U
TOXAPHENE		440	41 U	34 U	36 U	36 U	36.5 U	37 U	36 U	37 U	35 U	33 U	37 U
METALS (MG/KG)													
ALUMINUM		7700	9610	6040	4300	7800	8490	9180	4380	3510	6880	5290	2740
ANTIMONY	0.27	3.1	0.92 UJ	0.77 UJ	1.8 UJ	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.5 U	0.75 U	1.7 U
ARSENIC	7	0.39	8.7	6.7	18.7	10.2	11.85	13.5	7.3	15.3	9.3	13.8	28.8
BARIUM	330	1500	26 J	25 J	35 J	20.3 J	19.95 J	19.6 J	24.6 J	18.8 J	28 J	22.9 J	17.3 J
BERYLLIUM	0.4	16	0.39	0.24 J	0.28	0.284	0.298	0.312	0.382	0.239 J	0.321	0.299	0.261 J
CADMIUM	0.36	7	0.19 J	0.1 J	0.28	0.27 U	0.073 J	0.073 J	0.27 U	0.155 J	0.075 J	0.067 J	0.28 U
CALCIUM			418 J	860 J	931 J	397 J	1023.5 J	1650 J	891 J	1450 J	380 J	781 J	1070 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB01-2022	CRP-SB01-2628	CRP-SB02-0810	CRP-SB02-0810-AVG	CRP-SB02-0810-D	CRP-SB02-1618	CRP-SB02-2426	CRP-SB03-0810	CRP-SB03-1618	CRP-SB03-2830
LOCATION ID			CRP-SB01	CRP-SB01	CRP-SB01	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB02	CRP-SB03	CRP-SB03	CRP-SB03
SAMPLE DATE			05/19/09	05/19/09	05/19/09	05/20/09	05/20/09	05/20/09	05/20/09	05/20/09	05/21/09	05/21/09	05/21/09
TOP DEPTH			6 FT	20 FT	26 FT	8 FT	8 FT	8 FT	16 FT	24 FT	8 FT	16 FT	28 FT
BOTTOM DEPTH			8 FT	22 FT	28 FT	10 FT	10 FT	10 FT	18 FT	26 FT	10 FT	18 FT	30 FT
SACODE			NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
CHROMIUM	26	280	12 J	12.6 J	13.3 J	12.2 J	13.55 J	14.9 J	9.7 J	7.7 J	9.9 J	11 J	10.1 J
COBALT	13	2.3	10	11.1	24.4	17.9	18	18.1	13.9	15.3	14.3	14.6	21.9
COPPER	28	310	20.4 J	17 J	15 J	24.6 J	24.3 J	24 J	24 J	25.9 J	20.4 J	18.5 J	45.2 J
IRON		5500	26800	18600	43300 J	35300 J	34350 J	33400 J	38300 J	34200 J	31000 J	25000	40700 J
LEAD	11	400	18.3 J	8.4 J	6.5 J	8.1 J	13.3 J	18.5 J	7.5 J	14.6 J	8.9 J	8.3 J	10 J
MAGNESIUM			2180	2910	3290	2530 J	2875 J	3220 J	2400 J	3500 J	2000 J	1970 J	4000 J
MANGANESE	220	180	442 J	215 J	728 J	802	723	644	346	543	1440	350	469
MERCURY	0.1	0.43	0.028 J	0.034 U	0.032 U	0.037 U	0.037 U	0.037 U	0.038 U	0.036 U	0.035 U	0.035 U	0.034 U
NICKEL	38	150	21.2	20.7	39.1	30.9 J	31.05 J	31.2 J	25.4 J	32.6 J	26.6 J	24 J	65.5 J
POTASSIUM			266 J	865 J	777 J	285	322	359	665	515	435	547	461
SELENIUM	0.52	39	0.43	0.35	0.32 J	0.16 UJ	0.24 UJ	0.32 UJ	0.23 UJ	0.4 UJ	0.33 U	0.19 UJ	0.85 UJ
SILVER	4.2	39	0.18 U	0.15 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.15 U	0.15 U	0.17 U
SODIUM			308 U	257 U	263 U	270 U	270 U	270 U	268 U	273 U	254 U	251 U	275 U
THALLIUM	1	0.51	0.49 U	0.41 U	0.42 U	0.43 U	0.43 U	0.43 U	0.43 U	0.44 U	0.41 U	0.4 U	0.44 U
VANADIUM	7.8	39	15.9	15.6	19	15	15.35	15.7	16.2	11.2	15	15.7	12.7
ZINC	46	2300	66.8	40.9	112	50.7	55.7	60.7	52.7	62.8	59.9	52.2	57.2
PETROLEUM HYDROCARBONS (MG/KG)													
DIESEL RANGE ORGANICS	500		17 J	13	7.7	5.6	7.4	9.2	7.1	6.8	20	16	15
GASOLINE RANGE ORGANICS	500		3.2 U	3.8	11	2.4 U	2.7 U	3 U	2.2 U	2.4 U	2.4 U	2.3 U	2.2 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB03-2830-AVG	CRP-SB03-2830-D	CRP-SB04-0406	CRP-SB04-0810	CRP-SB04-3234	CRP-SB05-0204	CRP-SB05-0810	CRP-SB05-3032	CRP-SB06-0810
LOCATION ID			CRP-SB01	CRP-SB03	CRP-SB03	CRP-SB04	CRP-SB04	CRP-SB04	CRP-SB05	CRP-SB05	CRP-SB05	CRP-SB06
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/28/09	05/28/09	05/28/09	05/27/09	05/27/09	05/27/09	05/27/09
TOP DEPTH			6 FT	28 FT	28 FT	4 FT	8 FT	32 FT	2 FT	8 FT	30 FT	8 FT
BOTTOM DEPTH			8 FT	30 FT	30 FT	6 FT	10 FT	34 FT	4 FT	10 FT	32 FT	10 FT
SACODE			NORMAL	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM
VOLATILES (UG/KG)												
1,1,1-TRICHLOROETHANE	540000	900000	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U
1,1,2,2-TETRACHLOROETHANE	1300	590	7.3 UJ	4.25 UJ	4.5 U	5.3 U	5 U	4.4 UJ	4.6 U	4.8 U	4.6 U	4.3 U
1,1,2-TRICHLOROETHANE	3600	1100	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
1,1-DICHLOROETHANE	920000	3400	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U
1,1-DICHLOROETHENE	200	25000	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
1,2,4-TRICHLOROBENZENE	20000	8700	7.3 UJ	4.25 UJ	4.5 U	5.3 U	5 U	4.4 UJ	4.6 U	4.8 UJ	4.6 U	4.3 U
1,2-DIBROMO-3-CHLOROPROPANE	500	5.6	7.3 UJ	4.25 UJ	4.5 U	5.3 U	5 U	4.4 UJ	4.6 U	4.8 U	4.6 U	4.3 U
1,2-DIBROMOETHANE	10	34	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U
1,2-DICHLOROBENZENE	510000	200000	7.3 UJ	4.25 UJ	4.5 U	5.3 U	5 U	4.4 UJ	4.6 U	4.8 UJ	4.6 U	4.3 U
1,2-DICHLOROETHANE	900	450	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U
1,2-DICHLOROPROPANE	1900	930	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
1,3-DICHLOROBENZENE	430000		7.3 UJ	4.25 UJ	4.5 U	5.3 U	5 U	4.4 UJ	4.6 U	4.8 UJ	4.6 U	4.3 U
1,4-DICHLOROBENZENE	20000	2600	7.3 UJ	4.25 UJ	4.5 U	5.3 U	5 U	4.4 UJ	4.6 U	4.8 UJ	4.6 U	4.3 U
2-BUTANONE	10000000	2800000	73 UJ	42.5 U	45 U	34 J	50 U	44 UJ	20 J	48 U	46 U	43 U
2-HEXANONE			15 UJ	8.5 U	9 U	10 U	10 U	8.8 UJ	9.2 U	9.6 U	9.3 U	8.6 U
4-METHYL-2-PENTANONE	1200000	530000	15 UJ	8.5 U	9 U	10 U	10 U	8.8 UJ	9.2 U	9.6 U	9.3 U	8.6 U
ACETONE	7800000	6100000	73 UJ	42.5 U	45 U	140	36 J	44 UJ	110	7.4 J	46 U	43 U
BENZENE	2500	1100	7.3 UJ	4.25 U	4.5 U	1.2 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
BROMODICHLOROMETHANE	10000	280	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	0.43 J	4.6 U	4.3 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB03-2830-AVG	CRP-SB03-2830-D	CRP-SB04-0406	CRP-SB04-0810	CRP-SB04-3234	CRP-SB05-0204	CRP-SB05-0810	CRP-SB05-3032	CRP-SB06-0810
LOCATION ID			CRP-SB01	CRP-SB03	CRP-SB03	CRP-SB04	CRP-SB04	CRP-SB04	CRP-SB05	CRP-SB05	CRP-SB05	CRP-SB06
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/28/09	05/28/09	05/28/09	05/27/09	05/27/09	05/27/09	05/27/09
TOP DEPTH			6 FT	28 FT	28 FT	4 FT	8 FT	32 FT	2 FT	8 FT	30 FT	8 FT
BOTTOM DEPTH			8 FT	30 FT	30 FT	6 FT	10 FT	34 FT	4 FT	10 FT	32 FT	10 FT
SACODE			NORMAL	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM
BROMOFORM	81000	61000	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
BROMOMETHANE	800	790	15 UJ	8.5 U	9 U	10 U	10 U	8.8 U	9.2 U	9.6 U	9.3 U	8.6 U
BTEX			7.3 UJ	4.2 U	4.5 U	15.6 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
CARBON DISULFIDE		67000	7.3 UJ	4.25 U	4.5 U	1.4 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
CARBON TETRACHLORIDE	1500	250	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
CHLOROBENZENE	40000	31000	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U
CHLORODIBROMOMETHANE	7600	700	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
CHLOROETHANE		1500000	15 UJ	8.5 U	9 U	10 U	10 U	8.8 U	9.2 U	9.6 U	9.3 U	8.6 U
CHLOROFORM	1200	300	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	0.63 J	4.3 U
CHLOROMETHANE		120000	15 UJ	8.5 U	9 U	10 U	10 U	8.8 U	9.2 U	9.6 U	9.3 U	8.6 U
CIS-1,2-DICHLOROETHENE	630000	78000	7.3 UJ	4.25 U	4.5 U	7.3	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
CIS-1,3-DICHLOROPROPENE		1700	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U
CYCLOHEXANE		720000	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
DICHLORODIFLUOROMETHANE		19000	15 UJ	8.5 U	9 U	10 U	10 U	8.8 U	9.2 U	9.6 U	9.3 U	8.6 U
ETHYLBENZENE	71000	5700	7.3 UJ	4.25 U	4.5 U	1.9 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
ISOPROPYLBENZENE	27000	220000	7.3 UJ	4.25 U	4.5 U	1.5 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
METHYL ACETATE		7800000	15 UJ	8.5 U	9 U	10 U	10 U	8.8 U	9.2 U	9.6 U	9.3 U	8.6 U
METHYL CYCLOHEXANE			7.3 UJ	4.25 U	4.5 U	0.44 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
METHYL TERT-BUTYL ETHER	390000	39000	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U
METHYLENE CHLORIDE	45000	11000	15 UJ	8.5 U	9 U	10 U	10 U	8.8 U	3.7 J	6.8 J	8.1 J	6 J
STYRENE	13000	650000	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB03-2830-AVG	CRP-SB03-2830-D	CRP-SB04-0406	CRP-SB04-0810	CRP-SB04-3234	CRP-SB05-0204	CRP-SB05-0810	CRP-SB05-3032	CRP-SB06-0810
LOCATION ID			CRP-SB01	CRP-SB03	CRP-SB03	CRP-SB04	CRP-SB04	CRP-SB04	CRP-SB05	CRP-SB05	CRP-SB05	CRP-SB06
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/28/09	05/28/09	05/28/09	05/27/09	05/27/09	05/27/09	05/27/09
TOP DEPTH			6 FT	28 FT	28 FT	4 FT	8 FT	32 FT	2 FT	8 FT	30 FT	8 FT
BOTTOM DEPTH			8 FT	30 FT	30 FT	6 FT	10 FT	34 FT	4 FT	10 FT	32 FT	10 FT
SACODE			NORMAL	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM
TETRACHLOROETHENE	12000	570	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U
TOLUENE	190000	500000	7.3 UJ	4.25 U	4.5 U	1.5 J	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
TOTAL 1,2-DICHLOROETHENE		70000	7.3 UJ	4.2 U	4.5 U	7.3	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U
TOTAL CHLORINATED ETHENES			9.2 UJ	5.3 U	5.6 U	9.5 J	6.2 U	5.5 U	5.8 U	6 UJ	5.8 U	1.6 J
TOTAL CHLORINATED VOCS			9.1 UJ	5.2 UJ	5.5 U	9.5 J	6.2 U	5.4 UJ	3.7 J	7.23 J	8.73 J	7.6 J
TOTAL XYLENES	110000	60000	7.3 UJ	4.25 U	4.5 U	11	5 U	4.4 U	4.6 U	4.8 U	4.6 U	4.3 U
TRANS-1,2-DICHLOROETHENE	1100000	11000	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U
TRANS-1,3-DICHLOROPROPENE		1700	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 UJ	4.6 U	4.3 U
TRICHLOROETHENE	13000	2800	7.3 UJ	4.25 U	4.5 U	5.3 U	5 U	4.4 U	4.6 U	4.8 U	4.6 U	1.6 J
TRICHLOROFLUOROMETHANE		80000	15 UJ	8.5 U	9 U	10 U	10 U	8.8 U	9.2 U	9.6 U	9.3 U	8.6 U
VINYL CHLORIDE	20	60	15 UJ	8.5 U	9 U	2.2 J	10 U	8.8 U	9.2 U	9.6 U	9.3 U	8.6 U
SEMIVOLATILES (UG/KG)												
1,1-BIPHENYL	800	390000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
2,2'-OXYBIS(1-CHLOROPROPANE)		3500	820 U	730 U	730 U	790 U	750 U	800 U	750 U	800 U	770 U	760 U
2,4,5-TRICHLOROPHENOL	9000	610000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
2,4,6-TRICHLOROPHENOL	4000	44000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
2,4-DICHLOROPHENOL	30000	18000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
2,4-DIMETHYLPHENOL	1400000	120000	1600 U	1500 U	1500 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1500 U
2,4-DINITROPHENOL	20000	12000	4100 U	3650 U	3600 U	4000 U	3800 U	4000 U	3800 U	4000 U	3800 U	3800 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB03-2830-AVG	CRP-SB03-2830-D	CRP-SB04-0406	CRP-SB04-0810	CRP-SB04-3234	CRP-SB05-0204	CRP-SB05-0810	CRP-SB05-3032	CRP-SB06-0810
LOCATION ID			CRP-SB01	CRP-SB03	CRP-SB03	CRP-SB04	CRP-SB04	CRP-SB04	CRP-SB05	CRP-SB05	CRP-SB05	CRP-SB06
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/28/09	05/28/09	05/28/09	05/27/09	05/27/09	05/27/09	05/27/09
TOP DEPTH			6 FT	28 FT	28 FT	4 FT	8 FT	32 FT	2 FT	8 FT	30 FT	8 FT
BOTTOM DEPTH			8 FT	30 FT	30 FT	6 FT	10 FT	34 FT	4 FT	10 FT	32 FT	10 FT
SACODE			NORMAL	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM
2,4-DINITROTOLUENE	900	1600	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
2,6-DINITROTOLUENE	61000	6100	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
2-CHLORONAPHTHALENE		630000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
2-CHLOROPHENOL	50000	39000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
2-METHYLNAPHTHALENE	29000	31000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
2-METHYLPHENOL		310000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
2-NITROANILINE		18000	1600 U	1500 U	1500 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1500 U
2-NITROPHENOL			410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
3,3'-DICHLOROBENZIDINE	1400	1100	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
3-NITROANILINE			1600 U	1500 U	1500 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1500 U
4,6-DINITRO-2-METHYLPHENOL		610	1600 U	1500 U	1500 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1500 U
4-BROMOPHENYL PHENYL ETHER			410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
4-CHLORO-3-METHYLPHENOL			410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
4-CHLOROANILINE	310000	2400	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
4-CHLOROPHENYL PHENYL ETHER			410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
4-METHYLPHENOL		31000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
4-NITROANILINE		24000	1600 U	1500 U	1500 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1500 U
4-NITROPHENOL	7000		1600 U	1500 U	1500 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1500 U
ACENAPHTHENE	29000	340000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB03-2830-AVG	CRP-SB03-2830-D	CRP-SB04-0406	CRP-SB04-0810	CRP-SB04-3234	CRP-SB05-0204	CRP-SB05-0810	CRP-SB05-3032	CRP-SB06-0810
LOCATION ID			CRP-SB01	CRP-SB03	CRP-SB03	CRP-SB04	CRP-SB04	CRP-SB04	CRP-SB05	CRP-SB05	CRP-SB05	CRP-SB06
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/28/09	05/28/09	05/28/09	05/27/09	05/27/09	05/27/09	05/27/09
TOP DEPTH			6 FT	28 FT	28 FT	4 FT	8 FT	32 FT	2 FT	8 FT	30 FT	8 FT
BOTTOM DEPTH			8 FT	30 FT	30 FT	6 FT	10 FT	34 FT	4 FT	10 FT	32 FT	10 FT
SACODE			NORMAL	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM
ACENAPHTHYLENE	23000	340000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
ACETOPHENONE		780000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
ANTHRACENE	29000	1700000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	79 J
ATRAZINE		2100	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
BENZALDEHYDE		780000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
BENZO(A)ANTHRACENE	900	150	56 J	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	300 J
BENZO(A)PYRENE	400	15	82 U	73 U	73 U	79 U	75 U	80 U	75 U	80 U	77 U	260
BENZO(B)FLUORANTHENE	900	150	53 J	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	240 J
BENZO(G,H,I)PERYLENE	800	170000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	210 J
BENZO(K)FLUORANTHENE	900	1500	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
BIS(2-CHLOROETHOXY)METHANE		18000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
BIS(2-CHLOROETHYL)ETHER	600	190	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	44 J	365 U	360 U	400 U	380 U	400 U	380 U	150 J	380 U	380 U
BUTYL BENZYL PHTHALATE		26000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
CAPROLACTAM		3100000	410 U	365 U	360 U	400 U	78 J	400 U	380 U	400 U	120 J	380 U
CARBAZOLE			820 U	730 U	730 U	790 U	750 U	800 U	750 U	800 U	770 U	760 U
CHRYSENE	400	15000	54 J	73 U	73 U	79 U	75 U	80 U	75 U	80 U	77 U	300
DIBENZO(A,H)ANTHRACENE	400	15	82 U	73 U	73 U	79 U	75 U	80 U	75 U	80 U	77 U	76 U
DIBENZOFURAN			410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
DIETHYL PHTHALATE	100000	4900000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB03-2830-AVG	CRP-SB03-2830-D	CRP-SB04-0406	CRP-SB04-0810	CRP-SB04-3234	CRP-SB05-0204	CRP-SB05-0810	CRP-SB05-3032	CRP-SB06-0810
LOCATION ID			CRP-SB01	CRP-SB03	CRP-SB03	CRP-SB04	CRP-SB04	CRP-SB04	CRP-SB05	CRP-SB05	CRP-SB05	CRP-SB06
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/28/09	05/28/09	05/28/09	05/27/09	05/27/09	05/27/09	05/27/09
TOP DEPTH			6 FT	28 FT	28 FT	4 FT	8 FT	32 FT	2 FT	8 FT	30 FT	8 FT
BOTTOM DEPTH			8 FT	30 FT	30 FT	6 FT	10 FT	34 FT	4 FT	10 FT	32 FT	10 FT
SACODE			NORMAL	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM
DIMETHYL PHTHALATE	1900000		410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
DI-N-BUTYL PHTHALATE	200000	610000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
DI-N-OCTYL PHTHALATE			410 U	365 UJ	360 UJ	400 U	380 U	400 U	380 U	400 U	380 U	380 U
FLUORANTHENE	20000	230000	110 J	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	560
FLUORENE	28000	230000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
HEXACHLOROBENZENE	400	300	82 U	73 U	73 U	79 U	75 U	80 U	75 U	80 U	77 U	76 U
HEXACHLOROBUTADIENE	8200	6200	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
HEXACHLOROCYCLOPENTADIENE	10000	37000	410 UJ	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
HEXACHLOROETHANE	46000	35000	820 U	730 U	730 U	790 U	750 U	800 U	750 U	800 U	770 U	760 U
HIGH MOLECULAR WEIGHT PAHS			366 J	280 U	270 U	66 J	290 U	300 U	290 U	300 U	290 U	2690 J
INDENO(1,2,3-CD)PYRENE	900	150	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
ISOPHORONE		510000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
LOW MOLECULAR WEIGHT PAHS			72 J	360 U	360 U	48 J	380 U	400 U	380 U	400 U	380 U	639 J
NAPHTHALENE	29000	3900	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
NITROBENZENE		4400	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
N-NITROSO-DI-N-PROPYLAMINE		69	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
N-NITROSODIPHENYLAMINE		99000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
PENTACHLOROPHENOL	2100	3000	1600 U	1500 U	1500 U	1600 U	1500 U	1600 U	1500 U	1600 U	1500 U	1500 U
PHENANTHRENE	29000	170000	72 J	365 U	360 U	48 J	380 U	400 U	380 U	400 U	380 U	560

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB03-2830-AVG	CRP-SB03-2830-D	CRP-SB04-0406	CRP-SB04-0810	CRP-SB04-3234	CRP-SB05-0204	CRP-SB05-0810	CRP-SB05-3032	CRP-SB06-0810
LOCATION ID			CRP-SB01	CRP-SB03	CRP-SB03	CRP-SB04	CRP-SB04	CRP-SB04	CRP-SB05	CRP-SB05	CRP-SB05	CRP-SB06
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/28/09	05/28/09	05/28/09	05/27/09	05/27/09	05/27/09	05/27/09
TOP DEPTH			6 FT	28 FT	28 FT	4 FT	8 FT	32 FT	2 FT	8 FT	30 FT	8 FT
BOTTOM DEPTH			8 FT	30 FT	30 FT	6 FT	10 FT	34 FT	4 FT	10 FT	32 FT	10 FT
SACODE			NORMAL	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM
PHENOL	30000	1800000	410 U	365 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
PYRENE	1100	170000	93 J	365 U	360 U	66 J	380 U	400 U	380 U	400 U	380 U	820
TOTAL CHLORINATED VOCS			410 U	360 U	360 U	400 U	380 U	400 U	380 U	400 U	380 U	380 U
TOTAL PAHS			438 J	310 U	310 U	114 J	330 U	340 U	330 U	340 U	330 U	3329 J
PESTICIDES/PCBS (UG/KG)												
4,4'-DDD		2000	0.82 U	0.73 U	0.73 U	0.79 U	0.75 U	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U
4,4'-DDE		1400	0.82 U	0.73 U	0.73 U	0.79 U	0.3 J	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U
4,4'-DDT	21	1700	0.74 J	0.73 U	0.73 U	0.79 U	0.55 J	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U
ALDRIN		29	0.41 U	0.365 U	0.36 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
ALPHA-BHC		77	0.41 U	0.365 U	0.36 U	0.4 U	1.3	1.8 UJ	0.38 U	0.4 U	0.38 U	0.38 U
ALPHA-CHLORDANE	500	1600	0.41 U	0.365 U	0.36 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
AROCLOR-1016	371	22	20 U	18 U	18 U	20 UJ	19 UJ	20 UJ	19 UJ	20 UJ	19 UJ	19 UJ
AROCLOR-1221	371	170	20 U	18 U	18 U	20 U	19 U	20 U	19 U	20 U	19 U	19 U
AROCLOR-1232	371	170	20 U	18 U	18 U	20 U	19 U	20 U	19 U	20 U	19 U	19 U
AROCLOR-1242	371	220	20 U	18 U	18 U	20 U	19 U	20 U	19 U	20 U	19 U	19 U
AROCLOR-1248	371	220	20 U	18 U	18 U	20 U	19 U	20 U	19 U	20 U	19 U	19 U
AROCLOR-1254	371	220	20 U	18 U	18 U	20 U	19 U	20 U	19 U	20 U	19 U	19 U
AROCLOR-1260	371	220	9.8 J	18 U	18 U	20 U	19 U	20 U	6.8 J	20 U	19 U	19 U
BETA-BHC		270	0.41 U	0.365 U	0.36 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
DELTA-BHC		77	0.41 U	0.365 U	0.36 U	0.4 U	0.57 J	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
DIELDRIN	4.9	30	0.82 U	0.73 U	0.73 U	0.79 U	0.75 U	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB03-2830-AVG	CRP-SB03-2830-D	CRP-SB04-0406	CRP-SB04-0810	CRP-SB04-3234	CRP-SB05-0204	CRP-SB05-0810	CRP-SB05-3032	CRP-SB06-0810
LOCATION ID			CRP-SB01	CRP-SB03	CRP-SB03	CRP-SB04	CRP-SB04	CRP-SB04	CRP-SB05	CRP-SB05	CRP-SB05	CRP-SB06
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/28/09	05/28/09	05/28/09	05/27/09	05/27/09	05/27/09	05/27/09
TOP DEPTH			6 FT	28 FT	28 FT	4 FT	8 FT	32 FT	2 FT	8 FT	30 FT	8 FT
BOTTOM DEPTH			8 FT	30 FT	30 FT	6 FT	10 FT	34 FT	4 FT	10 FT	32 FT	10 FT
SACODE			NORMAL	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM
ENDOSULFAN I		37000	0.41 U	0.365 U	0.36 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
ENDOSULFAN II		37000	0.8 J	0.32 J	0.28 J	0.79 U	0.75 U	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U
ENDOSULFAN SULFATE		37000	2.5 UJ	0.73 U	0.73 U	0.79 U	0.75 U	0.8 U	0.61 J	0.8 U	0.77 U	0.76 U
ENDRIN		1800	0.82 U	0.73 U	0.73 U	0.79 U	0.75 U	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U
ENDRIN ALDEHYDE		1800	0.82 U	0.73 U	0.73 U	0.79 U	0.75 U	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U
ENDRIN KETONE		1800	0.82 U	0.73 U	0.73 U	0.79 U	0.75 U	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U
GAMMA-BHC (LINDANE)		520	0.41 U	0.2 J	0.21 J	0.4 U	0.65	0.4 U	0.38 U	0.4 U	0.38 U	0.54
GAMMA-CHLORDANE	500	1600	0.24 J	0.19 J	0.36 U	0.48 U	0.68 UJ	0.77 UJ	0.39 U	1.3 U	0.85 U	1.8
HEPTACHLOR		110	0.41 U	0.365 U	0.36 U	0.4 U	0.44	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
HEPTACHLOR EPOXIDE		53	0.41 U	0.365 U	0.36 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	3 J
METHOXYCHLOR		31000	0.41 U	0.365 U	0.36 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
TOTAL AROCLOR	371	220	9.8 J	18 U	18 U	20 UJ	19 UJ	20 UJ	6.8 J	20 UJ	19 UJ	19 UJ
TOTAL DDD/DDE/DDT			0.74 J	0.73 U	0.73 U	0.79 U	0.85 J	0.8 U	0.75 U	0.8 U	0.77 U	0.76 U
TOXAPHENE		440	41 U	36.5 U	36 U	40 U	38 U	40 U	38 U	40 U	38 U	38 U
METALS (MG/KG)												
ALUMINUM		7700	9610	2670	2600	9540 J	5540 J	3380 J	7950 J	12900 J	14800 J	4680 J
ANTIMONY	0.27	3.1	0.92 UJ	1.65 U	1.6 U	0.88 U	0.83 U	0.88 U	0.83 U	1.8 U	1.7 U	1.7 U
ARSENIC	7	0.39	8.7	24.4	20	16	7.8	10.4	8.6	14.7	10.6	8.6
BARIUM	330	1500	26 J	17.2 J	17.1 J	40.1 J	16.9 J	15.3 J	20.8 J	10.1 J	5.9 J	26.1 J
BERYLLIUM	0.4	16	0.39	0.265 J	0.269 J	0.42	0.27 J	0.27 J	0.31	0.24 J	0.19 J	0.28 J
CADMIUM	0.36	7	0.19 J	0.275 U	0.27 U	0.115 J	0.067 J	0.15 J	0.28 U	0.3 U	0.29 U	0.28 U
CALCIUM			418 J	1145 J	1220 J	672 J	292 J	1560 J	246 J	838 J	1850 J	506 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

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MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB03-2830-AVG	CRP-SB03-2830-D	CRP-SB04-0406	CRP-SB04-0810	CRP-SB04-3234	CRP-SB05-0204	CRP-SB05-0810	CRP-SB05-3032	CRP-SB06-0810
LOCATION ID			CRP-SB01	CRP-SB03	CRP-SB03	CRP-SB04	CRP-SB04	CRP-SB04	CRP-SB05	CRP-SB05	CRP-SB05	CRP-SB06
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/28/09	05/28/09	05/28/09	05/27/09	05/27/09	05/27/09	05/27/09
TOP DEPTH			6 FT	28 FT	28 FT	4 FT	8 FT	32 FT	2 FT	8 FT	30 FT	8 FT
BOTTOM DEPTH			8 FT	30 FT	30 FT	6 FT	10 FT	34 FT	4 FT	10 FT	32 FT	10 FT
SACODE			NORMAL	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM
CHROMIUM	26	280	12 J	10.85 J	11.6 J	12 J	8.8 J	13 J	13.1 J	24.6 J	24 J	9.9 J
COBALT	13	2.3	10	19.5	17.1	11	8.6	22.5	16	21	15.5	14.5
COPPER	28	310	20.4 J	27.15 J	9.1 J	21.6	19.3	20.2	20	28.2	32.7	21.9
IRON		5500	26800	44100 J	47500 J	23300	23100	26700	27400	50100	50500	37200
LEAD	11	400	18.3 J	9.8 J	9.6 J	25.1 J	7.2 J	10.2 J	8.8 J	18.7 J	13.8 J	6.7 J
MAGNESIUM			2180	4640 J	5280 J	1880 J	1520 J	1530 J	1840 J	4720 J	5790 J	1210 J
MANGANESE	220	180	442 J	501	533	389	232	723	439	481	193	539
MERCURY	0.1	0.43	0.028 J	0.033 U	0.032 U	0.021 J	0.035 U	0.036 U	0.035 U	0.04 U	0.034 U	0.033 U
NICKEL	38	150	21.2	50.05 J	34.6 J	24	20.9	41.1	26.9	49	51.7	28.3
POTASSIUM			266 J	427	393	302 J	307 J	321 J	326 J	209 J	141 J	377 J
SELENIUM	0.52	39	0.43	0.695 UJ	0.54 UJ	0.78 UJ	0.36 U	0.25 UJ	0.65 UJ	0.47 UJ	0.97 UJ	0.37 U
SILVER	4.2	39	0.18 U	0.17 U	0.17 U	0.18 UJ	0.17 UJ	0.18 UJ	0.17 UJ	0.18 UJ	0.17 UJ	0.17 UJ
SODIUM			308 U	274.5 U	274 U	294 U	277 U	60.7 J	276 U	302 U	289 U	283 U
THALLIUM	1	0.51	0.49 U	0.44 U	0.44 U	0.47 U	0.44 U	0.47 U	0.44 U	0.97 U	0.92 U	0.45 U
VANADIUM	7.8	39	15.9	13.45	14.2	15.7	12.6	12	15.9	19.4	19.9	16.4
ZINC	46	2300	66.8	60.1	63	66.1 J	45.3 J	140 J	80.5 J	90.8 J	146 J	56.5 J
PETROLEUM HYDROCARBONS (MG/KG)												
DIESEL RANGE ORGANICS	500		17 J	13.5	12	110	14	13	49	10	8.7	18
GASOLINE RANGE ORGANICS	500		3.2 U	2.25 U	2.3 U	3 U	2.3 U	2.5 U	2.6 U	2.8 U	2.4 U	2.5 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB06-1214	CRP-SB06-2224	CRP-SB06-2224-AVG	CRP-SB06-2224-D	CRP-SB07-0406	CRP-SB07-0810	CRP-SB07-1416	CRP-SB08-0810	CRP-SB08-0810-AVG
LOCATION ID			CRP-SB01	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB08
SAMPLE DATE			05/19/09	05/27/09	05/28/09	05/28/09	05/28/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09
TOP DEPTH			6 FT	12 FT	22 FT	22 FT	22 FT	4 FT	8 FT	14 FT	8 FT	8 FT
BOTTOM DEPTH			8 FT	14 FT	24 FT	24 FT	24 FT	6 FT	10 FT	16 FT	10 FT	10 FT
SACODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
VOLATILES (UG/KG)												
1,1,1-TRICHLOROETHANE	540000	900000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
1,1,2,2-TETRACHLOROETHANE	1300	590	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
1,1,2-TRICHLOROETHANE	3600	1100	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
1,1-DICHLOROETHANE	920000	3400	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
1,1-DICHLOROETHENE	200	25000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
1,2,4-TRICHLOROBENZENE	20000	8700	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
1,2-DIBROMO-3-CHLOROPROPANE	500	5.6	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
1,2-DIBROMOETHANE	10	34	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
1,2-DICHLOROBENZENE	510000	200000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
1,2-DICHLOROETHANE	900	450	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
1,2-DICHLOROPROPANE	1900	930	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
1,3-DICHLOROBENZENE	430000		7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
1,4-DICHLOROBENZENE	20000	2600	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
2-BUTANONE	10000000	2800000	73 UJ	51 UJ	2400 UJ	1223 UJ	46 UJ	40 U	47 UJ	2200 UJ	44 UJ	972 UJ
2-HEXANONE			15 UJ	10 UJ	480 UJ	244.6 UJ	9.2 UJ	8.1 U	9.5 UJ	440 UJ	8.8 UJ	194.4 UJ
4-METHYL-2-PENTANONE	1200000	530000	15 UJ	10 UJ	480 UJ	244.6 UJ	9.2 UJ	8.1 U	9.5 UJ	440 U	8.8 UJ	194.4 UJ
ACETONE	7800000	6100000	73 UJ	51 UJ	2400 UJ	1223 UJ	46 UJ	40 U	47 UJ	2200 U	44 UJ	972 UJ
BENZENE	2500	1100	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
BROMODICHLOROMETHANE	10000	280	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB06-1214	CRP-SB06-2224	CRP-SB06-2224-AVG	CRP-SB06-2224-D	CRP-SB07-0406	CRP-SB07-0810	CRP-SB07-1416	CRP-SB08-0810	CRP-SB08-0810-AVG
LOCATION ID			CRP-SB01	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB08
SAMPLE DATE			05/19/09	05/27/09	05/28/09	05/28/09	05/28/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09
TOP DEPTH			6 FT	12 FT	22 FT	22 FT	22 FT	4 FT	8 FT	14 FT	8 FT	8 FT
BOTTOM DEPTH			8 FT	14 FT	24 FT	24 FT	24 FT	6 FT	10 FT	16 FT	10 FT	10 FT
SACODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
BROMOFORM	81000	61000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
BROMOMETHANE	800	790	15 UJ	10 U	480 U	244.6 U	9.2 U	8.1 U	9.5 U	440 U	8.8 U	194.4 UJ
BTEX			7.3 UJ	5.1 U	240 U	120 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97 UJ
CARBON DISULFIDE		67000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
CARBON TETRACHLORIDE	1500	250	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
CHLOROBENZENE	40000	31000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
CHLORODIBROMOMETHANE	7600	700	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
CHLOROETHANE		1500000	15 UJ	10 U	480 U	244.6 U	9.2 U	8.1 U	9.5 U	440 U	8.8 U	194.4 UJ
CHLOROFORM	1200	300	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
CHLOROMETHANE		120000	15 UJ	10 U	480 U	244.6 U	9.2 U	8.1 U	9.5 U	440 U	8.8 U	194.4 UJ
CIS-1,2-DICHLOROETHENE	630000	78000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
CIS-1,3-DICHLOROPROPENE		1700	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
CYCLOHEXANE		720000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
DICHLORODIFLUOROMETHANE		19000	15 UJ	10 U	480 U	244.6 U	9.2 U	8.1 U	9.5 U	440 U	8.8 U	194.4 UJ
ETHYLBENZENE	71000	5700	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
ISOPROPYLBENZENE	27000	220000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
METHYL ACETATE		7800000	15 UJ	10 U	480 U	244.6 U	9.2 U	8.1 U	9.5 U	440 U	8.8 U	194.4 UJ
METHYL CYCLOHEXANE			7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
METHYL TERT-BUTYL ETHER	390000	39000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
METHYLENE CHLORIDE	45000	11000	15 UJ	10 U	480 U	244.6 U	9.2 U	8.1 U	9.5 U	440 U	8.8 U	194.4 UJ
STYRENE	13000	650000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB06-1214	CRP-SB06-2224	CRP-SB06-2224-AVG	CRP-SB06-2224-D	CRP-SB07-0406	CRP-SB07-0810	CRP-SB07-1416	CRP-SB08-0810	CRP-SB08-0810-AVG
LOCATION ID			CRP-SB01	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB08
SAMPLE DATE			05/19/09	05/27/09	05/28/09	05/28/09	05/28/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09
TOP DEPTH			6 FT	12 FT	22 FT	22 FT	22 FT	4 FT	8 FT	14 FT	8 FT	8 FT
BOTTOM DEPTH			8 FT	14 FT	24 FT	24 FT	24 FT	6 FT	10 FT	16 FT	10 FT	10 FT
SACODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
TETRACHLOROETHENE	12000	570	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	19 J	169.5 J
TOLUENE	190000	500000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
TOTAL 1,2-DICHLOROETHENE		70000	7.3 UJ	5.1 U	240 U	120 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97 UJ
TOTAL CHLORINATED ETHENES			9.2 UJ	1.4 J	990 J	560 J	130 J	5 U	5.9 U	280 U	19 J	169.5 J
TOTAL CHLORINATED VOCS			9.1 UJ	1.4 J	990 J	560 J	130 J	4.9 U	5.8 U	270 U	19 J	169.5 J
TOTAL XYLENES	110000	60000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
TRANS-1,2-DICHLOROETHENE	1100000	11000	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
TRANS-1,3-DICHLOROPROPENE		1700	7.3 UJ	5.1 U	240 U	122.3 U	4.6 U	4 U	4.7 U	220 U	4.4 U	97.2 UJ
TRICHLOROETHENE	13000	2800	7.3 UJ	1.4 J	990 J	560 J	130 J	4 U	4.7 U	220 U	4.4 U	97.2 UJ
TRICHLOROFLUOROMETHANE		80000	15 UJ	10 U	480 U	244.6 U	9.2 U	8.1 U	9.5 U	440 U	8.8 U	194.4 UJ
VINYL CHLORIDE	20	60	15 UJ	10 U	480 U	244.6 U	9.2 U	8.1 U	9.5 U	440 U	8.8 U	194.4 UJ
SEMIVOLATILES (UG/KG)												
1,1-BIPHENYL	800	390000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
2,2'-OXYBIS(1-CHLOROPROPANE)		3500	820 U	750 U	750 U	765 U	780 U	700 U	730 U	730 U	740 U	735 U
2,4,5-TRICHLOROPHENOL	9000	610000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
2,4,6-TRICHLOROPHENOL	4000	44000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
2,4-DICHLOROPHENOL	30000	18000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
2,4-DIMETHYLPHENOL	1400000	120000	1600 U	1500 U	1500 U	1550 U	1600 U	1400 U	1500 U	1500 U	1500 U	1500 U
2,4-DINITROPHENOL	20000	12000	4100 U	3800 U	3800 U	3850 U	3900 U	3500 U	3700 U	3600 U	3700 U	3700 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
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TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB06-1214	CRP-SB06-2224	CRP-SB06-2224-AVG	CRP-SB06-2224-D	CRP-SB07-0406	CRP-SB07-0810	CRP-SB07-1416	CRP-SB08-0810	CRP-SB08-0810-AVG
LOCATION ID			CRP-SB01	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB08
SAMPLE DATE			05/19/09	05/27/09	05/28/09	05/28/09	05/28/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09
TOP DEPTH			6 FT	12 FT	22 FT	22 FT	22 FT	4 FT	8 FT	14 FT	8 FT	8 FT
BOTTOM DEPTH			8 FT	14 FT	24 FT	24 FT	24 FT	6 FT	10 FT	16 FT	10 FT	10 FT
SACODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
2,4-DINITROTOLUENE	900	1600	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
2,6-DINITROTOLUENE	61000	6100	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
2-CHLORONAPHTHALENE		630000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
2-CHLOROPHENOL	50000	39000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
2-METHYLNAPHTHALENE	29000	31000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
2-METHYLPHENOL		310000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
2-NITROANILINE		18000	1600 U	1500 U	1500 U	1550 U	1600 U	1400 U	1500 U	1500 U	1500 U	1500 U
2-NITROPHENOL			410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
3,3'-DICHLOROBENZIDINE	1400	1100	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
3-NITROANILINE			1600 U	1500 U	1500 U	1550 U	1600 U	1400 U	1500 U	1500 U	1500 U	1500 U
4,6-DINITRO-2-METHYLPHENOL		610	1600 U	1500 U	1500 U	1550 U	1600 U	1400 U	1500 U	1500 U	1500 U	1500 U
4-BROMOPHENYL PHENYL ETHER			410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
4-CHLORO-3-METHYLPHENOL			410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
4-CHLOROANILINE	310000	2400	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
4-CHLOROPHENYL PHENYL ETHER			410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
4-METHYLPHENOL		31000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
4-NITROANILINE		24000	1600 U	1500 U	1500 U	1550 U	1600 U	1400 U	1500 U	1500 U	1500 U	1500 U
4-NITROPHENOL	7000		1600 U	1500 U	1500 U	1550 U	1600 U	1400 U	1500 U	1500 U	1500 U	1500 U
ACENAPHTHENE	29000	340000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB06-1214	CRP-SB06-2224	CRP-SB06-2224-AVG	CRP-SB06-2224-D	CRP-SB07-0406	CRP-SB07-0810	CRP-SB07-1416	CRP-SB08-0810	CRP-SB08-0810-AVG
LOCATION ID			CRP-SB01	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB08
SAMPLE DATE			05/19/09	05/27/09	05/28/09	05/28/09	05/28/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09
TOP DEPTH			6 FT	12 FT	22 FT	22 FT	22 FT	4 FT	8 FT	14 FT	8 FT	8 FT
BOTTOM DEPTH			8 FT	14 FT	24 FT	24 FT	24 FT	6 FT	10 FT	16 FT	10 FT	10 FT
SACODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
ACENAPHTHYLENE	23000	340000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
ACETOPHENONE		780000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
ANTHRACENE	29000	1700000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
ATRAZINE		2100	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
BENZALDEHYDE		780000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
BENZO(A)ANTHRACENE	900	150	56 J	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
BENZO(A)PYRENE	400	15	82 U	75 U	75 U	76.5 U	78 U	70 U	73 U	73 U	74 U	73.5 U
BENZO(B)FLUORANTHENE	900	150	53 J	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
BENZO(G,H,I)PERYLENE	800	170000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
BENZO(K)FLUORANTHENE	900	1500	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
BIS(2-CHLOROETHOXY)METHANE		18000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
BIS(2-CHLOROETHYL)ETHER	600	190	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	44 J	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
BUTYL BENZYL PHTHALATE		26000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
CAPROLACTAM		3100000	410 U	110 J	94 J	94 J	390 U	350 U	130 J	78 J	370 U	370 U
CARBAZOLE			820 U	750 U	750 U	765 U	780 U	700 U	730 U	730 U	740 U	735 U
CHRYSENE	400	15000	54 J	75 U	75 U	76.5 U	78 U	70 U	73 U	73 U	74 U	73.5 U
DIBENZO(A,H)ANTHRACENE	400	15	82 U	75 U	75 U	76.5 U	78 U	70 U	73 U	73 U	74 U	73.5 U
DIBENZOFURAN			410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
DIETHYL PHTHALATE	100000	4900000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB06-1214	CRP-SB06-2224	CRP-SB06-2224-AVG	CRP-SB06-2224-D	CRP-SB07-0406	CRP-SB07-0810	CRP-SB07-1416	CRP-SB08-0810	CRP-SB08-0810-AVG
LOCATION ID			CRP-SB01	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB08
SAMPLE DATE			05/19/09	05/27/09	05/28/09	05/28/09	05/28/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09
TOP DEPTH			6 FT	12 FT	22 FT	22 FT	22 FT	4 FT	8 FT	14 FT	8 FT	8 FT
BOTTOM DEPTH			8 FT	14 FT	24 FT	24 FT	24 FT	6 FT	10 FT	16 FT	10 FT	10 FT
SACODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
DIMETHYL PHTHALATE	1900000		410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
DI-N-BUTYL PHTHALATE	200000	610000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
DI-N-OCTYL PHTHALATE			410 U	380 U	380 U	385 U	390 U	350 UJ	370 UJ	360 UJ	370 UJ	370 UJ
FLUORANTHENE	20000	230000	110 J	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
FLUORENE	28000	230000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
HEXACHLOROBENZENE	400	300	82 U	75 U	75 U	76.5 U	78 U	70 U	73 U	73 U	74 U	73.5 U
HEXACHLOROBUTADIENE	8200	6200	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
HEXACHLOROCYCLOPENTADIENE	10000	37000	410 UJ	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
HEXACHLOROETHANE	46000	35000	820 U	750 U	750 U	765 U	780 U	700 U	730 U	730 U	740 U	735 U
HIGH MOLECULAR WEIGHT PAHS			366 J	290 U	290 U	290 U	300 U	270 U	280 U	270 U	280 U	280 U
INDENO(1,2,3-CD)PYRENE	900	150	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
ISOPHORONE		510000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
LOW MOLECULAR WEIGHT PAHS			72 J	380 U	380 U	380 U	390 U	350 U	370 U	360 U	370 U	370 U
NAPHTHALENE	29000	3900	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
NITROBENZENE		4400	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
N-NITROSO-DI-N-PROPYLAMINE		69	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
N-NITROSODIPHENYLAMINE		99000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
PENTACHLOROPHENOL	2100	3000	1600 U	1500 U	1500 U	1550 U	1600 U	1400 U	1500 U	1500 U	1500 U	1500 U
PHENANTHRENE	29000	170000	72 J	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB06-1214	CRP-SB06-2224	CRP-SB06-2224-AVG	CRP-SB06-2224-D	CRP-SB07-0406	CRP-SB07-0810	CRP-SB07-1416	CRP-SB08-0810	CRP-SB08-0810-AVG
LOCATION ID			CRP-SB01	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB08
SAMPLE DATE			05/19/09	05/27/09	05/28/09	05/28/09	05/28/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09
TOP DEPTH			6 FT	12 FT	22 FT	22 FT	22 FT	4 FT	8 FT	14 FT	8 FT	8 FT
BOTTOM DEPTH			8 FT	14 FT	24 FT	24 FT	24 FT	6 FT	10 FT	16 FT	10 FT	10 FT
SACODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
PHENOL	30000	1800000	410 U	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
PYRENE	1100	170000	93 J	380 U	380 U	385 U	390 U	350 U	370 U	360 U	370 U	370 U
TOTAL CHLORINATED VOCS			410 U	380 U	380 U	380 U	390 U	350 U	370 U	360 U	370 U	370 U
TOTAL PAHS			438 J	330 U	330 U	330 U	330 U	300 U	320 U	310 U	320 U	320 U
PESTICIDES/PCBS (UG/KG)												
4,4'-DDD		2000	0.82 U	0.75 U	0.75 U	0.765 U	0.78 U	0.7 U	0.73 U	0.73 U	0.74 U	0.735 U
4,4'-DDE		1400	0.82 U	0.75 U	0.75 U	0.765 U	0.78 U	0.31 J	0.73 U	0.73 U	0.29 J	0.29 J
4,4'-DDT	21	1700	0.74 J	0.75 U	0.32 J	0.32 J	0.78 U	0.99	0.73 U	0.73 U	0.54 J	0.54 J
ALDRIN		29	0.41 U	0.38 U	0.38 U	0.385 U	0.39 U	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U
ALPHA-BHC		77	0.41 U	0.38 U	0.46 J	0.33 J	0.2 J	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U
ALPHA-CHLORDANE	500	1600	0.41 U	0.38 U	0.38 U	0.385 U	0.39 U	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U
AROCLOR-1016	371	22	20 U	19 UJ	19 UJ	19 UJ	19 UJ	18 UJ	18 UJ	18 UJ	18 UJ	18 UJ
AROCLOR-1221	371	170	20 U	19 U	19 U	19 U	19 U	18 U	18 U	18 U	18 U	18 U
AROCLOR-1232	371	170	20 U	19 U	19 U	19 U	19 U	18 U	18 U	18 U	18 U	18 U
AROCLOR-1242	371	220	20 U	19 U	19 U	19 U	19 U	18 U	18 U	18 U	18 U	18 U
AROCLOR-1248	371	220	20 U	19 U	19 U	19 U	19 U	18 U	18 U	18 U	18 U	18 U
AROCLOR-1254	371	220	20 U	19 U	19 U	19 U	19 U	18 U	18 U	18 U	18 U	18 U
AROCLOR-1260	371	220	9.8 J	19 U	19 U	19 U	19 U	18 U	18 U	18 U	18 U	18 U
BETA-BHC		270	0.41 U	0.38 U	0.38 U	0.385 U	0.39 U	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U
DELTA-BHC		77	0.41 U	0.38 U	0.38 U	0.385 U	0.39 U	0.35 U	0.37 U	0.23 J	0.37 U	0.28 J
DIELDRIN	4.9	30	0.82 U	0.75 U	0.75 U	0.765 U	0.78 U	0.7 U	0.73 U	0.73 U	0.74 U	0.735 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB06-1214	CRP-SB06-2224	CRP-SB06-2224-AVG	CRP-SB06-2224-D	CRP-SB07-0406	CRP-SB07-0810	CRP-SB07-1416	CRP-SB08-0810	CRP-SB08-0810-AVG
LOCATION ID			CRP-SB01	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB08
SAMPLE DATE			05/19/09	05/27/09	05/28/09	05/28/09	05/28/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09
TOP DEPTH			6 FT	12 FT	22 FT	22 FT	22 FT	4 FT	8 FT	14 FT	8 FT	8 FT
BOTTOM DEPTH			8 FT	14 FT	24 FT	24 FT	24 FT	6 FT	10 FT	16 FT	10 FT	10 FT
SACODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
ENDOSULFAN I		37000	0.41 U	0.38 U	0.38 U	0.385 U	0.39 U	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U
ENDOSULFAN II		37000	0.8 J	0.75 U	0.75 U	0.765 U	0.78 U	0.7 U	0.73 U	0.73 U	0.74 U	0.735 U
ENDOSULFAN SULFATE		37000	2.5 UJ	0.75 U	0.75 U	0.765 U	0.78 U	0.78 J	0.73 U	0.73 U	0.74 U	0.735 U
ENDRIN		1800	0.82 U	0.75 U	0.75 U	0.765 U	0.78 U	0.7 U	0.73 U	0.73 U	0.74 U	0.735 U
ENDRIN ALDEHYDE		1800	0.82 U	0.75 U	0.75 U	0.765 U	0.78 U	0.7 U	0.73 U	0.73 U	0.74 U	0.735 U
ENDRIN KETONE		1800	0.82 U	0.75 U	0.75 U	0.765 U	0.78 U	0.7 U	0.73 U	0.73 U	0.74 U	0.735 U
GAMMA-BHC (LINDANE)		520	0.41 U	0.38 U	0.38 U	0.385 U	0.39 U	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U
GAMMA-CHLORDANE	500	1600	0.24 J	0.49 UJ	0.56 U	0.635 U	0.71 U	0.35 U	0.74 U	1.4 U	0.76 UJ	0.555 UJ
HEPTACHLOR		110	0.41 U	0.38 U	0.38 U	0.385 U	0.39 U	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U
HEPTACHLOR EPOXIDE		53	0.41 U	0.38 U	0.38 U	0.385 U	0.39 U	0.35 U	0.37 U	0.36 U	0.37 U	0.37 U
METHOXYCHLOR		31000	0.41 U	0.38 U	0.38 U	0.385 U	0.39 U	1.2 UJ	0.37 U	0.36 U	0.37 U	0.37 U
TOTAL AROCLOR	371	220	9.8 J	19 UJ	19 UJ	19 UJ	19 UJ	18 UJ	18 UJ	18 UJ	18 UJ	18 UJ
TOTAL DDD/DDE/DDT			0.74 J	0.75 U	0.32 J	0.32 J	0.78 U	1.3 J	0.73 U	0.73 U	0.83 J	0.83 J
TOXAPHENE		440	41 U	38 U	38 U	38.5 U	39 U	35 U	37 U	36 U	37 U	37 U
METALS (MG/KG)												
ALUMINUM		7700	9610	4370 J	4040 J	4435 J	4830	7170 J	3870 J	4020 J	4840 J	4435 J
ANTIMONY	0.27	3.1	0.92 UJ	0.83 U	1.7 U	1.7 U	1.7 U	1.6 U	0.82 U	1.6 U	0.83 U	0.825 U
ARSENIC	7	0.39	8.7	6.4	10	9.8	9.6	9.7	8.7	6	6.1	6.65
BARIUM	330	1500	26 J	18 J	17.9 J	17.9 J	17.9 J	28.1 J	16.3 J	21.2 J	17.9 J	20.7 J
BERYLLIUM	0.4	16	0.39	0.26 J	0.28 J	0.305 J	0.33	0.3	0.24 J	0.26 J	0.26 J	0.26 J
CADMIUM	0.36	7	0.19 J	0.28 U	0.084 J	0.122 J	0.16 J	0.095 J	0.27 U	0.27 U	0.088 J	0.088 J
CALCIUM			418 J	389 J	1190 J	1240 J	1290 J	491 J	636 J	1590 J	279 J	278 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB06-1214	CRP-SB06-2224	CRP-SB06-2224-AVG	CRP-SB06-2224-D	CRP-SB07-0406	CRP-SB07-0810	CRP-SB07-1416	CRP-SB08-0810	CRP-SB08-0810-AVG
LOCATION ID			CRP-SB01	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB06	CRP-SB07	CRP-SB07	CRP-SB07	CRP-SB08	CRP-SB08
SAMPLE DATE			05/19/09	05/27/09	05/28/09	05/28/09	05/28/09	05/26/09	05/26/09	05/26/09	05/26/09	05/26/09
TOP DEPTH			6 FT	12 FT	22 FT	22 FT	22 FT	4 FT	8 FT	14 FT	8 FT	8 FT
BOTTOM DEPTH			8 FT	14 FT	24 FT	24 FT	24 FT	6 FT	10 FT	16 FT	10 FT	10 FT
SACODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
CHROMIUM	26	280	12 J	9.7 J	14.9 J	15.6 J	16.3 J	11.8 J	11 J	15.2 J	10.5 J	10.25 J
COBALT	13	2.3	10	11.1	24	22.85	21.7	18.4	18.3	13.4	14.2	15.05
COPPER	28	310	20.4 J	12.5	22.1	21.75	21.4	28.2	23.4	23.8	19.4	19.85
IRON		5500	26800	23900	34500	31450	28400	37000	26600	33600	27200	26900
LEAD	11	400	18.3 J	5.3 J	9.6 J	9.7 J	9.8 J	10.7 J	8 J	8 J	6.2 J	6.65 J
MAGNESIUM			2180	1590 J	1760 J	1835 J	1910 J	2440 J	1280 J	3130 J	1700 J	1425 J
MANGANESE	220	180	442 J	377	747	708	669	920	524	513	430	480
MERCURY	0.1	0.43	0.028 J	0.034 U	0.038 U	0.0385 U	0.039 U	0.034 U	0.032 U	0.035 U	0.038 U	0.0355 U
NICKEL	38	150	21.2	20.1	43	41.05	39.1	37.2	37.3	31.7	23.8	24.8
POTASSIUM			266 J	377 J	413 J	448 J	483 J	544 J	460 J	440 J	320 J	325 J
SELENIUM	0.52	39	0.43	0.36 U	0.24 UJ	0.305 UJ	0.37 U	0.35 UJ	0.27 UJ	0.18 UJ	0.36 U	0.305 UJ
SILVER	4.2	39	0.18 U	0.17 UJ	0.17 UJ	0.17 UJ	0.17 U	0.16 UJ	0.16 UJ	0.16 UJ	0.17 UJ	0.165 UJ
SODIUM			308 U	277 U	56.4 J	64.4 J	72.4 J	260 U	274 U	268 U	276 U	274.5 U
THALLIUM	1	0.51	0.49 U	0.44 U	0.45 U	0.455 U	0.46 U	0.42 U	0.44 U	0.43 U	0.44 U	0.44 U
VANADIUM	7.8	39	15.9	12	15.5	14.7	13.9	15.8	13.7	15.5	14.3	13.75
ZINC	46	2300	66.8	68.8 J	159 J	152 J	145 J	79.3 J	77.1 J	71 J	73.8 J	78.95 J
PETROLEUM HYDROCARBONS (MG/KG)												
DIESEL RANGE ORGANICS	500		17 J	8	9.6	9.5	9.4	19	9	11	14	14
GASOLINE RANGE ORGANICS	500		3.2 U	2.4 U	2.6 U	2.5 U	2.4 U	2.2 U	2.4 U	2.4 U	2.8 U	2.45 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB08-0810-D	CRP-SB08-1214	CRP-SB08-1416	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840	CRP-SB09-3840-AVG	CRP-SB09-3840-D	CRP-SB10-0810
LOCATION ID			CRP-SB01	CRP-SB08	CRP-SB08	CRP-SB08	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB10
SAMPLE DATE			05/19/09	05/26/09	05/26/09	05/26/09	05/18/09	05/18/09	05/18/09	05/18/09	05/18/09	05/21/09
TOP DEPTH			6 FT	8 FT	12 FT	14 FT	6 FT	12 FT	38 FT	38 FT	38 FT	8 FT
BOTTOM DEPTH			8 FT	10 FT	14 FT	16 FT	8 FT	14 FT	40 FT	40 FT	40 FT	10 FT
SACODE			NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
QC TYPE	PAL	RES RSL	NM	FD	NM	NM	NM	NM	NM	NM	FD	NM
VOLATILES (UG/KG)												
1,1,1-TRICHLOROETHANE	540000	900000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
1,1,2,2-TETRACHLOROETHANE	1300	590	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 UJ	5 U	4.8 UJ	4.6 UJ	5.1 U
1,1,2-TRICHLOROETHANE	3600	1100	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
1,1-DICHLOROETHANE	920000	3400	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
1,1-DICHLOROETHENE	200	25000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
1,2,4-TRICHLOROBENZENE	20000	8700	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 UJ	5 U	4.8 UJ	4.6 UJ	5.1 U
1,2-DIBROMO-3-CHLOROPROPANE	500	5.6	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 UJ	5 U	4.8 UJ	4.6 UJ	5.1 U
1,2-DIBROMOETHANE	10	34	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
1,2-DICHLOROBENZENE	510000	200000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 UJ	5 U	4.8 UJ	4.6 UJ	5.1 U
1,2-DICHLOROETHANE	900	450	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
1,2-DICHLOROPROPANE	1900	930	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
1,3-DICHLOROBENZENE	430000		7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 UJ	5 U	4.8 UJ	4.6 UJ	5.1 U
1,4-DICHLOROBENZENE	20000	2600	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 UJ	5 U	4.8 UJ	4.6 UJ	5.1 U
2-BUTANONE	10000000	2800000	73 UJ	1900 UJ	2400 UJ	2200 UJ	45 U	44 U	50 U	48 UJ	46 UJ	51 U
2-HEXANONE			15 UJ	380 UJ	480 U	440 U	9 UJ	8.8 UJ	10 UJ	9.6 UJ	9.2 UJ	10 U
4-METHYL-2-PENTANONE	1200000	530000	15 UJ	380 UJ	480 U	440 U	9 U	8.8 U	10 U	9.6 UJ	9.2 UJ	10 U
ACETONE	7800000	6100000	73 UJ	1900 UJ	2400 U	2200 U	1.8 UJ	1.8 UJ	2 UJ	1.9 UJ	1.8 UJ	51 U
BENZENE	2500	1100	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
BROMODICHLOROMETHANE	10000	280	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB08-0810-D	CRP-SB08-1214	CRP-SB08-1416	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840	CRP-SB09-3840-AVG	CRP-SB09-3840-D	CRP-SB10-0810
LOCATION ID			CRP-SB01	CRP-SB08	CRP-SB08	CRP-SB08	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB10
SAMPLE DATE			05/19/09	05/26/09	05/26/09	05/26/09	05/18/09	05/18/09	05/18/09	05/18/09	05/18/09	05/21/09
TOP DEPTH			6 FT	8 FT	12 FT	14 FT	6 FT	12 FT	38 FT	38 FT	38 FT	8 FT
BOTTOM DEPTH			8 FT	10 FT	14 FT	16 FT	8 FT	14 FT	40 FT	40 FT	40 FT	10 FT
SACODE			NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
QC TYPE	PAL	RES RSL	NM	FD	NM	NM	NM	NM	NM	NM	FD	NM
BROMOFORM	81000	61000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
BROMOMETHANE	800	790	15 UJ	380 UJ	480 U	440 U	9 U	8.8 U	10 U	9.6 UJ	9.2 UJ	10 U
BTEX			7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
CARBON DISULFIDE		67000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
CARBON TETRACHLORIDE	1500	250	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
CHLOROBENZENE	40000	31000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
CHLORODIBROMOMETHANE	7600	700	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
CHLOROETHANE		1500000	15 UJ	380 UJ	480 U	440 U	9 U	8.8 U	10 U	9.6 UJ	9.2 UJ	10 U
CHLOROFORM	1200	300	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
CHLOROMETHANE		120000	15 UJ	380 UJ	480 U	440 U	9 U	8.8 U	10 U	9.6 UJ	9.2 UJ	10 U
CIS-1,2-DICHLOROETHENE	630000	78000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
CIS-1,3-DICHLOROPROPENE		1700	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
CYCLOHEXANE		720000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
DICHLORODIFLUOROMETHANE		19000	15 UJ	380 UJ	480 UJ	440 UJ	9 U	8.8 U	10 U	9.6 UJ	9.2 UJ	10 U
ETHYLBENZENE	71000	5700	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
ISOPROPYLBENZENE	27000	220000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
METHYL ACETATE		7800000	15 UJ	380 UJ	480 U	440 U	9 U	8.8 U	10 U	9.6 UJ	9.2 UJ	10 U
METHYL CYCLOHEXANE			7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
METHYL TERT-BUTYL ETHER	390000	39000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
METHYLENE CHLORIDE	45000	11000	15 UJ	380 UJ	480 U	440 U	9 U	8.8 U	10 U	9.6 UJ	9.2 UJ	10 U
STYRENE	13000	650000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB08-0810-D	CRP-SB08-1214	CRP-SB08-1416	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840	CRP-SB09-3840-AVG	CRP-SB09-3840-D	CRP-SB10-0810
LOCATION ID			CRP-SB01	CRP-SB08	CRP-SB08	CRP-SB08	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB10
SAMPLE DATE			05/19/09	05/26/09	05/26/09	05/26/09	05/18/09	05/18/09	05/18/09	05/18/09	05/18/09	05/21/09
TOP DEPTH			6 FT	8 FT	12 FT	14 FT	6 FT	12 FT	38 FT	38 FT	38 FT	8 FT
BOTTOM DEPTH			8 FT	10 FT	14 FT	16 FT	8 FT	14 FT	40 FT	40 FT	40 FT	10 FT
SACODE			NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
QC TYPE	PAL	RES RSL	NM	FD	NM	NM	NM	NM	NM	NM	FD	NM
TETRACHLOROETHENE	12000	570	7.3 UJ	320 J	2100	890	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
TOLUENE	190000	500000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
TOTAL 1,2-DICHLOROETHENE		70000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
TOTAL CHLORINATED ETHENES			9.2 UJ	320 J	2100	890	5.6 U	5.5 U	6.2 U	6 UJ	5.8 UJ	6.3 U
TOTAL CHLORINATED VOCS			9.1 UJ	320 J	2100 J	890 J	5.5 U	5.4 UJ	6.2 U	5.9 UJ	5.7 UJ	6.2 U
TOTAL XYLENES	110000	60000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
TRANS-1,2-DICHLOROETHENE	1100000	11000	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
TRANS-1,3-DICHLOROPROPENE		1700	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
TRICHLOROETHENE	13000	2800	7.3 UJ	190 UJ	240 U	220 U	4.5 U	4.4 U	5 U	4.8 UJ	4.6 UJ	5.1 U
TRICHLOROFLUOROMETHANE		80000	15 UJ	380 UJ	480 U	440 U	9 U	8.8 U	10 U	9.6 UJ	9.2 UJ	10 U
VINYL CHLORIDE	20	60	15 UJ	380 UJ	480 U	440 U	9 U	8.8 U	10 U	9.6 UJ	9.2 UJ	10 U
SEMIVOLATILES (UG/KG)												
1,1-BIPHENYL	800	390000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
2,2'-OXYBIS(1-CHLOROPROPANE)		3500	820 U	730 U	690 U	760 U	780 U	730 U	770 U	775 U	780 U	740 U
2,4,5-TRICHLOROPHENOL	9000	610000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
2,4,6-TRICHLOROPHENOL	4000	44000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
2,4-DICHLOROPHENOL	30000	18000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
2,4-DIMETHYLPHENOL	1400000	120000	1600 U	1500 U	1400 U	1500 U	1600 U	1500 U	1500 U	1550 U	1600 U	1500 U
2,4-DINITROPHENOL	20000	12000	4100 U	3700 U	3500 U	3800 U	3900 U	3600 U	3900 U	3900 U	3900 U	3700 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB08-0810-D	CRP-SB08-1214	CRP-SB08-1416	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840	CRP-SB09-3840-AVG	CRP-SB09-3840-D	CRP-SB10-0810
LOCATION ID			CRP-SB01	CRP-SB08	CRP-SB08	CRP-SB08	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB10
SAMPLE DATE			05/19/09	05/26/09	05/26/09	05/26/09	05/18/09	05/18/09	05/18/09	05/18/09	05/18/09	05/21/09
TOP DEPTH			6 FT	8 FT	12 FT	14 FT	6 FT	12 FT	38 FT	38 FT	38 FT	8 FT
BOTTOM DEPTH			8 FT	10 FT	14 FT	16 FT	8 FT	14 FT	40 FT	40 FT	40 FT	10 FT
SACODE			NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
QC TYPE	PAL	RES RSL	NM	FD	NM	NM	NM	NM	NM	NM	FD	NM
2,4-DINITROTOLUENE	900	1600	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
2,6-DINITROTOLUENE	61000	6100	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
2-CHLORONAPHTHALENE		630000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
2-CHLOROPHENOL	50000	39000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
2-METHYLNAPHTHALENE	29000	31000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
2-METHYLPHENOL		310000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
2-NITROANILINE		18000	1600 U	1500 U	1400 U	1500 U	1600 U	1500 U	1500 U	1550 U	1600 U	1500 U
2-NITROPHENOL			410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
3,3'-DICHLOROBENZIDINE	1400	1100	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
3-NITROANILINE			1600 U	1500 U	1400 U	1500 U	1600 U	1500 U	1500 U	1550 U	1600 U	1500 U
4,6-DINITRO-2-METHYLPHENOL		610	1600 U	1500 U	1400 U	1500 U	1600 U	1500 U	1500 U	1550 U	1600 U	1500 U
4-BROMOPHENYL PHENYL ETHER			410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
4-CHLORO-3-METHYLPHENOL			410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
4-CHLOROANILINE	310000	2400	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
4-CHLOROPHENYL PHENYL ETHER			410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
4-METHYLPHENOL		31000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
4-NITROANILINE		24000	1600 U	1500 U	1400 U	1500 U	1600 U	1500 U	1500 U	1550 U	1600 U	1500 U
4-NITROPHENOL	7000		1600 U	1500 U	1400 U	1500 U	1600 UJ	1500 UJ	1500 UJ	1550 UJ	1600 UJ	1500 U
ACENAPHTHENE	29000	340000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB08-0810-D	CRP-SB08-1214	CRP-SB08-1416	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840	CRP-SB09-3840-AVG	CRP-SB09-3840-D	CRP-SB10-0810
LOCATION ID			CRP-SB01	CRP-SB08	CRP-SB08	CRP-SB08	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB10
SAMPLE DATE			05/19/09	05/26/09	05/26/09	05/26/09	05/18/09	05/18/09	05/18/09	05/18/09	05/18/09	05/21/09
TOP DEPTH			6 FT	8 FT	12 FT	14 FT	6 FT	12 FT	38 FT	38 FT	38 FT	8 FT
BOTTOM DEPTH			8 FT	10 FT	14 FT	16 FT	8 FT	14 FT	40 FT	40 FT	40 FT	10 FT
SACODE			NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
QC TYPE	PAL	RES RSL	NM	FD	NM	NM	NM	NM	NM	NM	FD	NM
ACENAPHTHYLENE	23000	340000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
ACETOPHENONE		780000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
ANTHRACENE	29000	1700000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
ATRAZINE		2100	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
BENZALDEHYDE		780000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
BENZO(A)ANTHRACENE	900	150	56 J	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
BENZO(A)PYRENE	400	15	82 U	73 U	69 U	76 U	27 J	73 U	77 U	77.5 U	78 U	74 U
BENZO(B)FLUORANTHENE	900	150	53 J	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
BENZO(G,H,I)PERYLENE	800	170000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
BENZO(K)FLUORANTHENE	900	1500	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
BIS(2-CHLOROETHOXY)METHANE		18000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
BIS(2-CHLOROETHYL)ETHER	600	190	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	44 J	370 U	350 U	150 J	48 J	60 J	62 J	63.5 J	65 J	500
BUTYL BENZYL PHTHALATE		26000	410 U	370 U	350 U	380 U	390 U	360 U	51 J	49 J	47 J	370 U
CAPROLACTAM		3100000	410 U	370 U	350 U	100 J	390 U	79 J	390 U	390 U	390 U	370 U
CARBAZOLE			820 U	730 U	690 U	760 U	780 U	730 U	770 U	775 U	780 U	740 U
CHRYSENE	400	15000	54 J	73 U	69 U	76 U	78 U	73 U	77 U	77.5 U	78 U	74 U
DIBENZO(A,H)ANTHRACENE	400	15	82 U	73 U	69 U	76 U	78 U	73 U	77 U	77.5 U	78 U	74 U
DIBENZOFURAN			410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
DIETHYL PHTHALATE	100000	4900000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB08-0810-D	CRP-SB08-1214	CRP-SB08-1416	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840	CRP-SB09-3840-AVG	CRP-SB09-3840-D	CRP-SB10-0810
LOCATION ID			CRP-SB01	CRP-SB08	CRP-SB08	CRP-SB08	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB10
SAMPLE DATE			05/19/09	05/26/09	05/26/09	05/26/09	05/18/09	05/18/09	05/18/09	05/18/09	05/18/09	05/21/09
TOP DEPTH			6 FT	8 FT	12 FT	14 FT	6 FT	12 FT	38 FT	38 FT	38 FT	8 FT
BOTTOM DEPTH			8 FT	10 FT	14 FT	16 FT	8 FT	14 FT	40 FT	40 FT	40 FT	10 FT
SACODE			NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
QC TYPE	PAL	RES RSL	NM	FD	NM	NM	NM	NM	NM	NM	FD	NM
DIMETHYL PHTHALATE	1900000		410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
DI-N-BUTYL PHTHALATE	200000	610000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
DI-N-OCTYL PHTHALATE			410 U	370 U	350 UJ	380 UJ	390 U	360 U	390 U	390 U	390 U	370 U
FLUORANTHENE	20000	230000	110 J	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
FLUORENE	28000	230000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
HEXACHLOROBENZENE	400	300	82 U	73 U	69 U	76 U	78 U	73 U	77 U	77.5 U	78 U	74 U
HEXACHLOROBUTADIENE	8200	6200	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
HEXACHLOROCYCLOPENTADIENE	10000	37000	410 UJ	370 U	350 U	380 U	390 UJ	360 UJ	390 UJ	390 UJ	390 UJ	370 U
HEXACHLOROETHANE	46000	35000	820 U	730 U	690 U	760 U	780 U	730 U	770 U	775 U	780 U	740 U
HIGH MOLECULAR WEIGHT PAHS			366 J	280 U	270 U	290 U	27 J	270 U	300 U	300 U	300 U	280 U
INDENO(1,2,3-CD)PYRENE	900	150	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
ISOPHORONE		510000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
LOW MOLECULAR WEIGHT PAHS			72 J	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
NAPHTHALENE	29000	3900	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
NITROBENZENE		4400	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
N-NITROSO-DI-N-PROPYLAMINE		69	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
N-NITROSODIPHENYLAMINE		99000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
PENTACHLOROPHENOL	2100	3000	1600 U	1500 U	1400 U	1500 U	1600 U	1500 U	1500 U	1550 U	1600 U	1500 U
PHENANTHRENE	29000	170000	72 J	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB08-0810-D	CRP-SB08-1214	CRP-SB08-1416	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840	CRP-SB09-3840-AVG	CRP-SB09-3840-D	CRP-SB10-0810
LOCATION ID			CRP-SB01	CRP-SB08	CRP-SB08	CRP-SB08	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB10
SAMPLE DATE			05/19/09	05/26/09	05/26/09	05/26/09	05/18/09	05/18/09	05/18/09	05/18/09	05/18/09	05/21/09
TOP DEPTH			6 FT	8 FT	12 FT	14 FT	6 FT	12 FT	38 FT	38 FT	38 FT	8 FT
BOTTOM DEPTH			8 FT	10 FT	14 FT	16 FT	8 FT	14 FT	40 FT	40 FT	40 FT	10 FT
SACODE			NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
QC TYPE	PAL	RES RSL	NM	FD	NM	NM	NM	NM	NM	NM	FD	NM
PHENOL	30000	1800000	410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
PYRENE	1100	170000	93 J	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
TOTAL CHLORINATED VOCS			410 U	370 U	350 U	380 U	390 U	360 U	390 U	390 U	390 U	370 U
TOTAL PAHS			438 J	320 U	300 U	330 U	27 J	310 U	330 U	330 U	330 U	320 U
PESTICIDES/PCBS (UG/KG)												
4,4'-DDD		2000	0.82 U	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U	0.74 U
4,4'-DDE		1400	0.82 U	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U	0.74 U
4,4'-DDT	21	1700	0.74 J	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U	0.74 U
ALDRIN		29	0.41 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U	0.37 U
ALPHA-BHC		77	0.41 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U	0.37 U
ALPHA-CHLORDANE	500	1600	0.41 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U	0.37 U
AROCLOR-1016	371	22	20 U	18 UJ	17 UJ	19 UJ	19 U	18 U	19 U	19.5 U	20 U	18 U
AROCLOR-1221	371	170	20 U	18 U	17 U	19 U	19 U	18 U	19 U	19.5 U	20 U	18 U
AROCLOR-1232	371	170	20 U	18 U	17 U	19 U	19 U	18 U	19 U	19.5 U	20 U	18 U
AROCLOR-1242	371	220	20 U	18 U	17 U	19 U	19 U	18 U	19 U	19.5 U	20 U	18 U
AROCLOR-1248	371	220	20 U	18 U	17 U	19 U	19 U	18 U	19 U	19.5 U	20 U	18 U
AROCLOR-1254	371	220	20 U	18 U	17 U	19 U	19 U	18 U	19 U	19.5 U	20 U	18 U
AROCLOR-1260	371	220	9.8 J	18 U	17 U	19 U	19 U	18 U	19 U	19.5 U	20 U	18 U
BETA-BHC		270	0.41 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U	0.37 U
DELTA-BHC		77	0.41 U	0.28 J	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U	0.37 U
DIELDRIN	4.9	30	0.82 U	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U	0.74 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB08-0810-D	CRP-SB08-1214	CRP-SB08-1416	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840	CRP-SB09-3840-AVG	CRP-SB09-3840-D	CRP-SB10-0810
LOCATION ID			CRP-SB01	CRP-SB08	CRP-SB08	CRP-SB08	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB10
SAMPLE DATE			05/19/09	05/26/09	05/26/09	05/26/09	05/18/09	05/18/09	05/18/09	05/18/09	05/18/09	05/21/09
TOP DEPTH			6 FT	8 FT	12 FT	14 FT	6 FT	12 FT	38 FT	38 FT	38 FT	8 FT
BOTTOM DEPTH			8 FT	10 FT	14 FT	16 FT	8 FT	14 FT	40 FT	40 FT	40 FT	10 FT
SACODE			NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
QC TYPE	PAL	RES RSL	NM	FD	NM	NM	NM	NM	NM	NM	FD	NM
ENDOSULFAN I		37000	0.41 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U	0.37 U
ENDOSULFAN II		37000	0.8 J	0.73 U	0.69 U	0.76 U	1.3	1.7	2.8	2.9	3	0.93
ENDOSULFAN SULFATE		37000	2.5 UJ	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U	0.74 U
ENDRIN		1800	0.82 U	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U	0.74 U
ENDRIN ALDEHYDE		1800	0.82 U	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U	0.74 U
ENDRIN KETONE		1800	0.82 U	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.775 U	0.78 U	0.74 U
GAMMA-BHC (LINDANE)		520	0.41 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U	0.37 U
GAMMA-CHLORDANE	500	1600	0.24 J	0.35 UJ	0.35 U	0.76 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U	0.29 J
HEPTACHLOR		110	0.41 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U	0.37 U
HEPTACHLOR EPOXIDE		53	0.41 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U	0.37 U
METHOXYCHLOR		31000	0.41 U	0.37 U	0.35 U	0.38 U	0.39 U	0.36 U	0.39 U	0.39 U	0.39 U	0.37 U
TOTAL AROCLOR	371	220	9.8 J	18 UJ	17 UJ	19 UJ	19 U	18 U	19 U	20 U	20 U	18 U
TOTAL DDD/DDE/DDT			0.74 J	0.73 U	0.69 U	0.76 U	0.78 U	0.73 U	0.77 U	0.78 U	0.78 U	0.74 U
TOXAPHENE		440	41 U	37 U	35 U	38 U	39 U	36 U	39 U	39 U	39 U	37 U
METALS (MG/KG)												
ALUMINUM		7700	9610	4030 J	4700 J	3790 J	7370	5390	4810	4165	3520	9150
ANTIMONY	0.27	3.1	0.92 UJ	0.82 U	1.6 U	0.84 U	0.85 UJ	1.6 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.6 U
ARSENIC	7	0.39	8.7	7.2	6.3	4	7.5	7.3	22.3	24.55	26.8	11.7
BARIUM	330	1500	26 J	23.5 J	21.3 J	14.3 J	25.9 J	25.8 J	24.5 J	20.55 J	16.6 J	15.4 J
BERYLLIUM	0.4	16	0.39	0.26 J	0.28	0.27 J	0.36	0.29	0.32	0.325	0.33	0.317
CADMIUM	0.36	7	0.19 J	0.27 U	0.26 U	0.28 U	0.13 J	0.11 J	0.18 J	0.18 J	0.18 J	0.27 U
CALCIUM			418 J	277 J	275 J	386 J	382 J	553 J	1300 J	1345 J	1390 J	619 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB08-0810-D	CRP-SB08-1214	CRP-SB08-1416	CRP-SB09-0608	CRP-SB09-1214	CRP-SB09-3840	CRP-SB09-3840-AVG	CRP-SB09-3840-D	CRP-SB10-0810
LOCATION ID			CRP-SB01	CRP-SB08	CRP-SB08	CRP-SB08	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB09	CRP-SB10
SAMPLE DATE			05/19/09	05/26/09	05/26/09	05/26/09	05/18/09	05/18/09	05/18/09	05/18/09	05/18/09	05/21/09
TOP DEPTH			6 FT	8 FT	12 FT	14 FT	6 FT	12 FT	38 FT	38 FT	38 FT	8 FT
BOTTOM DEPTH			8 FT	10 FT	14 FT	16 FT	8 FT	14 FT	40 FT	40 FT	40 FT	10 FT
SACODE			NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
QC TYPE	PAL	RES RSL	NM	FD	NM	NM	NM	NM	NM	NM	FD	NM
CHROMIUM	26	280	12 J	10 J	9.8 J	7.5 J	10.7 J	11.6 J	18.3 J	19.15 J	20 J	15.2 J
COBALT	13	2.3	10	15.9	12.8	3.4	11.2	17	29.2	31.3	33.4	16.1
COPPER	28	310	20.4 J	20.3	19.1	30.1	15 J	24.2 J	19.3 J	15.45 J	11.6 J	30.5 J
IRON		5500	26800	26600	31000	16700	22800	41700 J	47600 J	50750 J	53900 J	40300
LEAD	11	400	18.3 J	7.1 J	7 J	7.1 J	9.1 J	6.5 J	5.7 J	5.6 J	5.5 J	17.9 J
MAGNESIUM			2180	1150 J	1360 J	940 J	1850	2540	2520	2125	1730	3470 J
MANGANESE	220	180	442 J	530	341	73.7	394 J	966 J	1160 J	1340 J	1520 J	464
MERCURY	0.1	0.43	0.028 J	0.033 U	0.035 U	0.038 U	0.035 U	0.033 U	0.037 U	0.036 U	0.035 U	0.038 U
NICKEL	38	150	21.2	25.8	24.2	10.1	18.7	34.1	44.5	47.75	51	30.9 J
POTASSIUM			266 J	330 J	488 J	344 J	541 J	464 J	1350 J	886.5 J	423 J	377
SELENIUM	0.52	39	0.43	0.25 UJ	0.25 UJ	0.25 UJ	0.37 U	0.28 J	0.22 J	0.2 J	0.18 J	0.36 U
SILVER	4.2	39	0.18 U	0.16 UJ	0.16 UJ	0.17 UJ	0.17 U	0.16 U	0.18 U	0.18 U	0.18 U	0.16 U
SODIUM			308 U	273 U	259 U	279 U	285 U	274 U	83.9 J	91.6 J	99.3 J	274 U
THALLIUM	1	0.51	0.49 U	0.44 U	0.41 U	0.45 U	0.46 U	0.44 U	0.47 U	0.47 U	0.47 U	0.44 U
VANADIUM	7.8	39	15.9	13.2	14.6	11.3	13.8	15.6	18.4	17.3	16.2	14.2
ZINC	46	2300	66.8	84.1 J	73.9 J	31.7 J	51	71.5	222	252	282	64.7
PETROLEUM HYDROCARBONS (MG/KG)												
DIESEL RANGE ORGANICS	500		17 J	14	13	9.5	9	8.9	9.3	8.45 J	7.6 J	170
GASOLINE RANGE ORGANICS	500		3.2 U	2.1 U	2.6 U	2.4 U	51	4.3	4.4	5.6	6.8	2.7 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB10-1214	CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214	CRP-SB11-1618	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708	CRP-TP04-0506
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB10	CRP-SB11	CRP-SB11	CRP-SB11	CRP-TP01A	CRP-TP01B	CRP-TP01B	CRP-TP04
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/22/09	05/22/09	05/22/09	05/11/09	05/11/09	05/11/09	05/12/09
TOP DEPTH			6 FT	12 FT	16 FT	8 FT	12 FT	16 FT	5 FT	5 FT	7 FT	5 FT
BOTTOM DEPTH			8 FT	14 FT	18 FT	10 FT	14 FT	18 FT	6 FT	6 FT	8 FT	6 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
VOLATILES (UG/KG)												
1,1,1-TRICHLOROETHANE	540000	900000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
1,1,2,2-TETRACHLOROETHANE	1300	590	7.3 UJ	5.7 U	4.6 UJ	4.9 U	4.2 UJ	4.1 UJ	4.9 U	5.2 U	4 U	4.7 U
1,1,2-TRICHLOROETHANE	3600	1100	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
1,1-DICHLOROETHANE	920000	3400	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
1,1-DICHLOROETHENE	200	25000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
1,2,4-TRICHLOROBENZENE	20000	8700	7.3 UJ	5.7 U	4.6 UJ	4.9 U	4.2 UJ	4.1 UJ	4.9 U	5.2 U	4 U	4.7 U
1,2-DIBROMO-3-CHLOROPROPANE	500	5.6	7.3 UJ	5.7 U	4.6 UJ	4.9 U	4.2 UJ	4.1 UJ	4.9 U	5.2 U	4 U	4.7 U
1,2-DIBROMOETHANE	10	34	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
1,2-DICHLOROBENZENE	510000	200000	7.3 UJ	5.7 U	4.6 UJ	4.9 U	4.2 UJ	4.1 UJ	4.9 U	5.2 U	4 U	4.7 U
1,2-DICHLOROETHANE	900	450	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
1,2-DICHLOROPROPANE	1900	930	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
1,3-DICHLOROBENZENE	430000		7.3 UJ	5.7 U	4.6 UJ	4.9 U	4.2 UJ	4.1 UJ	4.9 U	5.2 U	4 U	4.7 U
1,4-DICHLOROBENZENE	20000	2600	7.3 UJ	5.7 U	4.6 UJ	4.9 U	4.2 UJ	4.1 UJ	4.9 U	5.2 U	4 U	4.7 U
2-BUTANONE	10000000	2800000	73 UJ	57 U	46 U	49 U	42 U	41 U	49 UJ	52 UJ	40 UJ	47 UJ
2-HEXANONE			15 UJ	11 U	9.2 U	9.7 U	8.4 U	8.2 U	9.8 U	10 U	8 U	9.3 U
4-METHYL-2-PENTANONE	1200000	530000	15 UJ	11 U	9.2 U	9.7 U	8.4 U	8.2 U	9.8 U	10 U	8 U	9.3 U
ACETONE	7800000	6100000	73 UJ	57 U	46 U	49 U	42 U	41 U	49 UJ	52 UJ	40 UJ	47 UJ
BENZENE	2500	1100	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
BROMODICHLOROMETHANE	10000	280	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB10-1214	CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214	CRP-SB11-1618	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708	CRP-TP04-0506
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB10	CRP-SB11	CRP-SB11	CRP-SB11	CRP-TP01A	CRP-TP01B	CRP-TP01B	CRP-TP04
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/22/09	05/22/09	05/22/09	05/11/09	05/11/09	05/11/09	05/12/09
TOP DEPTH			6 FT	12 FT	16 FT	8 FT	12 FT	16 FT	5 FT	5 FT	7 FT	5 FT
BOTTOM DEPTH			8 FT	14 FT	18 FT	10 FT	14 FT	18 FT	6 FT	6 FT	8 FT	6 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
BROMOFORM	81000	61000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
BROMOMETHANE	800	790	15 UJ	11 U	9.2 U	9.7 U	8.4 U	8.2 U	9.8 U	10 U	8 U	9.3 U
BTEX			7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
CARBON DISULFIDE		67000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
CARBON TETRACHLORIDE	1500	250	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
CHLOROBENZENE	40000	31000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
CHLORODIBROMOMETHANE	7600	700	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
CHLOROETHANE		1500000	15 UJ	11 U	9.2 U	9.7 U	8.4 U	8.2 U	9.8 U	10 U	8 U	9.3 U
CHLOROFORM	1200	300	7.3 UJ	5.7 U	4.6 U	0.91 J	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
CHLOROMETHANE		120000	15 UJ	11 U	9.2 U	9.7 U	8.4 U	8.2 U	9.8 U	10 U	8 U	9.3 U
CIS-1,2-DICHLOROETHENE	630000	78000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
CIS-1,3-DICHLOROPROPENE		1700	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
CYCLOHEXANE		720000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
DICHLORODIFLUOROMETHANE		19000	15 UJ	11 U	9.2 U	9.7 U	8.4 U	8.2 U	9.8 U	10 U	8 U	9.3 U
ETHYLBENZENE	71000	5700	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
ISOPROPYLBENZENE	27000	220000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
METHYL ACETATE		7800000	15 UJ	11 U	9.2 U	9.7 U	8.4 U	8.2 U	9.8 U	10 U	8 U	9.3 U
METHYL CYCLOHEXANE			7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
METHYL TERT-BUTYL ETHER	390000	39000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
METHYLENE CHLORIDE	45000	11000	15 UJ	11 U	9.2 U	9.7 U	8.4 U	8.2 U	9.8 U	10 U	8 U	9.3 U
STYRENE	13000	650000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB10-1214	CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214	CRP-SB11-1618	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708	CRP-TP04-0506
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB10	CRP-SB11	CRP-SB11	CRP-SB11	CRP-TP01A	CRP-TP01B	CRP-TP01B	CRP-TP04
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/22/09	05/22/09	05/22/09	05/11/09	05/11/09	05/11/09	05/12/09
TOP DEPTH			6 FT	12 FT	16 FT	8 FT	12 FT	16 FT	5 FT	5 FT	7 FT	5 FT
BOTTOM DEPTH			8 FT	14 FT	18 FT	10 FT	14 FT	18 FT	6 FT	6 FT	8 FT	6 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
TETRACHLOROETHENE	12000	570	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	2.5 J	5.2 U	4 U	4.7 U
TOLUENE	190000	500000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
TOTAL 1,2-DICHLOROETHENE		70000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
TOTAL CHLORINATED ETHENES			9.2 UJ	7 U	5.8 U	6.1 U	5.2 U	5.1 U	2.5 J	6.4 U	5 U	5.8 U
TOTAL CHLORINATED VOCS			9.1 UJ	6.9 U	5.7 UJ	0.91 J	5.2 UJ	5 UJ	2.5 J	6.3 U	4.9 U	5.8 U
TOTAL XYLENES	110000	60000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
TRANS-1,2-DICHLOROETHENE	1100000	11000	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
TRANS-1,3-DICHLOROPROPENE		1700	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
TRICHLOROETHENE	13000	2800	7.3 UJ	5.7 U	4.6 U	4.9 U	4.2 U	4.1 U	4.9 U	5.2 U	4 U	4.7 U
TRICHLOROFLUOROMETHANE		80000	15 UJ	11 U	9.2 U	9.7 U	8.4 U	8.2 U	9.8 U	10 U	8 U	9.3 U
VINYL CHLORIDE	20	60	15 UJ	11 U	9.2 U	9.7 U	8.4 U	8.2 U	9.8 U	10 U	8 U	9.3 U
SEMIVOLATILES (UG/KG)												
1,1-BIPHENYL	800	390000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
2,2'-OXYBIS(1-CHLOROPROPANE)		3500	820 U	740 U	750 U	740 U	770 U	740 U	770 U	770 U	750 U	720 U
2,4,5-TRICHLOROPHENOL	9000	610000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
2,4,6-TRICHLOROPHENOL	4000	44000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
2,4-DICHLOROPHENOL	30000	18000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
2,4-DIMETHYLPHENOL	1400000	120000	1600 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1400 U
2,4-DINITROPHENOL	20000	12000	4100 U	3700 U	3700 U	3700 U	3900 U	3700 U	3800 U	3800 U	3800 U	3600 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB10-1214	CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214	CRP-SB11-1618	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708	CRP-TP04-0506
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB10	CRP-SB11	CRP-SB11	CRP-SB11	CRP-TP01A	CRP-TP01B	CRP-TP01B	CRP-TP04
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/22/09	05/22/09	05/22/09	05/11/09	05/11/09	05/11/09	05/12/09
TOP DEPTH			6 FT	12 FT	16 FT	8 FT	12 FT	16 FT	5 FT	5 FT	7 FT	5 FT
BOTTOM DEPTH			8 FT	14 FT	18 FT	10 FT	14 FT	18 FT	6 FT	6 FT	8 FT	6 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
2,4-DINITROTOLUENE	900	1600	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
2,6-DINITROTOLUENE	61000	6100	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
2-CHLORONAPHTHALENE		630000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
2-CHLOROPHENOL	50000	39000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
2-METHYLNAPHTHALENE	29000	31000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
2-METHYLPHENOL		310000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
2-NITROANILINE		18000	1600 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1400 U
2-NITROPHENOL			410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
3,3'-DICHLOROBENZIDINE	1400	1100	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
3-NITROANILINE			1600 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1400 U
4,6-DINITRO-2-METHYLPHENOL		610	1600 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1400 U
4-BROMOPHENYL PHENYL ETHER			410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
4-CHLORO-3-METHYLPHENOL			410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
4-CHLOROANILINE	310000	2400	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
4-CHLOROPHENYL PHENYL ETHER			410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
4-METHYLPHENOL		31000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
4-NITROANILINE		24000	1600 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1400 U
4-NITROPHENOL	7000		1600 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 UJ	1500 UJ	1500 UJ	1400 UJ
ACENAPHTHENE	29000	340000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB10-1214	CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214	CRP-SB11-1618	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708	CRP-TP04-0506
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB10	CRP-SB11	CRP-SB11	CRP-SB11	CRP-TP01A	CRP-TP01B	CRP-TP01B	CRP-TP04
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/22/09	05/22/09	05/22/09	05/11/09	05/11/09	05/11/09	05/12/09
TOP DEPTH			6 FT	12 FT	16 FT	8 FT	12 FT	16 FT	5 FT	5 FT	7 FT	5 FT
BOTTOM DEPTH			8 FT	14 FT	18 FT	10 FT	14 FT	18 FT	6 FT	6 FT	8 FT	6 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
ACENAPHTHYLENE	23000	340000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
ACETOPHENONE		780000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
ANTHRACENE	29000	1700000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
ATRAZINE		2100	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
BENZALDEHYDE		780000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
BENZO(A)ANTHRACENE	900	150	56 J	370 U	370 U	370 U	390 U	370 U	86 J	380 U	380 U	360 U
BENZO(A)PYRENE	400	15	82 U	74 U	75 U	74 U	77 U	74 U	90 J	77 U	75 U	72 U
BENZO(B)FLUORANTHENE	900	150	53 J	370 U	370 U	370 U	390 U	370 U	100 J	380 U	380 U	360 U
BENZO(G,H,I)PERYLENE	800	170000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
BENZO(K)FLUORANTHENE	900	1500	410 U	370 U	370 U	370 U	390 U	370 U	47 J	380 U	380 U	360 U
BIS(2-CHLOROETHOXY)METHANE		18000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
BIS(2-CHLOROETHYL)ETHER	600	190	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	44 J	370 U	480	370 U	390 U	370 U	380 UJ	380 U	380 UJ	360 UJ
BUTYL BENZYL PHTHALATE		26000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
CAPROLACTAM		3100000	410 U	370 U	86 J	370 U	390 U	370 U	380 U	380 U	380 U	360 U
CARBAZOLE			820 U	740 U	750 U	740 U	770 U	740 U	770 U	770 U	750 U	720 U
CHRYSENE	400	15000	54 J	74 U	75 U	74 U	77 U	74 U	62 J	77 U	75 U	72 U
DIBENZO(A,H)ANTHRACENE	400	15	82 U	74 U	75 U	74 U	77 U	74 U	77 U	77 U	75 U	72 U
DIBENZOFURAN			410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
DIETHYL PHTHALATE	100000	4900000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB10-1214	CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214	CRP-SB11-1618	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708	CRP-TP04-0506
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB10	CRP-SB11	CRP-SB11	CRP-SB11	CRP-TP01A	CRP-TP01B	CRP-TP01B	CRP-TP04
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/22/09	05/22/09	05/22/09	05/11/09	05/11/09	05/11/09	05/12/09
TOP DEPTH			6 FT	12 FT	16 FT	8 FT	12 FT	16 FT	5 FT	5 FT	7 FT	5 FT
BOTTOM DEPTH			8 FT	14 FT	18 FT	10 FT	14 FT	18 FT	6 FT	6 FT	8 FT	6 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
DIMETHYL PHTHALATE	1900000		410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
DI-N-BUTYL PHTHALATE	200000	610000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
DI-N-OCTYL PHTHALATE			410 U	370 U	370 U	370 UJ	390 UJ	370 UJ	380 U	380 U	380 U	360 U
FLUORANTHENE	20000	230000	110 J	370 U	370 U	370 U	390 U	370 U	80 J	380 U	380 U	360 U
FLUORENE	28000	230000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
HEXACHLOROBENZENE	400	300	82 U	74 U	75 U	74 U	77 U	74 U	77 U	77 U	75 U	72 U
HEXACHLOROBUTADIENE	8200	6200	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
HEXACHLOROCYCLOPENTADIENE	10000	37000	410 UJ	370 U	370 U	370 U	390 U	370 U	380 UJ	380 UJ	380 UJ	360 UJ
HEXACHLOROETHANE	46000	35000	820 U	740 U	750 U	740 U	770 U	740 U	770 U	770 U	750 U	720 U
HIGH MOLECULAR WEIGHT PAHS			366 J	280 U	280 U	280 U	300 U	280 U	575 J	290 U	290 U	270 U
INDENO(1,2,3-CD)PYRENE	900	150	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
ISOPHORONE		510000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
LOW MOLECULAR WEIGHT PAHS			72 J	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
NAPHTHALENE	29000	3900	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
NITROBENZENE		4400	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
N-NITROSO-DI-N-PROPYLAMINE		69	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
N-NITROSODIPHENYLAMINE		99000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
PENTACHLOROPHENOL	2100	3000	1600 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1500 U	1400 U
PHENANTHRENE	29000	170000	72 J	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB10-1214	CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214	CRP-SB11-1618	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708	CRP-TP04-0506
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB10	CRP-SB11	CRP-SB11	CRP-SB11	CRP-TP01A	CRP-TP01B	CRP-TP01B	CRP-TP04
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/22/09	05/22/09	05/22/09	05/11/09	05/11/09	05/11/09	05/12/09
TOP DEPTH			6 FT	12 FT	16 FT	8 FT	12 FT	16 FT	5 FT	5 FT	7 FT	5 FT
BOTTOM DEPTH			8 FT	14 FT	18 FT	10 FT	14 FT	18 FT	6 FT	6 FT	8 FT	6 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
PHENOL	30000	1800000	410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
PYRENE	1100	170000	93 J	370 U	370 U	370 U	390 U	370 U	110 J	380 U	380 U	360 U
TOTAL CHLORINATED VOCS			410 U	370 U	370 U	370 U	390 U	370 U	380 U	380 U	380 U	360 U
TOTAL PAHS			438 J	320 U	320 U	320 U	330 U	320 U	575 J	330 U	330 U	310 U
PESTICIDES/PCBS (UG/KG)												
4,4'-DDD		2000	0.82 U	0.74 U	0.75 U	0.74 U	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.72 U
4,4'-DDE		1400	0.82 U	0.74 U	0.75 U	0.74 U	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.33 J
4,4'-DDT	21	1700	0.74 J	0.24 J	0.75 U	0.74 U	0.77 U	0.74 U	1 UJ	0.77 U	0.33 J	0.57 J
ALDRIN		29	0.41 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U
ALPHA-BHC		77	0.41 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U
ALPHA-CHLORDANE	500	1600	0.41 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U
AROCLOR-1016	371	22	20 U	19 U	19 U	18 U	19 U	18 U	19 U	19 U	19 U	18 U
AROCLOR-1221	371	170	20 U	19 U	19 U	18 U	19 U	18 U	19 U	19 U	19 U	18 U
AROCLOR-1232	371	170	20 U	19 U	19 U	18 U	19 U	18 U	19 U	19 U	19 U	18 U
AROCLOR-1242	371	220	20 U	19 U	19 U	18 U	19 U	18 U	19 U	19 U	19 U	18 U
AROCLOR-1248	371	220	20 U	19 U	19 U	18 U	19 U	18 U	19 U	19 U	19 U	18 U
AROCLOR-1254	371	220	20 U	19 U	19 U	18 U	19 U	18 U	19 U	19 U	19 U	18 U
AROCLOR-1260	371	220	9.8 J	19 U	19 U	49	19 U	18 U	11 J	19 U	19 U	18 U
BETA-BHC		270	0.41 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.57 UJ
DELTA-BHC		77	0.41 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U
DIELDRIN	4.9	30	0.82 U	0.74 U	0.75 U	0.35 J	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.72 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB10-1214	CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214	CRP-SB11-1618	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708	CRP-TP04-0506
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB10	CRP-SB11	CRP-SB11	CRP-SB11	CRP-TP01A	CRP-TP01B	CRP-TP01B	CRP-TP04
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/22/09	05/22/09	05/22/09	05/11/09	05/11/09	05/11/09	05/12/09
TOP DEPTH			6 FT	12 FT	16 FT	8 FT	12 FT	16 FT	5 FT	5 FT	7 FT	5 FT
BOTTOM DEPTH			8 FT	14 FT	18 FT	10 FT	14 FT	18 FT	6 FT	6 FT	8 FT	6 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
ENDOSULFAN I		37000	0.41 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U
ENDOSULFAN II		37000	0.8 J	1.2	4.1	0.49 J	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.72 U
ENDOSULFAN SULFATE		37000	2.5 UJ	0.74 U	0.75 U	0.74 U	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.72 U
ENDRIN		1800	0.82 U	0.74 U	0.75 U	0.51 J	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.72 U
ENDRIN ALDEHYDE		1800	0.82 U	0.74 U	0.75 U	2.8 UJ	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.72 U
ENDRIN KETONE		1800	0.82 U	0.74 U	0.75 U	0.74 U	0.77 U	0.74 U	0.77 U	0.77 U	0.75 U	0.72 U
GAMMA-BHC (LINDANE)		520	0.41 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U
GAMMA-CHLORDANE	500	1600	0.24 J	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U
HEPTACHLOR		110	0.41 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U
HEPTACHLOR EPOXIDE		53	0.41 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 U	0.38 U	0.38 U	0.36 U
METHOXYCHLOR		31000	0.41 U	0.37 U	0.37 U	0.37 U	0.39 U	0.37 U	0.38 UJ	0.38 UJ	0.38 UJ	0.36 UJ
TOTAL AROCLOR	371	220	9.8 J	19 U	19 U	49	19 U	18 U	11 J	19 U	19 U	18 U
TOTAL DDD/DDE/DDT			0.74 J	0.24 J	0.75 U	0.74 U	0.77 U	0.74 U	0.85 UJ	0.77 U	0.33 J	0.9 J
TOXAPHENE		440	41 U	37 U	37 U	37 U	39 U	37 U	38 U	38 U	38 U	36 U
METALS (MG/KG)												
ALUMINUM		7700	9610	7640	2900	9580 J	4860 J	1860 J	7740 J	7670 J	5010 J	10400 J
ANTIMONY	0.27	3.1	0.92 UJ	0.82 U	0.83 U	1.6 U	0.86 U	1.6 U	0.87 UJ	1.7 UJ	1.6 UJ	1.6 UJ
ARSENIC	7	0.39	8.7	4.7	7.8	11.3	6.4	13.9	6.1 J	7.6 J	6.8 J	12.4 J
BARIUM	330	1500	26 J	26.4 J	14.6 J	19.1 J	18.2 J	17.4 J	23.2 J	28 J	20 J	19.1 J
BERYLLIUM	0.4	16	0.39	0.288	0.189 J	0.334	0.3	0.2 J	0.36 J	0.43 J	0.36 J	0.39 J
CADMIUM	0.36	7	0.19 J	0.27 U	0.088 J	0.27 U	0.29 U	0.069 J	0.16 J	0.16 J	0.17 J	0.17 J
CALCIUM			418 J	1250 J	1090 J	360 J	797 J	1650 J	515 J	311 J	237 J	241 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

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ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-SB10-1214	CRP-SB10-1618	CRP-SB11-0810	CRP-SB11-1214	CRP-SB11-1618	CRP-TP01A-0506	CRP-TP01B-0506	CRP-TP01B-0708	CRP-TP04-0506
LOCATION ID			CRP-SB01	CRP-SB10	CRP-SB10	CRP-SB11	CRP-SB11	CRP-SB11	CRP-TP01A	CRP-TP01B	CRP-TP01B	CRP-TP04
SAMPLE DATE			05/19/09	05/21/09	05/21/09	05/22/09	05/22/09	05/22/09	05/11/09	05/11/09	05/11/09	05/12/09
TOP DEPTH			6 FT	12 FT	16 FT	8 FT	12 FT	16 FT	5 FT	5 FT	7 FT	5 FT
BOTTOM DEPTH			8 FT	14 FT	18 FT	10 FT	14 FT	18 FT	6 FT	6 FT	8 FT	6 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
CHROMIUM	26	280	12 J	9.4 J	6.4 J	16.4 J	8.3 J	13.8 J	11.9 J	12 J	10.9 J	14.4 J
COBALT	13	2.3	10	12.1	11.4	15.2	10.3	24.5	14.6	14.5	15.7	17.6
COPPER	28	310	20.4 J	13.9 J	10.3 J	23.7 J	26.5 J	18.3 J	21.7	20.2	17.4	31.2
IRON		5500	26800	20500	18100	37900	22500	47400	27000	27100	26300	33200
LEAD	11	400	18.3 J	7.2 J	5.2 J	9.4 J	6.5 J	9.7 J	12.3 J	8.8 J	6.3 J	11.7 J
MAGNESIUM			2180	3830 J	2580 J	3430 J	1640 J	5440 J	1870 J	1520 J	1200 J	3130 J
MANGANESE	220	180	442 J	392	239	522	502	629	460	550	664	813
MERCURY	0.1	0.43	0.028 J	0.033 U	0.037 U	0.036 U	0.04 U	0.033 U	0.041 U	0.037 U	0.036 U	0.039 U
NICKEL	38	150	21.2	23.5 J	21.8 J	31.4 J	23.2 J	53.1 J	22.3	24.6	26	33
POTASSIUM			266 J	1300	407	360	380	265 J	383 J	398 J	414 J	257 J
SELENIUM	0.52	39	0.43	0.23 UJ	0.2 UJ	0.25 UJ	0.21 UJ	0.28 UJ	0.3 J	0.29 J	0.35 U	0.34 U
SILVER	4.2	39	0.18 U	0.16 U	0.17 U	0.16 UJ	0.17 UJ	0.16 UJ	0.17 U	0.17 U	0.16 U	0.16 U
SODIUM			308 U	273 U	276 U	273 U	288 U	57.4 J	289 U	290 U	272 U	262 U
THALLIUM	1	0.51	0.49 U	0.44 U	0.44 U	0.44 U	0.46 U	0.44 U	0.46 UJ	0.46 UJ	0.44 UJ	0.42 UJ
VANADIUM	7.8	39	15.9	17.2	9.6	19.8	10.9	19.6	16	16.6	13.4	14.8
ZINC	46	2300	66.8	55.6	41.6	77.3	61	85.5	75.8	86.1	97.4	74
PETROLEUM HYDROCARBONS (MG/KG)												
DIESEL RANGE ORGANICS	500		17 J	12	18	15	11	12	28	11	5.5	8
GASOLINE RANGE ORGANICS	500		3.2 U	2.3 U	2.3 U	3.1 U	2.5 U	2.6 U	2.8 U	2.8 U	2.1 U	2.9 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-TP06-0405
LOCATION ID			CRP-SB01	CRP-TP06
SAMPLE DATE			05/19/09	05/13/09
TOP DEPTH			6 FT	4 FT
BOTTOM DEPTH			8 FT	5 FT
SACODE			NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM
VOLATILES (UG/KG)				
1,1,1-TRICHLOROETHANE	540000	900000	7.3 UJ	5.2 U
1,1,2,2-TETRACHLOROETHANE	1300	590	7.3 UJ	5.2 U
1,1,2-TRICHLOROETHANE	3600	1100	7.3 UJ	5.2 U
1,1-DICHLOROETHANE	920000	3400	7.3 UJ	5.2 U
1,1-DICHLOROETHENE	200	25000	7.3 UJ	5.2 U
1,2,4-TRICHLOROBENZENE	20000	8700	7.3 UJ	5.2 U
1,2-DIBROMO-3-CHLOROPROPANE	500	5.6	7.3 UJ	5.2 U
1,2-DIBROMOETHANE	10	34	7.3 UJ	5.2 U
1,2-DICHLOROBENZENE	510000	200000	7.3 UJ	5.2 U
1,2-DICHLOROETHANE	900	450	7.3 UJ	5.2 U
1,2-DICHLOROPROPANE	1900	930	7.3 UJ	5.2 U
1,3-DICHLOROBENZENE	430000		7.3 UJ	5.2 U
1,4-DICHLOROBENZENE	20000	2600	7.3 UJ	5.2 U
2-BUTANONE	10000000	2800000	73 UJ	52 UJ
2-HEXANONE			15 UJ	10 U
4-METHYL-2-PENTANONE	1200000	530000	15 UJ	10 U
ACETONE	7800000	6100000	73 UJ	52 UJ
BENZENE	2500	1100	7.3 UJ	5.2 U
BROMODICHLOROMETHANE	10000	280	7.3 UJ	5.2 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-TP06-0405
LOCATION ID			CRP-SB01	CRP-TP06
SAMPLE DATE			05/19/09	05/13/09
TOP DEPTH			6 FT	4 FT
BOTTOM DEPTH			8 FT	5 FT
SACODE			NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM
BROMOFORM	81000	61000	7.3 UJ	5.2 U
BROMOMETHANE	800	790	15 UJ	10 U
BTEX			7.3 UJ	5.2 U
CARBON DISULFIDE		67000	7.3 UJ	5.2 U
CARBON TETRACHLORIDE	1500	250	7.3 UJ	5.2 U
CHLOROBENZENE	40000	31000	7.3 UJ	5.2 U
CHLORODIBROMOMETHANE	7600	700	7.3 UJ	5.2 U
CHLOROETHANE		1500000	15 UJ	10 U
CHLOROFORM	1200	300	7.3 UJ	5.2 U
CHLOROMETHANE		120000	15 UJ	10 U
CIS-1,2-DICHLOROETHENE	630000	78000	7.3 UJ	5.2 U
CIS-1,3-DICHLOROPROPENE		1700	7.3 UJ	5.2 U
CYCLOHEXANE		720000	7.3 UJ	5.2 U
DICHLORODIFLUOROMETHANE		19000	15 UJ	10 U
ETHYLBENZENE	71000	5700	7.3 UJ	5.2 U
ISOPROPYLBENZENE	27000	220000	7.3 UJ	5.2 U
METHYL ACETATE		7800000	15 UJ	10 U
METHYL CYCLOHEXANE			7.3 UJ	5.2 U
METHYL TERT-BUTYL ETHER	390000	39000	7.3 UJ	5.2 U
METHYLENE CHLORIDE	45000	11000	15 UJ	10 U
STYRENE	13000	650000	7.3 UJ	5.2 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

SAMPLE ID			CRP-SB01-0608	CRP-TP06-0405
LOCATION ID			CRP-SB01	CRP-TP06
SAMPLE DATE			05/19/09	05/13/09
TOP DEPTH			6 FT	4 FT
BOTTOM DEPTH			8 FT	5 FT
SACODE			NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM
TETRACHLOROETHENE	12000	570	7.3 UJ	5.2 U
TOLUENE	190000	500000	7.3 UJ	5.2 U
TOTAL 1,2-DICHLOROETHENE		70000	7.3 UJ	5.2 U
TOTAL CHLORINATED ETHENES			9.2 UJ	6.4 U
TOTAL CHLORINATED VOCS			9.1 UJ	6.3 U
TOTAL XYLENES	110000	60000	7.3 UJ	5.2 U
TRANS-1,2-DICHLOROETHENE	1100000	11000	7.3 UJ	5.2 U
TRANS-1,3-DICHLOROPROPENE		1700	7.3 UJ	5.2 U
TRICHLOROETHENE	13000	2800	7.3 UJ	5.2 U
TRICHLOROFLUOROMETHANE		80000	15 UJ	10 U
VINYL CHLORIDE	20	60	15 UJ	10 U
SEMIVOLATILES (UG/KG)				
1,1-BIPHENYL	800	390000	410 U	2000 U
2,2'-OXYBIS(1-CHLOROPROPANE)		3500	820 U	4000 U
2,4,5-TRICHLOROPHENOL	9000	610000	410 U	2000 U
2,4,6-TRICHLOROPHENOL	4000	44000	410 U	2000 U
2,4-DICHLOROPHENOL	30000	18000	410 U	2000 U
2,4-DIMETHYLPHENOL	1400000	120000	1600 U	8000 U
2,4-DINITROPHENOL	20000	12000	4100 U	20000 U

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-TP06-0405
LOCATION ID			CRP-SB01	CRP-TP06
SAMPLE DATE			05/19/09	05/13/09
TOP DEPTH			6 FT	4 FT
BOTTOM DEPTH			8 FT	5 FT
SACODE			NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM
2,4-DINITROTOLUENE	900	1600	410 U	2000 UJ
2,6-DINITROTOLUENE	61000	6100	410 U	2000 U
2-CHLORONAPHTHALENE		630000	410 U	2000 U
2-CHLOROPHENOL	50000	39000	410 U	2000 U
2-METHYLNAPHTHALENE	29000	31000	410 U	2000 U
2-METHYLPHENOL		310000	410 U	2000 U
2-NITROANILINE		18000	1600 U	8000 U
2-NITROPHENOL			410 U	2000 U
3,3'-DICHLOROBENZIDINE	1400	1100	410 U	2000 U
3-NITROANILINE			1600 U	8000 U
4,6-DINITRO-2-METHYLPHENOL		610	1600 U	8000 U
4-BROMOPHENYL PHENYL ETHER			410 U	2000 U
4-CHLORO-3-METHYLPHENOL			410 U	2000 U
4-CHLOROANILINE	310000	2400	410 U	2000 U
4-CHLOROPHENYL PHENYL ETHER			410 U	2000 U
4-METHYLPHENOL		31000	410 U	2000 U
4-NITROANILINE		24000	1600 U	8000 U
4-NITROPHENOL	7000		1600 U	8000 U
ACENAPHTHENE	29000	340000	410 U	2000 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-TP06-0405
LOCATION ID			CRP-SB01	CRP-TP06
SAMPLE DATE			05/19/09	05/13/09
TOP DEPTH			6 FT	4 FT
BOTTOM DEPTH			8 FT	5 FT
SACODE			NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM
ACENAPHTHYLENE	23000	340000	410 U	1200 J
ACETOPHENONE		780000	410 U	2000 U
ANTHRACENE	29000	1700000	410 U	930 J
ATRAZINE		2100	410 U	2000 U
BENZALDEHYDE		780000	410 U	2000 U
BENZO(A)ANTHRACENE	900	150	56 J	10000 J
BENZO(A)PYRENE	400	15	82 U	9400
BENZO(B)FLUORANTHENE	900	150	53 J	10000
BENZO(G,H,I)PERYLENE	800	170000	410 U	5200
BENZO(K)FLUORANTHENE	900	1500	410 U	4300
BIS(2-CHLOROETHOXY)METHANE		18000	410 U	2000 U
BIS(2-CHLOROETHYL)ETHER	600	190	410 U	2000 U
BIS(2-ETHYLHEXYL)PHTHALATE	46000	35000	44 J	2000 U
BUTYL BENZYL PHTHALATE		26000	410 U	2000 U
CAPROLACTAM		3100000	410 U	2000 U
CARBAZOLE			820 U	4000 U
CHRYSENE	400	15000	54 J	11000 J
DIBENZO(A,H)ANTHRACENE	400	15	82 U	1900
DIBENZOFURAN			410 U	2000 U
DIETHYL PHTHALATE	100000	4900000	410 U	2000 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-TP06-0405
LOCATION ID			CRP-SB01	CRP-TP06
SAMPLE DATE			05/19/09	05/13/09
TOP DEPTH			6 FT	4 FT
BOTTOM DEPTH			8 FT	5 FT
SACODE			NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM
DIMETHYL PHTHALATE	1900000		410 U	2000 U
DI-N-BUTYL PHTHALATE	200000	610000	410 U	2000 U
DI-N-OCTYL PHTHALATE			410 U	2000 U
FLUORANTHENE	20000	230000	110 J	15000 J
FLUORENE	28000	230000	410 U	290 J
HEXACHLOROBENZENE	400	300	82 U	400 U
HEXACHLOROBUTADIENE	8200	6200	410 U	2000 U
HEXACHLOROCYCLOPENTADIENE	10000	37000	410 UJ	2000 U
HEXACHLOROETHANE	46000	35000	820 U	4000 U
HIGH MOLECULAR WEIGHT PAHS			366 J	95200 J
INDENO(1,2,3-CD)PYRENE	900	150	410 U	5400
ISOPHORONE		510000	410 U	2000 U
LOW MOLECULAR WEIGHT PAHS			72 J	6470 J
NAPHTHALENE	29000	3900	410 U	250 J
NITROBENZENE		4400	410 U	2000 U
N-NITROSO-DI-N-PROPYLAMINE		69	410 U	2000 U
N-NITROSODIPHENYLAMINE		99000	410 U	2000 U
PENTACHLOROPHENOL	2100	3000	1600 U	8000 U
PHENANTHRENE	29000	170000	72 J	3800

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-TP06-0405
LOCATION ID			CRP-SB01	CRP-TP06
SAMPLE DATE			05/19/09	05/13/09
TOP DEPTH			6 FT	4 FT
BOTTOM DEPTH			8 FT	5 FT
SACODE			NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM
PHENOL	30000	1800000	410 U	2000 U
PYRENE	1100	170000	93 J	23000
TOTAL CHLORINATED VOCS			410 U	2000 U
TOTAL PAHS			438 J	101670 J
PESTICIDES/PCBS (UG/KG)				
4,4'-DDD		2000	0.82 U	24 UJ
4,4'-DDE		1400	0.82 U	0.8 U
4,4'-DDT	21	1700	0.74 J	0.8 UJ
ALDRIN		29	0.41 U	0.4 U
ALPHA-BHC		77	0.41 U	0.4 U
ALPHA-CHLORDANE	500	1600	0.41 U	0.4 U
AROCLOR-1016	371	22	20 U	20 U
AROCLOR-1221	371	170	20 U	20 U
AROCLOR-1232	371	170	20 U	20 U
AROCLOR-1242	371	220	20 U	20 U
AROCLOR-1248	371	220	20 U	20 U
AROCLOR-1254	371	220	20 U	20 U
AROCLOR-1260	371	220	9.8 J	47
BETA-BHC		270	0.41 U	0.4 U
DELTA-BHC		77	0.41 U	0.4 U
DIELDRIN	4.9	30	0.82 U	0.8 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-TP06-0405
LOCATION ID			CRP-SB01	CRP-TP06
SAMPLE DATE			05/19/09	05/13/09
TOP DEPTH			6 FT	4 FT
BOTTOM DEPTH			8 FT	5 FT
SACODE			NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM
ENDOSULFAN I		37000	0.41 U	0.4 U
ENDOSULFAN II		37000	0.8 J	5.6 J
ENDOSULFAN SULFATE		37000	2.5 UJ	0.8 U
ENDRIN		1800	0.82 U	5.3 J
ENDRIN ALDEHYDE		1800	0.82 U	6.4
ENDRIN KETONE		1800	0.82 U	0.8 U
GAMMA-BHC (LINDANE)		520	0.41 U	0.4 U
GAMMA-CHLORDANE	500	1600	0.24 J	0.4 U
HEPTACHLOR		110	0.41 U	0.4 UJ
HEPTACHLOR EPOXIDE		53	0.41 U	0.4 U
METHOXYCHLOR		31000	0.41 U	0.4 UJ
TOTAL AROCLOR	371	220	9.8 J	47
TOTAL DDD/DDE/DDT			0.74 J	8.5 UJ
TOXAPHENE		440	41 U	40 U
METALS (MG/KG)				
ALUMINUM		7700	9610	11400 J
ANTIMONY	0.27	3.1	0.92 UJ	0.9 UJ
ARSENIC	7	0.39	8.7	10.4 J
BARIUM	330	1500	26 J	20.1 J
BERYLLIUM	0.4	16	0.39	0.4 J
CADMIUM	0.36	7	0.19 J	0.23 J
CALCIUM			418 J	592 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-2
ANALYTICAL RESULTS - SUBSURFACE SOIL
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID			CRP-SB01-0608	CRP-TP06-0405
LOCATION ID			CRP-SB01	CRP-TP06
SAMPLE DATE			05/19/09	05/13/09
TOP DEPTH			6 FT	4 FT
BOTTOM DEPTH			8 FT	5 FT
SACODE			NORMAL	NORMAL
QC TYPE	PAL	RES RSL	NM	NM
CHROMIUM	26	280	12 J	14.3 J
COBALT	13	2.3	10	9.3
COPPER	28	310	20.4 J	22.7
IRON		5500	26800	28100
LEAD	11	400	18.3 J	26 J
MAGNESIUM			2180	2500 J
MANGANESE	220	180	442 J	293
MERCURY	0.1	0.43	0.028 J	0.02 J
NICKEL	38	150	21.2	18.2
POTASSIUM			266 J	386 J
SELENIUM	0.52	39	0.43	0.45
SILVER	4.2	39	0.18 U	0.18 U
SODIUM			308 U	299 U
THALLIUM	1	0.51	0.49 U	0.48 UJ
VANADIUM	7.8	39	15.9	18.6
ZINC	46	2300	66.8	48
PETROLEUM HYDROCARBONS (MG/KG)				
DIESEL RANGE ORGANICS	500		17 J	430
GASOLINE RANGE ORGANICS	500		3.2 U	2.7 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-3
ANALYTICAL RESULTS - GROUNDWATER
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID				CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID				CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06	CRP-MW07	CRP-MW08	CRP-MW08	CRP-MW08
SAMPLE DATE				06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	MCL	RIDEM GA AQUIF	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
VOLATILES (UG/L)													
1,1,1-TRICHLOROETHANE	200	200	200	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
1,1,2,2-TETRACHLOROETHANE				1 U	1 U	1 U	1 U	1 U	0.27 J	1 U	21	15.5	20 U
1,1,2-TRICHLOROETHANE	5	5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
1,1-DICHLOROETHANE				1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
1,1-DICHLOROETHENE	7	7	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
1,2,4-TRICHLOROBENZENE	70	70	70	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
1,2-DIBROMO-3-CHLOROPROPANE	0.2	0.2	0.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
1,2-DIBROMOETHANE	0.05	0.05	0.05	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
1,2-DICHLOROBENZENE	600	600		1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
1,2-DICHLOROETHANE	5	5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
1,2-DICHLOROPROPANE	5	5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
1,3-DICHLOROBENZENE	600		600	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
1,4-DICHLOROBENZENE	75	75	75	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
2-BUTANONE				10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10 U	200 U	200 U	200 U
2-HEXANONE				5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	100 UJ	100 UJ	100 U
4-METHYL-2-PENTANONE				5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U	100 U	100 U	100 U
ACETONE				10 UJ	1.3 J	2.3 J	5.6 J	2.2 J	10 U	1.1 J	200 U	200 U	200 U
BENZENE	5	5	5	1 U	1 U	1 U	1 U	0.11 J	1 U	1 U	22	16	20 U
BROMODICHLOROMETHANE	80	80		1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
BROMOFORM	80	80		1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
BROMOMETHANE				2 U	2 U	2 U	2 U	2 U	2 U	2 U	40 U	40 U	40 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-3
ANALYTICAL RESULTS - GROUNDWATER
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID				CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID				CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06	CRP-MW07	CRP-MW08	CRP-MW08	CRP-MW08
SAMPLE DATE				06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	MCL	RIDEM GA AQUIF	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
BTEX				0.37 J	1 U	1 U	0.17 J	0.11 J	1 U	1 U	54 J	38.15 J	2.3 J
CARBON DISULFIDE				1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
CARBON TETRACHLORIDE	5	5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
CHLOROBENZENE	100	100	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
CHLORODIBROMOMETHANE	80	80		1 U	1 U	1 U	1 U	1 U	0.12 J	1 U	20 U	20 U	20 U
CHLOROETHANE				2 U	2 U	2 U	2 U	2 U	2 U	2 U	40 U	40 U	40 U
CHLOROFORM	80	80		1 U	1 U	1 U	3.3	1.5	2.4	1 U	20 U	20 U	20 U
CHLOROMETHANE				2 U	2 U	2 U	2 U	2 U	2 U	2 U	40 U	40 U	40 U
CIS-1,2-DICHLOROETHENE	70	70	70	1 U	1 U	1 U	0.62 J	1 U	0.32 J	1 U	20 U	20 U	20 U
CIS-1,3-DICHLOROPROPENE				1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
CYCLOHEXANE				1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
DICHLORODIFLUOROMETHANE				2 U	2 U	2 U	2 U	2 U	2 U	2 U	40 U	40 U	40 U
ETHYLBENZENE	700	700	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
ISOPROPYLBENZENE				1 U	1 U	1 U	1 U	1 U	1 U	1.2	24	17	20 U
METHYL ACETATE				2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 U	40 U	40 U	40 U
METHYL CYCLOHEXANE				1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
METHYL TERT-BUTYL ETHER	40		40	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
METHYLENE CHLORIDE	5	5	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	40 U	40 U	40 U
STYRENE	100	100	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
TETRACHLOROETHENE	5	5	5	1 U	1 U	1 U	74	1 U	0.21 J	1 U	2700	2700	2700
TOLUENE	1000	1000	1000	1 U	1 U	1 U	0.17 J	1 U	1 U	1 U	22	12.15 J	2.3 J
TOTAL 1,2-DICHLOROETHENE				1 U	1 U	1 U	0.62 J	1 U	0.32 J	1 U	20 U	20 U	20 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-3
ANALYTICAL RESULTS - GROUNDWATER
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID				CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID				CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06	CRP-MW07	CRP-MW08	CRP-MW08	CRP-MW08
SAMPLE DATE				06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	MCL	RIDEM GA AQUIF	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
TOTAL CHLORINATED ETHENES				1.2 U	1.2 U	1.2 U	88.62 J	1.2 U	28.53 J	1.2 U	2705.9 J	2705.05 J	2704.2 J
TOTAL CHLORINATED VOCS				1.2 U	1.2 U	1.2 U	91.92 J	1.5	31.32 J	1.2 U	2726.9 J	2720.55 J	2704.2 J
TOTAL XYLENES	10000		10000	0.37 J	1 U	1 U	1 U	1 U	1 U	1 U	10 J	10 J	20 U
TRANS-1,2-DICHLOROETHENE	100	100	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	20 U	20 U
TRANS-1,3-DICHLOROPROPENE				1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 U	20 U	20 U	20 U
TRICHLOROETHENE	5	5	5	1 U	1 U	1 U	14	1 U	28	1 U	5.9 J	5.05 J	4.2 J
TRICHLOROFLUOROMETHANE				2 U	2 U	2 U	2 U	2 U	2 U	2 U	40 U	40 U	40 U
VINYL CHLORIDE	2	2	2	2 U	2 U	2 U	2 U	2 U	2 U	2 U	40 U	40 U	40 U
SEMIVOLATILES (UG/L)													
1,1-BIPHENYL				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
1,4-DIOXANE				9.3 U	9.6 U	9.8 U	9.3 U	9.4 U	9.2 U	9.6 U	9.5 U	9.35 U	9.2 U
2,2'-OXYBIS(1-CHLOROPROPANE)				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
2,4,5-TRICHLOROPHENOL				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
2,4,6-TRICHLOROPHENOL				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
2,4-DICHLOROPHENOL				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
2,4-DIMETHYLPHENOL				19 U	19 U	20 U	19 U	19 U	18 U	19 U	19 U	18.5 U	18 U
2,4-DINITROPHENOL				47 U	48 U	49 UJ	47 U	47 UJ	46 U	48 UJ	48 UJ	47 UJ	46 UJ
2,4-DINITROTOLUENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
2,6-DINITROTOLUENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
2-CHLORONAPHTHALENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
2-CHLOROPHENOL				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-3
ANALYTICAL RESULTS - GROUNDWATER
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID				CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID				CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06	CRP-MW07	CRP-MW08	CRP-MW08	CRP-MW08
SAMPLE DATE				06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	MCL	RIDEM GA AQUIF	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
2-METHYLNAPHTHALENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
2-METHYLPHENOL				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
2-NITROANILINE				19 U	19 U	20 U	19 U	19 U	18 U	19 U	19 U	18.5 U	18 U
2-NITROPHENOL				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
3,3'-DICHLOROBENZIDINE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
3-NITROANILINE				19 U	19 U	20 U	19 U	19 U	18 U	19 U	19 U	18.5 U	18 U
4,6-DINITRO-2-METHYLPHENOL				19 U	19 U	20 U	19 U	19 U	18 U	19 U	19 U	18.5 U	18 U
4-BROMOPHENYL PHENYL ETHER				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
4-CHLORO-3-METHYLPHENOL				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
4-CHLOROANILINE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
4-CHLOROPHENYL PHENYL ETHER				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
4-METHYLPHENOL				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
4-NITROANILINE				19 U	19 U	20 U	19 U	19 U	18 U	19 U	19 U	18.5 U	18 U
4-NITROPHENOL				19 U	19 U	20 U	19 U	19 U	18 U	19 U	19 U	18.5 U	18 U
ACENAPHTHENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
ACENAPHTHYLENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
ACETOPHENONE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
ANTHRACENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
ATRAZINE				4.7 U	4.8 UJ	4.9 U	4.7 U	4.7 U	4.6 UJ	4.8 U	4.8 U	4.7 U	4.6 U
BENZALDEHYDE				4.7 U	4.8 UJ	4.9 U	4.7 U	4.7 U	4.6 UJ	4.8 U	4.8 U	4.7 U	4.6 U
BENZO(A)ANTHRACENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-3
ANALYTICAL RESULTS - GROUNDWATER
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID				CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID				CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06	CRP-MW07	CRP-MW08	CRP-MW08	CRP-MW08
SAMPLE DATE				06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	MCL	RIDEM GA AQUIF	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
BENZO(A)PYRENE	0.2	0.2	0.2	0.093 U	0.096 U	0.098 U	0.093 U	0.094 U	0.092 U	0.096 U	0.095 U	0.0935 U	0.092 U
BENZO(B)FLUORANTHENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
BENZO(G,H,I)PERYLENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
BENZO(K)FLUORANTHENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
BIS(2-CHLOROETHOXY)METHANE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
BIS(2-CHLOROETHYL)ETHER				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
BIS(2-ETHYLHEXYL)PHTHALATE	6	6		9.3 U	9.6 U	9.8 U	9.3 U	9.4 U	9.2 U	9.6 U	9.6 U	9.4 U	9.2 U
BUTYL BENZYL PHTHALATE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
CAPROLACTAM				4.7 UJ	4.8 UJ	4.9 UJ	4.7 UJ	4.7 UJ	4.6 UJ	4.8 UJ	4.8 UJ	4.7 UJ	4.6 UJ
CARBAZOLE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
CHRYSENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
DIBENZO(A,H)ANTHRACENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
DIBENZOFURAN				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
DIETHYL PHTHALATE	6		6	4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
DIMETHYL PHTHALATE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
DI-N-BUTYL PHTHALATE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
DI-N-OCTYL PHTHALATE				4.7 U	4.8 U	4.9 UJ	4.7 U	4.7 UJ	4.6 U	4.8 UJ	4.8 UJ	4.7 UJ	4.6 UJ
FLUORANTHENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
FLUORENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
HEXACHLOROBENZENE	1	1	1	0.093 U	0.096 U	0.098 U	0.093 U	0.094 U	0.092 U	0.096 U	0.095 U	0.0935 U	0.092 U
HEXACHLOROBUTADIENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-3
ANALYTICAL RESULTS - GROUNDWATER
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID				CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID				CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06	CRP-MW07	CRP-MW08	CRP-MW08	CRP-MW08
SAMPLE DATE				06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	MCL	RIDEM GA AQUIF	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
HEXACHLOROCYCLOPENTADIENE	50	50		4.7 U	4.8 U	4.9 UJ	4.7 U	4.7 UJ	4.6 U	4.8 UJ	4.8 UJ	4.7 UJ	4.6 UJ
HEXACHLOROETHANE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
HIGH MOLECULAR WEIGHT PAHS				4.2 U	4.3 U	4.4 U	4.2 U	4.2 U	4.1 U	4.3 U	4.3 U	4.2 U	4.1 U
INDENO(1,2,3-CD)PYRENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
ISOPHORONE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
LOW MOLECULAR WEIGHT PAHS				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
NAPHTHALENE	20		20	4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
NITROBENZENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
N-NITROSO-DI-N-PROPYLAMINE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
N-NITROSODIPHENYLAMINE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
PENTACHLOROPHENOL	1	1	1	0.093 U	0.096 U	0.098 U	0.093 U	0.094 U	0.092 U	0.096 U	0.095 U	0.0935 U	0.092 U
PHENANTHRENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
PHENOL				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
PYRENE				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
TOTAL CHLORINATED VOCS				4.7 U	4.8 U	4.9 U	4.7 U	4.7 U	4.6 U	4.8 U	4.8 U	4.7 U	4.6 U
TOTAL PAHS				4.4 U	4.5 U	4.6 U	4.4 U	4.4 U	4.3 U	4.5 U	4.5 U	4.4 U	4.3 U
PESTICIDES/PCBS (UG/L)													
4,4'-DDD				0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.018 U	0.019 U	0.018 U	0.0185 U	0.019 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-3
ANALYTICAL RESULTS - GROUNDWATER
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID				CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID				CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06	CRP-MW07	CRP-MW08	CRP-MW08	CRP-MW08
SAMPLE DATE				06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	MCL	RIDEM GA AQUIF	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
4,4'-DDE				0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.018 U	0.01 J	0.018 U	0.0185 U	0.019 U
4,4'-DDT				0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.018 U	0.01 J	0.018 U	0.0185 U	0.019 U
ALDRIN				0.0094 U	0.0096 U	0.0098 U	0.0096 U	0.0093 U	0.0092 U	0.0094 U	0.0092 U	0.00925 U	0.0093 U
ALPHA-BHC				0.0094 U	0.0096 U	0.0098 U	0.0096 U	0.0093 U	0.0092 U	0.0094 U	0.0092 U	0.00925 U	0.0093 U
ALPHA-CHLORDANE	2	2	2	0.0094 U	0.0096 U	0.0098 U	0.0096 U	0.0093 U	0.0092 U	0.0094 U	0.0092 U	0.00925 U	0.0093 U
AROCLOR-1016	0.5	0.5		0.47 U	0.48 U	0.49 U	0.48 U	0.47 U	0.46 U	0.47 U	0.46 U	0.465 U	0.47 U
AROCLOR-1221	0.5	0.5		0.47 U	0.48 U	0.49 U	0.48 U	0.47 U	0.46 U	0.47 U	0.46 U	0.465 U	0.47 U
AROCLOR-1232	0.5	0.5		0.47 U	0.48 U	0.49 U	0.48 U	0.47 U	0.46 U	0.47 U	0.46 U	0.465 U	0.47 U
AROCLOR-1242	0.5	0.5		0.47 U	0.48 U	0.49 U	0.48 U	0.47 U	0.46 U	0.47 U	0.46 U	0.465 U	0.47 U
AROCLOR-1248	0.5	0.5		0.47 U	0.48 U	0.49 U	0.48 U	0.47 U	0.46 U	0.47 U	0.46 U	0.465 U	0.47 U
AROCLOR-1254	0.5	0.5		0.47 U	0.48 U	0.49 U	0.48 U	0.47 U	0.46 U	0.47 U	0.46 U	0.465 U	0.47 U
AROCLOR-1260	0.5	0.5		0.47 U	0.48 U	0.49 U	0.48 U	0.47 U	0.46 U	0.47 U	0.46 U	0.465 U	0.47 U
BETA-BHC				0.0094 U	0.0096 U	0.0098 U	0.0096 U	0.0093 U	0.0092 U	0.0094 U	0.0092 U	0.00925 U	0.0093 U
DELTA-BHC				0.0094 U	0.0096 U	0.0098 U	0.0096 U	0.0093 U	0.0092 U	0.0094 U	0.0092 U	0.00925 U	0.0093 U
DIELDRIN				0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.018 U	0.019 U	0.018 U	0.0185 U	0.019 U
ENDOSULFAN I				0.0094 U	0.0096 U	0.0098 U	0.0096 U	0.0093 U	0.0092 U	0.0094 U	0.0092 U	0.00925 U	0.0093 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-3
ANALYTICAL RESULTS - GROUNDWATER
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID				CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID				CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06	CRP-MW07	CRP-MW08	CRP-MW08	CRP-MW08
SAMPLE DATE				06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	MCL	RIDEM GA AQUIF	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
ENDOSULFAN II				0.019 U	0.019 U	0.02 U	0.019 U	0.0089 J	0.018 U	0.019 U	0.018 U	0.0185 U	0.019 U
ENDOSULFAN SULFATE				0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.018 U	0.019 U	0.018 U	0.0185 U	0.019 U
ENDRIN	2	2		0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.018 U	0.019 U	0.018 U	0.0185 U	0.019 U
ENDRIN ALDEHYDE				0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.018 U	0.019 U	0.018 U	0.0185 U	0.019 U
ENDRIN KETONE				0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.018 U	0.019 U	0.018 U	0.0185 U	0.019 U
GAMMA-BHC (LINDANE)				0.0094 U	0.0096 U	0.0098 U	0.0096 U	0.0093 U	0.0092 U	0.0094 U	0.0092 U	0.00925 U	0.0093 U
GAMMA-CHLORDANE	2	2	2	0.0038 J	0.0096 U	0.0098 U	0.0096 U	0.0093 U	0.0092 U	0.0094 U	0.0092 U	0.00925 U	0.0093 U
HEPTACHLOR	0.4	0.4		0.0094 U	0.0096 U	0.0098 U	0.0096 U	0.0093 U	0.0092 U	0.0094 U	0.0092 U	0.00925 U	0.0093 U
HEPTACHLOR EPOXIDE	0.2	0.2		0.0094 U	0.0096 U	0.0098 U	0.43 UJ	0.0093 U	3.7 UJ	0.0094 U	0.0092 U	0.00925 U	0.0093 U
METHOXYCHLOR	40	40		0.0094 U	0.0096 U	0.0098 U	0.0096 U	0.0093 U	0.0092 U	0.0094 U	0.0092 U	0.00925 U	0.0093 U
TOTAL AROCLOR	0.5	0.5	0.5	0.47 U	0.48 U	0.49 U	0.48 U	0.47 U	0.46 U	0.47 U	0.46 U	0.46 U	0.47 U
TOTAL DDD/DDE/DDT				0.019 U	0.019 U	0.02 U	0.019 U	0.019 U	0.018 U	0.02 J	0.018 U	0.018 U	0.019 U
TOXAPHENE	3	3		0.94 U	0.96 U	0.98 U	0.96 U	0.93 U	0.92 U	0.94 U	0.92 U	0.925 U	0.93 U
METALS (UG/L)													
ALUMINUM				116 J	169 J	77.2 J	186 J	202 J	208 J	23.4 J	99.7 J	148.35 J	197 J
ANTIMONY	6	6	6	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-3
ANALYTICAL RESULTS - GROUNDWATER
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID				CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID				CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06	CRP-MW07	CRP-MW08	CRP-MW08	CRP-MW08
SAMPLE DATE				06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	MCL	RIDEM GA AQUIF	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
ARSENIC	10	10		1.2 U	1.2 U	4	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
BARIUM	2000	2000	2000	29	29.7	32.2	16.3	30.2	38.9	51.2	23.8	23.35	22.9
BERYLLIUM	4	4	4	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
CADMIUM	5	5	5	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
CALCIUM				11800	16800	12100	10500	8750	18600	9500	9950	9650	9350
CHROMIUM	100	100	100	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ
COBALT				4.7	8.2	16.1	5.1	18.6	9.7	1.4 J	8.3	8.3	8.3
COPPER	1300	1300		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
IRON				625 J	942 J	12800 J	509 J	9650 J	1140 J	14.1 J	539 J	747.5 J	956 J
LEAD	15	15	15	0.75 U	0.75 U	0.75 U	0.75 U	0.48 J	0.38 J	0.75 U	0.75 U	0.75 U	0.75 U
MAGNESIUM				5420 J	7580 J	5780 J	2820 J	4790 J	3720 J	2410 J	3910 J	3800 J	3690 J
MANGANESE				1040	2480	2990	565	1410	3370	278	787	781	775
MERCURY	2		2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U
NICKEL	100		100	8.1	16.4	18	7.5	66.6	21.3	5.8	8.6	8.65	8.7
POTASSIUM				1980	2590	1750	2160	1010 J	2920	2040	2030	1970	1910
SELENIUM	50	50	50	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
SILVER				0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ
SODIUM				23100	19000	10700	25000	10400	17700	9100	8190	7935	7680
THALLIUM	2	2	2	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
VANADIUM				3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
ZINC				3.1 J	3.8 J	21.9	2.7 J	67.3	10.1	1.6 J	3.5 J	3.5 J	3.5 J
DISSOLVED METALS (UG/L)													
ALUMINUM				21.4 J	22.7 J	21.3 J	34.5 J	28.1 J	27.9 J	19 J	20.9 J	21.5 J	22.1 J
ANTIMONY	6	6	6	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-3
ANALYTICAL RESULTS - GROUNDWATER
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID				CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID				CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06	CRP-MW07	CRP-MW08	CRP-MW08	CRP-MW08
SAMPLE DATE				06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	MCL	RIDEM GA AQUIF	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
ARSENIC	10	10		1.2 U	1.2 U	4	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
BARIUM	2000	2000	2000	27.2	28.6	31.4	15.6	24.7	36.9	50.2	19.9	19.15	18.4
BERYLLIUM	4	4	4	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
CADMIUM	5	5	5	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
CALCIUM				11700	16900	12000	10700	7690	19100	9610	10100	9700	9300
CHROMIUM	100	100	100	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ
COBALT				4.1	8.1	15.9	5.2	15.8	9.8	1.3 J	5.6	5.4	5.2
COPPER	1300	1300		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
IRON				287	482	12200	86.2	8080	123	25 U	191	200	209
LEAD	15	15	15	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.44 J	0.44 J	0.75 U
MAGNESIUM				5270 J	7450 J	5680 J	2810 J	4200 J	3880 J	2450 J	4040 J	3915 J	3790 J
MANGANESE				932	2710	2930	606	1220	3350	276	551	521.5	492
MERCURY	2		2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U
NICKEL	100		100	7	15.4	17.4	7	56.3	21.1	5.7	6.9	6.6	6.3
POTASSIUM				1760	2540	1710	2220	860 J	2850	2030	1900	1805	1710
SELENIUM	50	50	50	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
SILVER				0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ	0.75 UJ
SODIUM				21900	19000	10700	26200	9090	18200	9210	8240	7980	7720
THALLIUM	2	2	2	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
VANADIUM				3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
ZINC				2.5 J	3.3 J	21.5	2.3 J	57.3	6.3	1.5 J	2 J	2.05 J	2.1 J
PETROLEUM HYDROCARBONS (MG/L)													
DIESEL RANGE ORGANICS				0.093 U	0.094 U	0.094 U	0.093 U	0.092 U	0.092 U	0.099 U	0.094 U	0.093 U	0.092 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-3
ANALYTICAL RESULTS - GROUNDWATER
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID				CRP-MW01-0609	CRP-MW02-0609	CRP-MW03-0609	CRP-MW04-0609	CRP-MW05-0609	CRP-MW06-0609	CRP-MW07-0609	CRP-MW08-0609	CRP-MW08-0609-AVG	CRP-MW08-0609-D
LOCATION ID				CRP-MW01	CRP-MW02	CRP-MW03	CRP-MW04	CRP-MW05	CRP-MW06	CRP-MW07	CRP-MW08	CRP-MW08	CRP-MW08
SAMPLE DATE				06/01/09	06/02/09	06/02/09	06/04/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09	06/03/09
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	MCL	RIDEM GA AQUIF	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
GASOLINE RANGE ORGANICS				0.055 U	0.055 U	0.055 U	0.061	0.055 U	0.055 U	0.055 U	0.42	0.41	0.4

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-4
ANALYTICAL RESULTS - SEDIMENT
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID		CRP-SD01-0006	CRP-SD01-0612	CRP-SD02-0006	CRP-SD02-0612	CRP-SD03 0006	CRP-SD03 0006-AVG	CRP-SD03 0006-D	CRP-SD04 0006	CRP-SD05 0006	CRP-SD06 0006	CRP-SD06 0006-AVG	CRP-SD06 0006-D
LOCATION ID		CRP-SD01	CRP-SD01	CRP-SD02	CRP-SD02	CRP-SD03	CRP-SD03	CRP-SD03	CRP-SD04	CRP-SD05	CRP-SD06	CRP-SD06	CRP-SD06
SAMPLE DATE		06/19/09	06/19/09	06/19/09	06/19/09	06/18/09	06/18/09	06/18/09	06/18/09	06/15/09	06/15/09	06/15/09	06/15/09
TOP DEPTH		0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH		0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT
SACODE		NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	FD
SEMIVOLATILES (UG/KG)													
2-METHYLNAPHTHALENE	20000	250 U	240 U	250 U	240 U	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U
ACENAPHTHENE	6710	110 J	66 J	250 U	63 J	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U
ACENAPHTHYLENE	5870	250 U	240 U	250 U	240 U	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U
ANTHRACENE	46900	160 J	94 J	45 J	91 J	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U
BENZO(A)ANTHRACENE	74800	820	500	340	400	250 U	250 U	250 U	250 U	250 U	68 J	64 J	60 J
BENZO(A)PYRENE	88800	1100 J	650	460	590	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U
BENZO(B)FLUORANTHENE	1800000	1200 J	640	410	640	250 U	250 U	250 U	250 U	250 U	100 J	100 J	240 U
BENZO(G,H,I)PERYLENE	670000	830 J	530	350	510	250 U	250 U	250 U	150 J	250 U	180 J	170 J	160 J
BENZO(K)FLUORANTHENE	240000	440 J	220 J	140 J	240 J	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U
CHRYSENE	107000	930	650	450	460	250 U	250 U	250 U	250 U	250 U	76 J	70.5 J	65 J
DIBENZO(A,H)ANTHRACENE	6000	250 UJ	280	250 U	240 U	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U
FLUORANTHENE	113000	1100	680	380	620	250 U	250 U	250 U	250 U	250 U	87 J	86 J	85 J
FLUORENE	19000	81 J	39 J	250 U	39 J	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U
HIGH MOLECULAR WEIGHT PAHS		8430 J	5380 J	3420 J	4660 J	250 U	250 U	250 U	150 J	57 J	621 J	591.5 J	462 J
INDENO(1,2,3-CD)PYRENE	600000	910 J	580	420	590	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U
LOW MOLECULAR WEIGHT PAHS		1101 J	629 J	295 J	573 J	250 U	250 U	250 U	30 J	250 U	52 J	53 J	54 J
NAPHTHALENE	34600	250 U	240 U	250 U	240 U	250 U	250 U	250 U	250 U	250 U	240 U	240 U	240 U
PHENANTHRENE	86000	750	430	250 J	380	250 U	250 U	250 U	30 J	250 U	52 J	53 J	54 J
PYRENE	152000	1100	650	470	610	250 U	250 U	250 U	250 U	57 J	110 J	101 J	92 J
TOTAL PAHS		9531 J	6009 J	3715 J	5233 J	250 U	250 U	250 U	180 J	57 J	673 J	644.5 J	516 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-4
ANALYTICAL RESULTS - SEDIMENT
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID		CRP-SD01-0006	CRP-SD01-0612	CRP-SD02-0006	CRP-SD02-0612	CRP-SD030006	CRP-SD030006-AVG	CRP-SD030006-D	CRP-SD040006	CRP-SD050006	CRP-SD060006	CRP-SD060006-AVG	CRP-SD060006-D
LOCATION ID		CRP-SD01	CRP-SD01	CRP-SD02	CRP-SD02	CRP-SD03	CRP-SD03	CRP-SD03	CRP-SD04	CRP-SD05	CRP-SD06	CRP-SD06	CRP-SD06
SAMPLE DATE		06/19/09	06/19/09	06/19/09	06/19/09	06/18/09	06/18/09	06/18/09	06/18/09	06/15/09	06/15/09	06/15/09	06/15/09
TOP DEPTH		0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH		0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT	0.5 FT
SACODE		NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	FD
METALS (MG/KG)													
ALUMINUM		3680 J	5070 J	4330	3380 J	2850	2795	2740	3160	3560	4020	4130	4240
ANTIMONY	2	1.3 J	3.3 J	1.6 J	1.8 UJ	0.29 J	0.29 J	0.62 UJ	0.62 UJ	0.92 U	0.92 U	0.91 U	0.9 U
ARSENIC	6	8.8	8.7	8.9	19.4	2	1.95	1.9	2.9	3	2.6	2.6	2.6
BARIUM	20	6.1	8.3	13.9	19.1	6.4	6	5.6	8	10.1	8.5	8.65	8.8
BERYLLIUM		0.28 J	0.33	0.26 J	0.32	0.13 J	0.13 J	0.13 J	0.19 J	0.21 J	0.2 J	0.205 J	0.21 J
CADMIUM	0.676	0.15 J	0.6 UJ	0.17 J	0.61 UJ	0.15 J	0.15 J	0.15 J	0.14 J	0.15 J	0.19 J	0.185 J	0.18 J
CALCIUM		7130	6380	11400	4910	1240	1185	1130	1780	3460 J	3530 J	3345 J	3160 J
CHROMIUM	52	13.7	17.1	13.8	11.4	9.3	9.1	8.9	9.9	10.3	10.3	10.35	10.4
COBALT	10	7.6	10.4	9.3	18.8	3.3	3.3	3.3	4	3.8	3.2	3.2	3.2
COPPER	18.7	207	47.9	50.7	36.9	6.9	6.35	5.8	8.5	10.7	7.6	7.7	7.8
IRON		35200	35100	29600 J	44200	10800	10650 J	10500 J	13600 J	13500 J	10500 J	10700 J	10900 J
LEAD	21	215 J	223 J	424	71.2 J	33.2	35.4	37.6	43.3	58.3 J	46.1 J	45.2 J	44.3 J
MAGNESIUM		2400	2860	2570	3260	1530	1500	1470	1890	1880	1950	1995	2040
MANGANESE	260	299	411	437 J	2190	124 J	121 J	118 J	143 J	148 J	116 J	118.5 J	121 J
NICKEL	15.9	23.2	47.4	23.6	44.8	8.4	8.2	8	10.1	10.7	8.4	8.6	8.8
POTASSIUM		452 J	633 J	527 J	596 J	354 J	358.5 J	363 J	459 J	594 J	660 J	660.5 J	661 J
SELENIUM	1	0.78 UJ	0.78 UJ	0.29 UJ	2 U	0.27 U	0.22 UJ	0.17 UJ	0.27 U	0.26 UJ	0.4 U	0.3 UJ	0.2 UJ
SILVER	0.5	0.36 U	0.36 U	0.19 U	0.36 U	0.12 U	0.12 U	0.12 U	0.12 U	0.18 U	0.18 U	0.18 U	0.18 U
SODIUM		2670	2390	2550	1770	2560	2665	2770	2880	2820	2570	2550	2530
THALLIUM		0.96 U	0.96 U	0.5 U	0.97 U	0.33 U	0.33 U	0.33 U	0.33 U	0.49 U	0.49 U	0.485 U	0.48 U
VANADIUM	57	16	17.2	18	13.1	13.5	12.65	11.8	12.7	15.3 J	12.9 J	13.15 J	13.4 J
ZINC	68	89.3 J	72.4 J	99.7	65.1 J	40.3	40.1	39.9	43.3	48.7	40.5	40.95	41.4

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-4
ANALYTICAL RESULTS - SEDIMENT
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID		CRP-SD01-0006	CRP-SD06 0612	CRP-SD07 0006	CRP-SD07 0612	CRP-SD08 0006	CRP-SD08 0612	CRP-SD09 0006	CRP-SD09 0612	CRP-SD10 0006	CRP-SD10 0006-AVG	CRP-SD10 0006-D
LOCATION ID		CRP-SD01	CRP-SD06	CRP-SD07	CRP-SD07	CRP-SD08	CRP-SD08	CRP-SD09	CRP-SD09	CRP-SD10	CRP-SD10	CRP-SD10
SAMPLE DATE		06/19/09	06/15/09	06/15/09	06/15/09	06/19/09	06/19/09	06/19/09	06/19/09	06/17/09	06/17/09	06/17/09
TOP DEPTH		0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH		0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT	0.5 FT
SACODE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
SEMIVOLATILES (UG/KG)												
2-METHYLNAPHTHALENE	20000	250 U	240 U	240 U	240 U	250 U	240 U	250 U	250 U	NA	NA	NA
ACENAPHTHENE	6710	110 J	240 U	240 U	240 U	250 U	240 U	250 U	250 U	NA	NA	NA
ACENAPHTHYLENE	5870	250 U	240 U	240 U	240 U	250 U	240 U	250 U	250 U	NA	NA	NA
ANTHRACENE	46900	160 J	240 U	240 U	240 U	250 U	240 U	250 U	250 U	NA	NA	NA
BENZO(A)ANTHRACENE	74800	820	240 U	64 J	240 U	250 U	240 U	250 U	110 J	NA	NA	NA
BENZO(A)PYRENE	88800	1100 J	240 U	240 U	240 U	250 U	240 U	250 U	250 UJ	NA	NA	NA
BENZO(B)FLUORANTHENE	1800000	1200 J	240 U	240 U	240 U	250 U	240 U	250 U	250 UJ	NA	NA	NA
BENZO(G,H,I)PERYLENE	670000	830 J	240 U	240 U	240 U	250 U	240 U	250 U	230 J	NA	NA	NA
BENZO(K)FLUORANTHENE	240000	440 J	240 U	240 U	240 U	250 U	240 U	250 U	250 UJ	NA	NA	NA
CHRYSENE	107000	930	240 U	62 J	240 U	250 U	240 U	250 U	120 J	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	6000	250 UJ	240 U	240 U	240 U	250 U	240 U	250 U	250 UJ	NA	NA	NA
FLUORANTHENE	113000	1100	240 U	130 J	240 U	250 U	240 U	250 U	170 J	NA	NA	NA
FLUORENE	19000	81 J	240 U	240 U	240 U	250 U	240 U	250 U	250 U	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS		8430 J	240 U	386 J	240 U	250 U	240 U	250 U	810 J	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	600000	910 J	240 U	240 U	240 U	250 U	240 U	250 U	250 UJ	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS		1101 J	35 J	110 J	240 U	250 U	240 U	250 U	110 J	NA	NA	NA
NAPHTHALENE	34600	250 U	240 U	240 U	240 U	250 U	240 U	250 U	250 U	NA	NA	NA
PHENANTHRENE	86000	750	35 J	110 J	240 U	250 U	240 U	250 U	110 J	NA	NA	NA
PYRENE	152000	1100	240 U	130 J	240 U	250 U	240 U	250 U	180 J	NA	NA	NA
TOTAL PAHS		9531 J	35 J	496 J	240 U	250 U	240 U	250 U	920 J	NA	NA	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-4
ANALYTICAL RESULTS - SEDIMENT
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID		CRP-SD01-0006	CRP-SD06 0612	CRP-SD07 0006	CRP-SD07 0612	CRP-SD08 0006	CRP-SD08 0612	CRP-SD09 0006	CRP-SD09 0612	CRP-SD10 0006	CRP-SD10 0006-AVG	CRP-SD10 0006-D
LOCATION ID		CRP-SD01	CRP-SD06	CRP-SD07	CRP-SD07	CRP-SD08	CRP-SD08	CRP-SD09	CRP-SD09	CRP-SD10	CRP-SD10	CRP-SD10
SAMPLE DATE		06/19/09	06/15/09	06/15/09	06/15/09	06/19/09	06/19/09	06/19/09	06/19/09	06/17/09	06/17/09	06/17/09
TOP DEPTH		0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT	0 FT
BOTTOM DEPTH		0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT	0.5 FT
SACODE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	PAL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
METALS (MG/KG)												
ALUMINUM		3680 J	4080	3850	4090	3460	3820	2920	2860	3640	3740	3840
ANTIMONY	2	1.3 J	0.9 U	0.42 J	0.9 U	0.87 J	0.32 J	0.91 UJ	0.33 J	0.91 UJ	0.91 UJ	0.91 UJ
ARSENIC	6	8.8	2.4	3.5 J	3.2	2.4	3.8	2.3	2.1	2.2	2.2	2.2
BARIUM	20	6.1	7.8	8.7	8.3	6.5	8.5	6.2	6.1	7.5	7.75	8
BERYLLIUM		0.28 J	0.19 J	0.25 J	0.22 J	0.14 J	0.17 J	0.16 J	0.14 J	0.17 J	0.165 J	0.16 J
CADMIUM	0.676	0.15 J	0.15 J	0.15 J	0.1 J	0.19 J	0.22 J	0.19 J	0.2 J	0.17 J	0.19 J	0.21 J
CALCIUM		7130	1320 J	3820 J	943 J	7050	1690	3540	2450	2990 J	3960 J	4930
CHROMIUM	52	13.7	9.1	10	10.3	10.1	11.3	9.2	9.9	10	10.4	10.8
COBALT	10	7.6	3.4	3.3	3.6	3.1	3.7	3.5	3.2	2.4	2.5	2.6
COPPER	18.7	207	6.5	7	8	6.3	7.9	6.3	6.2	6.5	6.8	7.1
IRON		35200	10100 J	11900 J	11900 J	10100 J	11700 J	11800 J	10600 J	8540 J	8655 J	8770
LEAD	21	215 J	50.1 J	136 J	29.5 J	230	54.4	43.1	70.5	61.3 J	67.3 J	73.3
MAGNESIUM		2400	1930	1760	1980	1700	1810	1530	1460	1810	1855	1900
MANGANESE	260	299	117 J	117 J	123 J	105 J	109 J	127 J	115 J	94.9 J	93.55 J	92.2 J
NICKEL	15.9	23.2	8.7	9.1	9.5	8	9.1	8.8	8.1	7.2	7.2	7.2
POTASSIUM		452 J	546 J	527 J	622 J	437 J	507 J	430 J	401 J	617 J	610 J	603 J
SELENIUM	1	0.78 UJ	0.39 U	0.39 U	0.28 UJ	0.27 UJ	0.38 U	0.39 U	0.4 U	0.4 J	0.27 J	0.28 UJ
SILVER	0.5	0.36 U	0.18 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
SODIUM		2670	1770	2150	2440	2170	2050	2150	1900	2750	2690	2630
THALLIUM		0.96 U	0.48 U	0.48 U	0.48 U	0.49 U	0.47 U	0.49 U	0.49 U	0.49 U	0.485 U	0.48 U
VANADIUM	57	16	13.1 J	16.8 J	16.1 J	11.7	13.6	12.1	11.1	10.3 J	10.35 J	10.4
ZINC	68	89.3 J	34.9	40.4	39.7	38.4	44.3	43.5	41.1	34.4	34.9	35.4

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-4
ANALYTICAL RESULTS - SEDIMENT
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID		CRP-SD01-0006	CRP-SD10 0612	CRP-SD11 0006	CRP-SD11 0612	CRP-SD12 0006	CRP-SD13 0006	CRP-SD13 0612	CRP-SD14 0006	CRP-SD14 0612	CRP-SD15 0006	CRP-SD15 0006-AVG
LOCATION ID		CRP-SD01	CRP-SD10	CRP-SD11	CRP-SD11	CRP-SD12	CRP-SD13	CRP-SD13	CRP-SD14	CRP-SD14	CRP-SD15	CRP-SD15
SAMPLE DATE		06/19/09	06/17/09	06/16/09	06/16/09	06/18/09	06/17/09	06/17/09	06/18/09	06/18/09	06/16/09	06/16/09
TOP DEPTH		0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT
BOTTOM DEPTH		0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT
SACODE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	PAL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
SEMIVOLATILES (UG/KG)												
2-METHYLNAPHTHALENE	20000	250 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	6710	110 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	5870	250 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	46900	160 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	74800	820	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	88800	1100 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	1800000	1200 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	670000	830 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	240000	440 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	107000	930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	6000	250 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	113000	1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	19000	81 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS		8430 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	600000	910 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS		1101 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	34600	250 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	86000	750	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	152000	1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PAHS		9531 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-4
ANALYTICAL RESULTS - SEDIMENT
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID		CRP-SD01-0006	CRP-SD10 0612	CRP-SD11 0006	CRP-SD11 0612	CRP-SD12 0006	CRP-SD13 0006	CRP-SD13 0612	CRP-SD14 0006	CRP-SD14 0612	CRP-SD15 0006	CRP-SD15 0006-AVG
LOCATION ID		CRP-SD01	CRP-SD10	CRP-SD11	CRP-SD11	CRP-SD12	CRP-SD13	CRP-SD13	CRP-SD14	CRP-SD14	CRP-SD15	CRP-SD15
SAMPLE DATE		06/19/09	06/17/09	06/16/09	06/16/09	06/18/09	06/17/09	06/17/09	06/18/09	06/18/09	06/16/09	06/16/09
TOP DEPTH		0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT
BOTTOM DEPTH		0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT
SACODE		NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	PAL	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
METALS (MG/KG)												
ALUMINUM		3680 J	3530	4020	3860	4720	3270	3210	3210	3210	3170	3140
ANTIMONY	2	1.3 J	0.34 J	0.29 J	0.51 J	0.41 J	0.63 UJ	0.62 UJ	0.62 UJ	0.93 UJ	0.63 U	0.78 U
ARSENIC	6	8.8	1.9	3	2.1	3.5	1.9	1.8	1.7	1.8	1.9	1.9
BARIUM	20	6.1	7	8.2	6.4	9.4	6.2	5.7	5.7	5.9	6.1	6.3
BERYLLIUM		0.28 J	0.15 J	0.21 J	0.18 J	0.22 J	0.14 J	0.13 J	0.12 J	0.14 J	0.15 J	0.145 J
CADMIUM	0.676	0.15 J	0.16 J	0.16 J	0.095 J	0.18 J	0.11 J	0.14 J	0.12 J	0.16 J	0.11 J	0.12 J
CALCIUM		7130	1370 J	6610 J	1030 J	7220	924 J	3480 J	835	672	1660 J	1695 J
CHROMIUM	52	13.7	8.6	11.6	9.3	12.5	9.3	8.7	9.1	9.2	8.5	8.5
COBALT	10	7.6	2.2	2.7	2.6	3.3	2.4	2.4	2.4	2.4	2.2	2.2
COPPER	18.7	207	5.5	9.3	6.2	10.4	5	5.4	5	5.1	4.8	4.8
IRON		35200	7830 J	9940 J	10100 J	11500	8490 J	7800 J	7780	7880	7840 J	7760 J
LEAD	21	215 J	109 J	152 J	169 J	99.7	20.9 J	23.5 J	27	39.4	48.5 J	48.8 J
MAGNESIUM		2400	1670	2070	1840	2380	1640	1600	1650	1660	1650	1600
MANGANESE	260	299	89.8 J	107 J	112 J	120 J	92.5 J	86.6 J	81.5 J	84 J	89.5 J	87.75 J
NICKEL	15.9	23.2	6.7	8.6	8.2	8.9	6.7	6.6	6.2	6.9	7.8	7.5
POTASSIUM		452 J	500 J	768 J	476 J	773 J	481 J	429 J	443 J	438 J	512 J	509 J
SELENIUM	1	0.78 UJ	0.27 UJ	0.22 UJ	0.21 UJ	0.26 UJ	0.19 UJ	0.13 UJ	0.12 UJ	0.25 UJ	0.27 U	0.275 UJ
SILVER	0.5	0.36 U	0.18 U	0.11 J	0.18 U	0.13 U	0.13 U	0.12 U	0.12 U	0.19 U	0.13 U	0.16 U
SODIUM		2670	2120	3910	2030	3890	2670	2530	2690	2420	2790	2655
THALLIUM		0.96 U	0.49 U	0.35 U	0.48 U	0.35 U	0.34 U	0.33 U	0.33 U	0.49 U	0.34 U	0.415 U
VANADIUM	57	16	9.5 J	13.3 J	12 J	12.2	10.2 J	9.1 J	8.7	8.9	9.5 J	9.3 J
ZINC	68	89.3 J	29.8	44.4	34.5	43.6	31.6	31.8	29.4	30.7	30.8	30.2

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-4
ANALYTICAL RESULTS - SEDIMENT
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID		CRP-SD01-0006	CRP-SD150006-D	CRP-SD150612	CRP-SD160006	CRP-SD160612	CRP-SD170006	CRP-SD180006	CRP-SD180612	CRP-SD190006	CRP-SD190612	CRP-SD200006
LOCATION ID		CRP-SD01	CRP-SD15	CRP-SD15	CRP-SD16	CRP-SD16	CRP-SD17	CRP-SD18	CRP-SD18	CRP-SD19	CRP-SD19	CRP-SD20
SAMPLE DATE		06/19/09	06/16/09	06/16/09	06/17/09	06/17/09	06/16/09	06/16/09	06/16/09	06/16/09	06/16/09	06/17/09
TOP DEPTH		0 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT
BOTTOM DEPTH		0.5 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT
SACODE		NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM
SEMIVOLATILES (UG/KG)												
2-METHYLNAPHTHALENE	20000	250 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	6710	110 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	5870	250 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	46900	160 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	74800	820	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	88800	1100 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	1800000	1200 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	670000	830 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	240000	440 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	107000	930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	6000	250 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	113000	1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	19000	81 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HIGH MOLECULAR WEIGHT PAHS		8430 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	600000	910 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LOW MOLECULAR WEIGHT PAHS		1101 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	34600	250 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	86000	750	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	152000	1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PAHS		9531 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-4
ANALYTICAL RESULTS - SEDIMENT
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID		CRP-SD01-0006	CRP-SD15 0006-D	CRP-SD15 0612	CRP-SD16 0006	CRP-SD16 0612	CRP-SD17 0006	CRP-SD18 0006	CRP-SD18 0612	CRP-SD19 0006	CRP-SD19 0612	CRP-SD20 0006
LOCATION ID		CRP-SD01	CRP-SD15	CRP-SD15	CRP-SD16	CRP-SD16	CRP-SD17	CRP-SD18	CRP-SD18	CRP-SD19	CRP-SD19	CRP-SD20
SAMPLE DATE		06/19/09	06/16/09	06/16/09	06/17/09	06/17/09	06/16/09	06/16/09	06/16/09	06/16/09	06/16/09	06/17/09
TOP DEPTH		0 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT	0 FT	0.5 FT	0 FT	0.5 FT	0 FT
BOTTOM DEPTH		0.5 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT	0.5 FT	1 FT	0.5 FT	1 FT	0.5 FT
SACODE		NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	PAL	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM
METALS (MG/KG)												
ALUMINUM		3680 J	3110	3600	3850	3540	4050 J	2910	2800	3150	3060	3340
ANTIMONY	2	1.3 J	0.93 U	0.35 J	0.64 UJ	0.68 J	0.68 U	0.64 U	0.64 U	0.64 U	0.62 U	0.63 UJ
ARSENIC	6	8.8	1.9	3	2.6	2.8	3.9	1.7	1.7	2	1.8	1.9
BARIUM	20	6.1	6.5	7.2	8.3	7.4	11.1	5.4	5.5	5.8	5.6	6.6
BERYLLIUM		0.28 J	0.14 J	0.18 J	0.16 J	0.15 J	0.23 J	0.14 J	0.14 J	0.15 J	0.14 J	0.13 J
CADMIUM	0.676	0.15 J	0.13 J	0.15 J	0.21 J	0.21 J	0.2 J	0.068 J	0.08 J	0.095 J	0.094 J	0.15 J
CALCIUM		7130	1730 J	1480 J	12400	5790	36100 J	626 J	604 J	894 J	1200 J	3120
CHROMIUM	52	13.7	8.5	9	10.5	10.3	11.9	7.9	8.2	8.7	8.5	10
COBALT	10	7.6	2.2	2.2	2.7	2.5	3.1	1.9	1.9	2.1	2	2.5
COPPER	18.7	207	4.8	5.7	8.3	7.8	10.5	3.9	4.6	4.5	4.9	5.1
IRON		35200	7680 J	10100 J	8380	7540	10800 J	7760 J	7660 J	8260 J	7640 J	7940
LEAD	21	215 J	49.1 J	83.6 J	37.9	158	27.9 J	7.2 J	7.8 J	8.6 J	8.1 J	11
MAGNESIUM		2400	1550	2010	1940	1640	2540	1570	1530	1670	1620	1700
MANGANESE	260	299	86 J	92.5 J	89.8 J	79.5 J	134 J	92.5 J	86.9 J	93.6 J	90 J	83.9 J
NICKEL	15.9	23.2	7.2	9.4	8.3	8.6	8.5	5.8	5.9	6.3	6.2	6.5
POTASSIUM		452 J	506 J	646 J	663 J	542 J	922 J	460 J	451 J	514 J	465 J	488 J
SELENIUM	1	0.78 UJ	0.28 UJ	0.33 UJ	0.29 UJ	0.33 J	0.34 UJ	0.16 UJ	0.28 U	0.28 U	0.21 UJ	0.27 U
SILVER	0.5	0.36 U	0.19 U	0.14 U	0.13 U	0.058 J	0.086 J	0.13 U	0.13 U	0.13 U	0.12 U	0.13 U
SODIUM		2670	2520	4530	3390	2190	4910	2800	2850	2940	2720	2590
THALLIUM		0.96 U	0.49 U	0.36 U	0.34 U	0.34 U	0.36 U	0.34 U	0.34 U	0.34 U	0.33 U	0.33 U
VANADIUM	57	16	9.1 J	11.7 J	10	9.9	13.7 J	9.7 J	9.9 J	10.2 J	10 J	9.2
ZINC	68	89.3 J	29.6	32.5	38.4	35.1	41.8 J	26.5	29.6	29.5	31.1	31.8

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-4
ANALYTICAL RESULTS - SEDIMENT
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID		CRP-SD01-0006	CRP-SD200612
LOCATION ID		CRP-SD01	CRP-SD20
SAMPLE DATE		06/19/09	06/17/09
TOP DEPTH		0 FT	0.5 FT
BOTTOM DEPTH		0.5 FT	1 FT
SACODE		NORMAL	NORMAL
QC TYPE	PAL	NM	NM
SEMIVOLATILES (UG/KG)			
2-METHYLNAPHTHALENE	20000	250 U	NA
ACENAPHTHENE	6710	110 J	NA
ACENAPHTHYLENE	5870	250 U	NA
ANTHRACENE	46900	160 J	NA
BENZO(A)ANTHRACENE	74800	820	NA
BENZO(A)PYRENE	88800	1100 J	NA
BENZO(B)FLUORANTHENE	1800000	1200 J	NA
BENZO(G,H,I)PERYLENE	670000	830 J	NA
BENZO(K)FLUORANTHENE	240000	440 J	NA
CHRYSENE	107000	930	NA
DIBENZO(A,H)ANTHRACENE	6000	250 UJ	NA
FLUORANTHENE	113000	1100	NA
FLUORENE	19000	81 J	NA
HIGH MOLECULAR WEIGHT PAHS		8430 J	NA
INDENO(1,2,3-CD)PYRENE	600000	910 J	NA
LOW MOLECULAR WEIGHT PAHS		1101 J	NA
NAPHTHALENE	34600	250 U	NA
PHENANTHRENE	86000	750	NA
PYRENE	152000	1100	NA
TOTAL PAHS		9531 J	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE E-4
ANALYTICAL RESULTS - SEDIMENT
MRP SITE 1, CARR POINT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID		CRP-SD01-0006	CRP-SD200612
LOCATION ID		CRP-SD01	CRP-SD20
SAMPLE DATE		06/19/09	06/17/09
TOP DEPTH		0 FT	0.5 FT
BOTTOM DEPTH		0.5 FT	1 FT
SACODE		NORMAL	NORMAL
QC TYPE	PAL	NM	NM
METALS (MG/KG)			
ALUMINUM		3680 J	3480
ANTIMONY	2	1.3 J	0.62 UJ
ARSENIC	6	8.8	1.9
BARIUM	20	6.1	6.6
BERYLLIUM		0.28 J	0.13 J
CADMIUM	0.676	0.15 J	0.17 J
CALCIUM		7130	2410
CHROMIUM	52	13.7	9.8
COBALT	10	7.6	2.5
COPPER	18.7	207	6.3
IRON		35200	7890
LEAD	21	215 J	11.4
MAGNESIUM		2400	1670
MANGANESE	260	299	82.4 J
NICKEL	15.9	23.2	7
POTASSIUM		452 J	477 J
SELENIUM	1	0.78 UJ	0.19 UJ
SILVER	0.5	0.36 U	0.12 U
SODIUM		2670	2170
THALLIUM		0.96 U	0.33 U
VANADIUM	57	16	9.9
ZINC	68	89.3 J	33.4

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

APPENDIX F

SUPPORT DOCUMENTATION FOR ECOLOGICAL RISK EVALUATION

APPENDIX F TABLE 1

TOXICITY REFERENCE VALUES FOR TERRESTRIAL FOR CHAIN MODELS
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

PARAMETER	Mammal		Bird	
	NOAEL	LOAEL	NOAEL	LOAEL
VOLATILES				
Acetone	10	50	NV	NV
Tetrachloroethene	1.4	7	NV	NV
SEMIVOLATILES				
1,1-Biphenyl	5	50	NV	NV
2-Methylnaphthalene	65.6	356	2	20
Acenaphthene	65.6	356	2	20
Acenaphthylene	65.6	356	2	20
Anthracene	65.6	356	2	20
Benzo(a)anthracene	0.615	38.4	2	20
Benzo(a)pyrene	0.615	38.4	2	20
Benzo(b)fluoranthene	0.615	38.4	2	20
Benzo(g,h,i)perylene	0.615	38.4	2	20
Benzo(k)fluoranthene	0.615	38.4	2	20
Carbazole	0.615	38.4	2	20
Chrysene	0.615	38.4	2	20
Dibenzo(a,h)anthracene	0.615	38.4	2	20
Dibenzofuran	0.615	38.4	2	20
Fluoranthene	65.6	356	2	20
Fluorene	65.6	356	2	20
Indeno(1,2,3-cd)pyrene	0.615	38.4	2	20
Naphthalene	65.6	356	2	20
Phenanthrene	65.6	356	2	20
Pyrene	0.615	38.4	2	20
PESTICIDES/PCBs				
4,4'-DDE	0.147	5.56	0.227	2.7
4,4'-DDT	0.147	5.56	0.227	2.7
Alpha-BHC	0.014	0.14	0.56	2.25
Alpha-Chlordane	4.58	9.16	2.14	10.7
Aroclor-1260	0.068	0.68	0.18	1.8
Dieldrin	0.015	1.27	0.0709	0.8
Endosulfan I	0.15	1.5	10	100
Endosulfan II	0.15	1.5	10	100
Endosulfan Sulfate	0.15	1.5	10	100
Endrin	0.092	0.92	0.01035	0.1035
Endrin Aldehyde	0.092	0.92	0.01035	0.1035
Endrin Ketone	0.092	0.92	0.01035	0.1035
Gamma-BHC (Lindane)	8	80	2	20
Gamma-Chlordane	4.58	9.16	2.14	10.7
Heptachlor Epoxide	0.1	1	NV	NV
EXPLOSIVES				
Nitroglycerin	3	32	NV	NV
2,4-Dinitrotoluene	0.2	1.5	NV	NV
INORGANICS				
Aluminum	1.93	19.3	109.7	1097
Antimony	0.059	2.76	NV	NV
Arsenic	1.04	4.55	2.24	4.51
Barium	51.8	82.7	NV	NV
Beryllium	0.532	0.673	NV	NV
Cadmium	0.77	6.9	1.47	6.35
Chromium	2.40	58.17	2.66	15.63
Cobalt	7.33	18.90	7.61	18.34
Copper	5.6	82.7	4.05	34.87
Iron	50	500	100	1000
Lead	4.7	186.4	1.63	44.63
Manganese	51.5	146	179	377
Mercury	0.032	0.16	0.0064	0.064
Nickel	1.70	14.77	6.71	18.57
Selenium	0.143	0.66	0.29	0.82
Silver	6.02	118.6	2.02	60.47
Vanadium	4.16	9.44	0.34	1.70
Zinc	75.4	298	66.1	171

Notes:
NV - No Value
NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level

The sources of these NOAELS and LOAELS are presented in the table titled "Sources and Endpoints for NOAELS and LOAELS for Terrestrial Wildlife" in this appendix.

The NOAELS and LOAELS in the source table were divided by 10 if a subchronic study was the basis for the value. Also, if only a NOAEL was available, the value was multiplied by 10 to estimate the LOAEL. If only a LOAEL was available, the value was divided by 10 to estimate the NOAEL.

Bird PAH TRVS are based on 7,12-Dimethylbenz(a)anthracene.

APPENDIX F TABLE 2

SOURCES AND ENPOINTS FOR NOAELS AND LOAELS FOR TERRESTRIAL WILDLIFE
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Parameters	Concentration (mg/kg-day)	Endpoint	Effect	Chronic/ Subchronic	Species	Primary Reference	Source of Reference
Volatile Organics							
Acetone	100	NOEL	systemic	subchronic	rat	USEPA, 1986	Sample et.al., 1996
Acetone	500	LOAEL	systemic	subchronic	rat	USEPA, 1986	Sample et.al., 1996
Methylene Chloride	5.85	NOAEL	systemic	chronic	rat	NCA, 1982	Sample et.al., 1996
Methylene Chloride	50	LOAEL	systemic	chronic	rat	NCA, 1982	Sample et.al., 1996
Tetrachloroethene	14	NOAEL	systemic	subchronic	mouse	Buben and O'Flaherty, 1985	Sample et.al., 1996
Tetrachloroethene	70	LOAEL	systemic	subchronic	mouse	Buben and O'Flaherty, 1985	Sample et.al., 1996
Semivolatiles Organics							
1,1-Biphenyl	250	LOAEL	systemic	subchronic	rat	Ambrose et al., 1960	IRIS, 2009
1,1-Biphenyl	50	NOAEL	systemic	subchronic	rat	Ambrose et al., 1960	IRIS, 2009
2-Methylnaphthalene	65.6	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
2-Methylnaphthalene	356	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Acenaphthene	65.6	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Acenaphthene	356	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Acenaphthylene	65.6	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Acenaphthylene	356	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Anthracene	65.6	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Anthracene	356	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Benzo(a)anthracene	0.615	NOAEL	growth	chronic	mammals	USEPA, 2007	
Benzo(a)anthracene	38.4	LOAEL	growth	chronic	mammals	USEPA, 2007	
Benzo(a)pyrene	0.615	NOAEL	growth	chronic	mammals	USEPA, 2007	
Benzo(a)pyrene	38.4	LOAEL	growth	chronic	mammals	USEPA, 2007	
Benzo(b)fluoranthene	0.615	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Benzo(b)fluoranthene	38.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Benzo(g,h,I)perylene	0.615	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Benzo(g,h,I)perylene	38.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Benzo(k)fluoranthene	0.615	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Benzo(k)fluoranthene	38.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Carbazole	0.615	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Carbazole	38.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Chrysene	0.615	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Chrysene	38.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Dibenzo(a,h)anthracene	0.615	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Dibenzo(a,h)anthracene	38.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Dibenzofuran	0.615	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Dibenzofuran	38.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Fluoranthene	65.6	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Fluoranthene	356	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Fluorene	65.6	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Fluorene	356	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Indeno(1,2,3-cd)pyrene	0.615	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Indeno(1,2,3-cd)pyrene	38.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Naphthalene	65.6	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	

APPENDIX F TABLE 2

SOURCES AND ENPOINTS FOR NOAELS AND LOAELS FOR TERRESTRIAL WILDLIFE
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Parameters	Concentration (mg/kg-day)	Endpoint	Effect	Chronic/ Subchronic	Species	Primary Reference	Source of Reference
Naphthalene	356	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Phenanthrene	65.6	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Phenanthrene	356	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Pyrene	0.615	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Pyrene	38.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Low Molecular Weight PAHs	65.6	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Low Molecular Weight PAHs	356	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
High Molecular Weight PAHs	0.615	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
High Molecular Weight PAHs	38.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
7,12-Dimethylbenz(a)anthracene	2	NOAEL	systemic	chronic	nestling/starlings	Trust et al., 1994	
7,12-Dimethylbenz(a)anthracene	20	LOAEL	systemic	chronic	nestling/starlings	Trust et al., 1994	
Pesticides/PCBs							
BHC (mixed isomers)	0.137	LOAEL	reproductive	chronic	mink	Bleavins et al., 1984	Sample et.al., 1996
BHC (mixed isomers)	0.563	NOAEL	reproductive	chronic	Japanese quail	Vos et al., 1971	Sample et.al., 1996
BHC (mixed isomers)	2.25	LOAEL	reproductive	chronic	Japanese quail	Vos et al., 1971	Sample et.al., 1996
gamma-BHC (lindane)	8	NOAEL	reproductive	chronic	rat	Palmer et al., 1978	Sample et.al., 1996
gamma-BHC (lindane)	20	LOAEL	reproductive	chronic	mallard duck	Chakravarty and Lahiri, 1986	Sample et.al., 1996
Chlordane	2.14	NOAEL	mortality	chronic	red-winged blackbird	Stickel et al., 1983	Sample et.al., 1996
Chlordane	10.7	LOAEL	mortality	chronic	red-winged blackbird	Stickel et al., 1983	Sample et.al., 1996
Chlordane	4.58	NOAEL	reproduction	chronic	mouse	WHO, 1984	Sample et.al., 1996
Chlordane	9.16	LOAEL	reproduction	chronic	mouse	WHO, 1984	Sample et.al., 1996
4,4'-DDT	0.147	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
4,4'-DDT	5.56	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
4,4'-DDT	0.227	NOAEL	reproduction & growth	chronic	birds	USEPA, 2007	
4,4'-DDT	2.7	LOAEL	reproduction & growth	chronic	birds	USEPA, 2007	
Dieldrin	0.0709	NOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Dieldrin	0.8	LOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Dieldrin	0.015	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Dieldrin	1.27	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Endosulfan	1.5	NOAEL	reproduction	subchronic	rat	Dikshith et al., 1984	ATSDR, 1993
Endosulfan	10	NOAEL	reproduction	chronic	gray partridge	Abiola, 1992	Sample et.al., 1996
Endrin	0.92	LOAEL	reproduction	chronic	mouse	Good and Ware, 1969	Sample et.al., 1996
Endrin	0.1035	LOAEL	reproduction	chronic	screech owl	Fleming et al., 1982	Sample et.al., 1996
Heptachlor	1	LOAEL	reproduction	chronic	mink	Crum et al., 1993	Sample et.al., 1996
Aroclor-1254	1.8	LOAEL	reproductive	chronic	pheasant	Dahlgren et al., 1972	Sample et.al., 1996
Aroclor-1254	0.68	LOAEL	reproduction	chronic	mouse	McCoy et al., 1995	Sample et.al., 1996
Explosives							
Nitroglycerin	3	NOAEL	growth	chronic	rat	USACHPPM, 2007	Ellis et al., 1978
Nitroglycerin	32	LOAEL	growth	chronic	rat	USACHPPM, 2007	Ellis et al., 1978
2,4-Dinitrotoluene	1	NOAEL	systemic	subchronic	bobwhite quail	Johnson et al., 2005	USACHPPM, 2006
2,4-Dinitrotoluene	5	LOAEL	systemic	subchronic	bobwhite quail	Johnson et al., 2005	USACHPPM, 2006
2,4-Dinitrotoluene	0.67	LED_{10}	neurotoxicity	chronic	dog	Ellis et al., 1979	USACHPPM, 2006
2,4-Dinitrotoluene	1.4	ED_{10}	neurotoxicity	chronic	dog	Ellis et al., 1979	USACHPPM, 2006
Inorganics							
Aluminum	109.7	NOAEL	reproductive	chronic	ringed dove	Carriere et al., 1986	Sample et.al., 1996
Aluminum	19.3	LOAEL	reproductive	chronic	mouse	Ondreicka et al., 1966	Sample et.al., 1996
Antimony	0.059	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Antimony	2.76	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Arsenic	2.24	NOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Arsenic	4.51	LOAEL	reproduction & growth	chronic	birds	USEPA, 2005	

APPENDIX F TABLE 2

SOURCES AND ENPOINTS FOR NOAELS AND LOAELS FOR TERRESTRIAL WILDLIFE
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Parameters	Concentration (mg/kg-day)	Endpoint	Effect	Chronic/ Subchronic	Species	Primary Reference	Source of Reference
Arsenic	1.04	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Arsenic	4.55	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Barium	51.8	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Barium	82.7	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Beryllium	0.532	NOAEL	Survival	chronic	rat	USEPA, 2005	
Beryllium	0.673	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Cadmium	1.47	NOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Cadmium	6.35	LOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Cadmium	0.77	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Cadmium	6.9	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Chromium(III)	2.66	NOAEL	reproduction & growth	chronic	birds	USEPA, 2008	
Chromium(III)	15.63	LOAEL	reproduction & growth	chronic	birds	USEPA, 2008	
Chromium(III)	2.4	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2008	
Chromium(III)	58.17	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2008	
Cobalt	7.61	NOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Cobalt	18.34	LOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Cobalt	7.33	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Cobalt	18.9	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Copper	4.05	NOAEL	reproduction & growth	chronic	birds	USEPA, 2007	
Copper	34.87	LOAEL	reproduction & growth	chronic	birds	USEPA, 2007	
Copper	5.6	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Copper	82.7	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Iron	500	LOAEL	unknown	chronic	rabbit	NAS, 1980	
Iron	1000	LOAEL	unknown	chronic	poultry	NAS, 1980	
Lead	1.63	NOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Lead	44.6	LOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Lead	4.7	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Lead	186.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Manganese	179	NOAEL	reproduction & growth	chronic	birds	USEPA, 2007	
Manganese	376.6	LOAEL	reproduction & growth	chronic	birds	USEPA, 2007	
Manganese	51.5	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Manganese	145.67	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Mercury	0.064	LOAEL	reproductive	chronic	mallard duck	Heinz, 1979	Sample et.al., 1996
Mercury	0.032	NOAEL	reproductive	chronic	rat	Verschuuren et al., 1976	Sample et.al., 1996
Mercury	0.16	LOAEL	reproductive	chronic	rat	Verschuuren et al., 1976	Sample et.al., 1996
Nickel	6.71	NOAEL	reproduction & growth	chronic	birds	USEPA, 2007	
Nickel	18.57	LOAEL	reproduction & growth	chronic	birds	USEPA, 2007	
Nickel	1.7	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Nickel	14.77	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Selenium	0.29	NOAEL	reproduction & growth	chronic	birds	USEPA, 2007	

APPENDIX F TABLE 2

SOURCES AND ENPOINTS FOR NOAELS AND LOAELS FOR TERRESTRIAL WILDLIFE
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Parameters	Concentration (mg/kg-day)	Endpoint	Effect	Chronic/ Subchronic	Species	Primary Reference	Source of Reference
Selenium	0.819	LOAEL	reproduction & growth	chronic	birds	USEPA, 2007	
Selenium	0.143	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Selenium	0.661	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Silver	2.02	NOAEL	reproduction & growth	chronic	birds	USEPA, 2006	
Silver	60.47	LOAEL	reproduction & growth	chronic	birds	USEPA, 2006	
Silver	6.02	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2006	
Silver	118.62	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2006	
Vanadium	0.344	NOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Vanadium	1.686	LOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Vanadium	4.16	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Vanadium	9.436	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Zinc	75.4	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Zinc	297.58	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Zinc	66.1	NOAEL	reproduction & growth	chronic	birds	USEPA, 2007	
Zinc	171.44	LOAEL	reproduction & growth	chronic	birds	USEPA, 2007	

Notes:

NOAEL = No Observed Adverse Effects Level

LOAEL = Lowest Observed Adverse Effects Level

The NOAELS and LOAELS for the following PAHs are based on the Low Molecular Weight PAH values: acenapthylene, acenaphthene, anthracene, fluoranthene, fluorene, phenanthrene, 2-methylnaphthalene, and naphthalene.

The NOAELS and LOAELS for the following PAHs are based on the High Molecular Weight PAH values: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, carbazole, chrysene, dibenzo(a,h)anthracene, dibenzofuran, indeno(1,2,3-c,d)pyrene, and pyrene.

The NOAELS and LOAELS for the PAHs for birds were based on 7,12-dimethylbenz(a)anthracene.

The LOAELs used for several metals were calculated as the geometric mean of growth and reproduction data from the Ecological Soil Screening Levels (U.S. EPA, 2005, 2006, 2007).

The LOAELs for Aroclor-1254 were used as surrogates for Aroclor-1260.

References for the NOAELS and LOAELs are presented in this Attachment and Titled "TRV Source and Endpoint References".

APPENDIX F

TRV SOURCE AND ENDPOINT REFERENCES

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RECEPTOR PROFILES
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

The following sections present the receptor profiles for the short-tailed shrew, meadow vole, American robin, northern bobwhite quail, raccoon, and Herring gull. The majority of the information for the profiles was obtained from the Wildlife Exposure Factors Handbook (USEPA, 1993). The data for the incidental soil ingestion rates were obtained from the USEPA Ecological Soil Screening Level Guidance (USEPA, 2007) or the Estimates of Soil Ingestion by Wildlife (Beyer, 1994).

The food and water ingestion rates are listed in g/g (of body weight)-day on a wet weight basis but were converted to dry weight for the ERA. The home ranges are presented in hectares in USEPA (1993) but were converted to acres by multiplying the number of hectares by 2.471. Also note that the estimated percent of soil in the diets are listed in dry weight. Appendix F Table 3 presents the calculation of the exposure parameters and how the calculations were done.

Short-Tailed Shrew (*Blarina brevicauda*)

Shrews inhabit a wide variety of habitats and are common in areas with abundant vegetative cover. They need cool, moist habitats because of their high metabolic and water-loss rates. The short-tailed shrew is primarily carnivorous, eating insects such as earthworms, slugs, and snails.

The adult body weight for the short-tailed shrew in various habitats ranged from 0.015 to 0.01921 kg with an average of 0.0161 kg. The listed food ingestion rates for shrews are 0.49 and 0.62 g/g-day, with an average of 0.555 g/g-day (wet-weight). The water ingestion rate was listed as 0.223 g/g-day. The food and water ingestion rates in kg/day and L/day, respectively, were calculated as shown in the attached table. The food ingestion rates were then multiplied by 0.16, which is the percent solids of worms (Sample et al., 1997) to convert the ingestion rate from a wet-weight value to a dry-weight value. The incidental soil ingestion rate was calculated by multiplying the ingestion rate by the percentage of soil that is incidentally ingested (assumed 3 percent for conservative food chain model and 0.9 percent for the average food chain model) from USEPA (2007).

The home range for the shrew (0. 9699 acres) was calculated using data from a tamarek bog in Manitoba (only value available).

Meadow Vole (*Microtus pennsylvanicus*)

Meadow voles inhabit grassy fields, marshes, and bogs; however, they prefer fields with more grass, more cover, and fewer woody plants. They typically consume green succulent vegetation, sedges, seeds, roots, bark, fungi, insects, and animal matter. However, green succulent vegetation makes up the majority of their diet.

The adult body weight for the vole ranges from 0.017 to 0.0524 kg with an average of 0.0358 kg. The only listed food ingestion rates for voles range from 0.30 to 0.35 g/g-day (wet-weight), with an average of 0.325 g/g-day. The water ingestion rates are 0.14 (estimated) and 0.21 g/g-day, with an average of 0.175 g/g-day. The food and water ingestion rates in kg/day and L/day, respectively, were calculated as shown in the attached table. The food ingestion rates were then multiplied by 0.30, which is the percent solids of young grass (Sample et al., 1997) to convert the ingestion rate from a wet-weight value to a dry-weight value. Finally, the incidental soil ingestion rate is calculated by multiplying the ingestion rate by the percentage of soil that is incidentally ingested (assumed 3.2 percent for the conservative food chain model and 1.2 percent for the average food chain model) from USEPA (2007).

The home range for the meadow vole ranges from 0.000494 to 0.2051 acres with an average home range of 0.0659 acres.

American Robin (*Turdus migratorius*)

American robins' habitats include parks, lawns, moist forests, swamps, open woodlands, and orchards. Robins forage on the ground in open areas, along habitat edges, or the edges of streams. They also may forage above ground in shrubs and within the lower branches of trees. In the months preceding and during the breeding season, robins feed primarily on invertebrates and on some fruits. During the rest of the year their diet consists primarily of fruits.

The adult body weight for the American robin in New York woodlands and forests and in Pennsylvania ranged from 0.0773 to 0.0862 kg with an average of 0.0804 kg. The only listed food ingestion rates were for robins in Kansas (1.52 g/g-day) and California (0.89 g/g-day), with an average of 1.205 g/g-day. Studies calculating ingestion rates for the robin included in the USEPA (December 1993) are based on a diet comprised of berries. Based on these studies, the food and water ingestion rates in kg/day and L/day, respectively, were calculated as shown in the attached table. The food ingestion rates were then multiplied by 0.23, which is the percent solids of fruit (Sample et al., 1997) to convert the ingestion rate from a wet-weight value to a dry-weight value. However, because it is assumed that the robin 100 percent of the robin's diet are worms for the food chain models, the ingestion rate for the robin was calculated using field metabolism scaling as presented on the attached table (Nagy et al., 1999). These are the values that will be used in the food chain model for this site.

The water ingestion rate was estimated as 0.14 g/g-day. The incidental soil ingestion rate was calculated by multiplying the ingestion rate by the percentage of soil that is incidentally ingested (assumed 3% for conservative food chain model and 1.5% for the average food chain model) from USEPA (2000). The 3% and 1.5% values are from the shrew since it is assumed that both the shrew and robin are consuming 100% worms, and no incidental soil ingestion rate was available for the robin.

The home range for the robin was calculated using data from Tennessee and a New York dense conifer forest. The values ranged from 0.27 to 1.04 acres with an average home range of 0.6095 acres.

Northern Bobwhite Quail (*Colinus virginianus*)

Quails inhabit grasslands, idle fields, pastures, and large clumps of grasses. Bobwhite quails forage in areas with open vegetation, some bare ground, and light litter. Seeds from weeds, woody plants, and grasses comprise the majority of an adult's diet, although green vegetation has been found to dominate the diet of this species in winter in the southern areas of the United States.

The adult body weight for the bobwhite quail ranges from 0.154 to 0.1939 kg with an average of 0.1751 kg. The listed food ingestion rates for quails range from 0.067 to 0.093 g/g-day (wet-weight), with an average of 0.078 g/g-day. The water ingestion rate is estimated as 0.10 and 0.11 g/g-day, and measured as 0.10 to 0.13 g/g-day, for an average water ingestion rate of 0.11 g/g-day. The food and water ingestion rates in kg/day and L/day, respectively, were calculated as shown in the attached table. The food ingestion rates were then multiplied by 0.30, which is the percent solids of young grass (Sample et al., 1997) to convert the ingestion rate from a wet-weight value to a dry-weight value. The incidental soil ingestion rate is calculated by multiplying the food ingestion rate by the percentage of soil that is incidentally ingested (assumed 13.9 percent for the conservative food chain model and 6.1 percent for the average food chain model) from USEPA (2007). These values are based on the incidental soil ingestion rate of a mourning dove, which also consumes terrestrial vegetation, because an incidental soil ingestion rate was not available for the quail.

The home range for the quail ranges from 8.9 to 41.3 acres with an average home range of 18.8 acres.

Raccoon (*Procyon lotor*)

Raccoons are found near virtually every aquatic habitat, particularly in hardwood swamps, mangroves, floodplain forests, and freshwater and saltwater marshes. They are also common in suburban residential areas. They use surface waters for both drinking and foraging. They feed primarily on fleshy fruits, nuts, acorns, and corn, but also eat grains, insects, frogs, crayfish, eggs, and virtually any animal and vegetable matter.

The adult body weight for the raccoon ranges from 3.67 to 7.6 kg, with an average of 5.64 kg. The water ingestion rate ranges from 0.082 to 0.083 g/g-day, which is converted to the ingestion rate in L/day by multiplying the value by the body weight of the raccoon. The incidental sediment ingestion rate is calculated by multiplying the ingestion rate by the percentage of sediment that is incidentally ingested (9.4 percent), as cited in Beyer (1994).

The home range for the conservative model is assumed to be equal to the size of the site indicating that the raccoon will spend all of its time at the site. The typical home range sizes for the raccoon are 96 to 6,325 acres for an average home range of 1,558 acres.

Herring Gull

Herring gulls are abundant in temperate coastal areas and primarily nest on sandy or rocky offshore or barrier beach islands. They can also be found in coastal marshes, peninsulas, or cliffs along seacoasts, lakes, and rivers (USEPA, 1993). They forage on open water around concentrations of prey, which may include fish, crustacea, mollusks, worms, and insects, among other things.

The adult body weight of the Herring gull ranges from 0.951 to 1.232 kg, with an average of 1.0915 kg. The listed food ingestion rates of the Herring gull were 0.20 and 0.21 g/g-day (wet-weight), with an average of 0.205 g/g-day. The water ingestion rate ranges from 0.0558 to 0.059 g/g-day, with an average of 0.057 g/g-day. The food and water ingestion rates in kg/day and L/day, respectively, were calculated as shown in the attached table. The food ingestion rates were then multiplied by 0.15, which is the percent solids of mussels (Sample et al., 1997) to convert the ingestion rate from a wet-weight value to a dry-weight value. The incidental sediment ingestion rate is calculated by multiplying the ingestion rate by the percentage of sediment that is incidentally ingested (8.2 percent), from Beyer (1994) and USEPA (2007).

The foraging range for the Herring gull ranges from 3 to 50 km-radius with an average of 10 km-radius.

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APPENDIX F TABLE 3

DRY WEIGHT DERIVATION OF BODY WEIGHT, FOOD INTAKE, AND WATER INTAKE FACTORS FOR TERRESTRIAL FOOD CHAIN MODELS
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Data from EPA (1993)				Derivation of Factors for Modeling		
Species/Factor	**Age/Sex/ Cond./Seas.**	**Value**	**Study Average**	**Calculation of Values**		**Notes**
American Robin						
Body Weight (g)	A B	77.3	77.3	Minimum Value	0.0773 kg	
				Maximum Value	0.0862 kg	
	A M nonbreeding	86.2		Overall Study Average	0.0804 kg	
	A F nonbreeding	83.6	84.9			
	A M breeding	77.4				
	A F breeding	80.6	79			
Food Ingestion Rate (g/g-day)	B B free-living	0.89		*For Eating Mostly Fruit*		
				Conservative value:	0.0281 kg/day	Maximum ingestion rate * Average Body weight * 0.23[1]
	- B free-living	1.52				
				Average value	0.0223 kg/day	Average ingestion rate * Average Body weight * 0.23[1]
						[1] - 0.23 = percent solids in fruit to convert to a dry weight ingestion rate
	Overall Study Average		1.21			
				Based on Metabolic Scaling		
					0.01247 kg/day	Used maximum body weight in below equation
					0.01188 kg/day	Used average body weight in below equation
						Food ingestion rates were calculated from Nagy et al., (1999) for insectivores as follows: FI = $(9.7*BW(g)^{0.705})/18kJ/g/1000$
Water Ingestion Rate (g/g-day)	A B	0.14		Conservative value:	0.012 L/day	Ingestion rate * Maximum Body weight
				Average value	0.011 L/day	Ingestion rate * Average Body weight
Short-Tailed Shrew						
Body Weight (g)	A B	15	15	Minimum Value	0.0150 kg	
				Maximum Value	0.01921 kg	
	M summer	19.21	17.27	Overall Study Average	0.01613 kg	
	F summer	17.4				
	M fall	16.87				
	M fall	15.58				
Food Ingestion Rate (g/g-day)	A B	0.49		Conservative value:	0.0016 kg/day	Maximum ingestion rate * Average Body weight * 0.16[1]
	A B	0.62		Average value	0.00143 kg/day	Average ingestion rate * Average Body weight * 0.16[1]
	Overall Study Average		0.555			[1] - 0.16 = percent solids in earthworms to convert to a dry weight ingestion rate
Water Ingestion Rate (g/g-day)	A B	0.223		Conservative value:	0.00428 L/day	Ingestion rate * Maximum Body weight
				Average value	0.00360 L/day	Ingestion rate * Average Body weight

APPENDIX F TABLE 3

DRY WEIGHT DERIVATION OF BODY WEIGHT, FOOD INTAKE, AND WATER INTAKE FACTORS FOR TERRESTRIAL FOOD CHAIN MODELS
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

	Data from EPA (1993)			Derivation of Factors for Modeling		
Species/Factor	**Age/Sex/ Cond./Seas.**	**Value**	**Study Average**	**Calculation of Values**		**Notes**
Meadow Vole						
Body Weight (g)	A M summer	40	36.7	Minimum Value	0.017 kg	
	A F summer	33.4		Maximum Value	0.052 kg	
				Overall Study Average	0.0358 kg	
	A M spring	52.4	48.0			
	A F spring	43.5				
	A B spring	26	21.2			
	A B summer	24.3				
	A B fall	17				
	A B winter	17.5				
	A M	35.5	37.3			
	A F	39				
Food Ingestion Rate (g/g-day)		0.3	0.33	Conservative value:	0.001878 kg/day	Maximum ingestion rate * Average Body weight * 0.15 [(1)]
		0.35				
				Average value	0.001744 kg/day	Average ingestion rate * Average Body weight * 0.15[(1)]
						[(1)] - 0.15 = percent solids in grass to convert to a dry weight ingestion rate
Water Ingestion Rate	A B	0.21	0.18	Conservative value:	0.007513 L/day	Maximum ingestion rate * Average Body weight
	A B	0.14		Average value	0.006261 L/day	Average ingestion rate * Average Body weight
Northern Bobwhite Quail						
Body Weight (g)	A B fall	189.9	191	Minimum Value	0.154 kg	
	A B winter	193.9		Maximum Value	0.194 kg	
	A B spring	190		Overall Study Average	0.1751 kg	
	A M winter	181	177			
	A M summer	163				
	A F winter	183				
	A F summer	180				
	A M winter	161	157			
	A M summer	154				
	A F winter	157				
	A F summer	157				
Food Ingestion Rate (g/g-day)	A B winter	0.093	0.078	Conservative value:	0.00244 kg/day	Maximum ingestion rate * Average Body weight * 0.15[(1)]
	A B spring	0.067				
	A B summer	0.079		Average value	0.00204 kg/day	Average ingestion rate * Average Body weight * 0.15[(1)]
	A B fall	0.072				
						[(1)] - 0.15 = percent solids in grass to convert to a dry weight ingestion rate
Water Ingestion Rate (g/g-day)	A M summer	0.1	0.11	Conservative value:	0.022762 L/day	Maximum ingestion rate * Average Body weight
	A F summer	0.13				
	A M summer	0.11		Average value	0.01926 L/day	Average ingestion rate * Average Body weight
	A F summer	0.1				

APPENDIX F TABLE 3

DRY WEIGHT DERIVATION OF BODY WEIGHT, FOOD INTAKE, AND WATER INTAKE FACTORS FOR TERRESTRIAL FOOD CHAIN MODELS
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Data from EPA (1993)				Derivation of Factors for Modeling			
Species/Factor	**Age/Sex/ Cond./Seas.**	**Value**	**Study Average**	**Calculation of Values**			**Notes**
Raccoon							
Body Weight (kg)	A M	7.6	6.7	Minimum Value	3.67	kg	
	A F parous	6.4		Maximum Value	7.6	kg	
	A F nulliparous	6		Overall Study Average	5.636	kg	
	A M	6.76	6.25				
	A F	5.74					
	A M	4.31	3.99				
	A F	3.67					
Food Ingestion Rate (g/g-day)			No Value	Conservative value:	0.237	kg/day	Used maximum body weight in below equation
				Average value	0.184	kg/day	Used average body weight in below equation
							Food ingestion rates were calculated from Nagy et al., (1999) for carnivores as follows: $FI = ((2.23)*BW(g)^{0.85})/1000$
Water Ingestion Rate (g/g-day)	A M	0.082	0.083	Conservative value:	0.468	L/day	Maximum ingestion rate * Average Body weight
	A F	0.083					
				Average value	0.465	L/day	Average ingestion rate * Average Body weight
Herring Gull							
Body Weight (kg)	A F spring	951	1068	Minimum Value	0.951	kg	
	A M winter	1184		Maximum Value	1.232	kg	
				Overall Study Average	1.0915	kg	
	A F spring	999	1115.5				
	A M winter	1232					
Food Ingestion Rate (g/g-day)	A M breeding	0.2	0.205	Conservative value:	0.03438	kg/day	Maximum ingestion rate * Average Body weight * 0.15[1]
	A MF breeding	0.21		Average value	0.03356	kg/day	Average ingestion rate * Average Body weight * 0.15[1]
							[1] - 0.15 = percent solids in mussels to convert to a dry weight ingestion rate
Water Ingestion Rate (g/g-day)	A M	0.055	0.057	Conservative value:	0.064399	L/day	Maximum ingestion rate * Average Body weight
	A F	0.059		Average value	0.062216	L/day	Average ingestion rate * Average Body weight

Notes:
A = Adult
F = Female, M = Male, B = Both
BW = Body Weight

APPENDIX F TABLE 4

DRY WEIGHT BAFS FOR PLANTS AND EARTHWORMS
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

	Plant BAFs[1,2,3]		Earthworm BAFs[3,4,5]	
Chemicals	**Conservative[8]**	**Average[8]**	**Conservative[8]**	**Average[8]**
VOLATILES				
Acetone	5.20E+00	5.20E+00	1.00E+00	1.00E+00
Tetrachloroethene	1.20E+00	1.20E+00	1.00E+00	1.00E+00
Semivolatile Organics				
1,1-Biphenyl	1.60E-01	1.60E-01	1.00E+00	1.00E+00
2-Methylnaphthalene	Eco-SSL	Eco-SSL	3.04E+00	3.04E+00
Acenaphthene	Eco-SSL	Eco-SSL	1.47E+00	1.47E+00
Acenaphthylene	Eco-SSL	Eco-SSL	2.29E+01	2.29E+01
Anthracene	Eco-SSL	Eco-SSL	2.42E+00	2.42E+00
Benzo(a)anthracene	Eco-SSL	Eco-SSL	1.59E+00	1.59E+00
Benzo(a)pyrene	Eco-SSL	Eco-SSL	1.33E+00	1.33E+00
Benzo(b)fluoranthene	3.10E-01	3.10E-01	2.60E+00	2.60E+00
Benzo(g,h,i)perylene	Eco-SSL	Eco-SSL	2.94E+00	2.94E+00
Benzo(k)Fluoranthene	Eco-SSL	Eco-SSL	2.60E+00	2.60E+00
Carbazole	2.40E-01	2.40E-01	1.00E+00	1.00E+00
Chrysene	Eco-SSL	Eco-SSL	2.29E+00	2.29E+00
Dibenzo(a,h)Anthracene	1.30E-01	1.30E-01	2.31E+00	2.31E+00
Dibenzofuran	1.50E-01	1.50E-01	1.00E+00	1.00E+00
Fluoranthene	5.00E-01	5.00E-01	3.04E+00	3.04E+00
Fluorene	Eco-SSL	Eco-SSL	9.57E+00	9.57E+00
Indeno(1,2,3-cd)pyrene	1.10E-01	1.10E-01	2.86E+00	2.86E+00
N-Nitrosodiphenylamine	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Naphthalene	1.22E+01	1.22E+01	4.40E+00	4.40E+00
Phenanthrene	Eco-SSL	Eco-SSL	1.72E+00	1.72E+00
Pyrene	7.20E-01	7.20E-01	1.75E+00	1.75E+00
Pesticides/ PCBs				
4,4'-DDE	Eco-SSL	Eco-SSL	Eco-SSL	Eco-SSL
4,4'-DDT	Eco-SSL	Eco-SSL	Eco-SSL	Eco-SSL
Total DDT	Eco-SSL	Eco-SSL	Eco-SSL	Eco-SSL
Alpha-Chlordane	2.50E-02	2.50E-02	5.00E+00	5.00E+00
Aroclor-1260	2.90E-03	2.90E-03	1.59E+01	6.67E+00
Dieldrin	8.20E-02	8.20E-02	1.47E+01	1.47E+01
Gamma-Chlordane	2.50E-02	2.50E-02	5.00E+00	5.00E+00
Endosulfan I	3.30E-01	3.30E-01	1.00E+00	1.00E+00
Endosulfan II	3.30E-01	3.30E-01	1.00E+00	1.00E+00
Endosulfan Sulfate	3.30E-01	3.30E-01	1.00E+00	1.00E+00
Endrin	8.20E-02	8.20E-02	3.60E+00	3.60E+00
Endrin Aldehyde	8.20E-02	8.20E-02	3.60E+00	3.60E+00
Endrin Ketone	8.20E-02	8.20E-02	3.60E+00	3.60E+00
Heptachlor Epoxide	2.80E-02	2.80E-02	3.00E+00	3.00E+00
gamma-BHC (Lindane)	2.70E-01	2.70E-01	5.00E+00	5.00E+00
Explosives				
2,4-Dinitrotoluene	2.60E+00	2.60E+00	1.00E+00	1.00E+00
Nitroglycerin	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Inorganics				
Aluminum	5.00E-03	2.87E-03	1.18E-01	4.30E-02
Antimony	Eco-SSL	Eco-SSL	1.00E+00	1.00E+00
Arsenic	3.75E-02	3.75E-02	Eco-SSL	Eco-SSL
Barium	1.56E-01	1.56E-01	9.10E-02	9.10E-02
Beryllium	Eco-SSL	Eco-SSL	4.50E-02	4.50E-02
Cadmium	Eco-SSL	Eco-SSL	Eco-SSL	Eco-SSL
Chromium	4.10E-02	4.10E-02	3.06E-01	3.06E-01
Cobalt	7.50E-03	7.50E-03	1.22E-01	1.22E-01
Copper	Eco-SSL	Eco-SSL	5.15E-01	5.15E-01
Iron	1.00E-02	4.25E-03	7.80E-02	3.60E-02
Lead	Eco-SSL	Eco-SSL	Eco-SSL	Eco-SSL
Manganese	7.90E-02	7.90E-02	Eco-SSL	Eco-SSL
Mercury	5.00E+00	6.52E-01	Regression	Regression
Selenium	Eco-SSL	Eco-SSL	Eco-SSL	Eco-SSL
Silver	1.40E-02	1.40E-02	2.05E+00	2.05E+00
Vanadium	4.85E-03	4.85E-03	4.20E-02	4.20E-02
Zinc	Eco-SSL	Eco-SSL	Eco-SSL	Eco-SSL

Notes:
BAF - Bioaccumulation Factor
Eco-SSL - USEPA Ecological Screening Level
Regression : Regression equation from Sample et al. 1998
1 - ORNL (2008) for organics; only one value is available for conservative and average exposures
2 - ORNL, (September, 1998) for inorganics; conservative value is 90th percentile; average value is median value
3 - Where "Eco-SSL" is given, values were calculated using regression of BAF equations from USEPA (2007), Attachment 4-1, Tables 4a (inorganics) and 4b (organics).
4 - Sample et al. (February, 1998) for aluminum (Table C.1), iron (Table C.1), mercury (Table 4), and nickel (Table 11).
5 - See Appendix F table 6 BAF Table for the derivation of the pesticide (gamma-chlordane) BAFs.
6 - Conservative and average refers to the exposure scenarios for which the uptake factors are used.

Default value of 1 is assigned to parameters without uptake factors

APPENDIX F TABLE 5

DRY WEIGHT BSAFS FOR FISH AND INVERTEBRATES
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

	Fish BSAFs[1]		Sediment Invertebrate BSAFs[3]	
Chemicals	**Conservative[2]**	**Average[2]**	**Conservative[2]**	**Average[2]**
Semivolatile Organics				
Acenaphthene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Anthracene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Benzo(a)anthracene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Benzo(a)pyrene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Benzo(b)fluoranthene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Benzo(g,h,i)perylene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Benzo(k)Fluoranthene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Chrysene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Dibenzo(a,h)Anthracene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Fluoranthene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Fluorene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Indeno(1,2,3-cd)pyrene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Phenanthrene	2.90E-01	2.90E-01	1.00E+00	1.00E+00
Inorganics				
Aluminum	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Antimony	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Arsenic	1.00E+00	1.00E+00	6.90E-01	1.43E-01
Barium	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Beryllium	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Cadmium	1.00E+00	1.00E+00	7.99E+00	6.00E-01
Chromium	1.00E+00	1.00E+00	4.68E-01	1.00E-01
Cobalt	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Copper	1.00E+00	1.00E+00	5.25E+00	1.56E+00
Iron	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Lead	1.00E+00	1.00E+00	6.07E-01	7.10E-02
Manganese	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Nickel	1.00E+00	1.00E+00	2.32E+00	4.86E-01
Selenium	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Silver	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Vanadium	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Zinc	1.00E+00	1.00E+00	7.53E+00	1.94E+00

Notes:
BAF - Bioaccumulation Factor
BSAF - Biota Sediment Accumulation Factor
1 - U.S. EPA, November 2004; only one value is available for conservative and average exposures. Values for organic chemicals are the same for wet-weight and dry weight.
2 - Conservative and average refers to the exposure scenarios for which the uptake factors are used
3 - ORNL (August, 1998) for all chemicals; conservative value is 90th percentile; average value is median value. Default value of 1 is assigned to parameters without uptake factors

APPENDIX F TABLE 6

SOIL TO EARTHWORM BAFS FOR PESTICIDES
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Parameter	Study Values: Worm Concentration Dry Weight	Study Values: Worm Concentration Wet Weight	Study Values: Soil Conc. (dry weight)	Study Values: Dry Weight BAF	Study Values: Wet Weight BAF	Calculated Values: Final Dry Weight[1] BAF	Calculated Values: Final Wet Weight[2] BAF	Reference	Comments
DDT	NA	NA	NA	5	NA	5	0.80	1	soil type unknown (11-year field study)
	0.5	NA	1	0.5	NA	0.5	0.080	2	compost (lab)
	6.9	NA	4	1.7	NA	1.7	0.28	2	compost (lab)
	37	NA	16	2.3	NA	2.3	0.37	2	compost (lab)
	159	NA	64	2.5	NA	2.5	0.40	2	compost (lab)
	NA	NA	NA	9	NA	9.0	1.44	3	from data collected in 67 agricultural fields
	NA	NA	NA	NA	1.2-4.9	7.5-31	1.2-4.9	4	agricultural soil (0.94 ppm DDT in soil)
Average dry/wet weight BAF from field studies[3]				***NA***	***NA***	***13.0***	***2.1***		
Dieldrin	NA	NA	NA	8	NA	8	1.28	1	soil type unknown (11-year field study)
	NA	NA	NA	2.4	NA	2.4	0.38	2	compost (lab) (17 ppm dieldrin in compost)
	NA	NA	NA	5.6	NA	5.6	0.90	2	compost (lab) (17 ppm dieldrin in compost)
	NA	18.4	25	NA	0.74	4.6	0.7	5	compost (20-day lab study)
	NA	24.4	25	NA	0.98	6.1	1.0	5	compost (20-day lab study)
	NA	4.6	10	NA	0.46	2.9	0.5	6	90-day lab study
	NA	9.7	30	NA	0.32	2.0	0.3	6	90-day lab study
	NA	12.4	50	NA	0.25	1.6	0.2	6	90-day lab study
	NA	13.9	100	NA	0.14	0.87	0.1	6	90-day lab study
	NA	NA	NA	NA	0.97-4	6.16-25	0.97-4	4	agricultural soil (1.36 ppm total aldrin and dieldrin in soil)
Average dry/wet weight BAF from field studies[3]				***NA***	***NA***	***6.64***	***1.06***		
gamma-BHC	NA	NA	NA	5	1.5-4.2	5	1.5-4.2	4	agricultural soil (0.004 ppm gamma-BHC in soil)
Average dry/wet weight BAF from field studies[3]				***NA***	***NA***	***5***	***2.85***		
Chlordane	NA	NA	NA	5	NA	5.0	0.8	3	from data collected in 7 agricultural fields
Endrin	NA	NA	NA	3.6	NA	3.6	0.576	3	from data collected in 26 agricultural fields
Heptachlor epoxide	NA	NA	NA	3	NA	3.0	0.48	3	from data collected in 9 agricultural fields

Notes:
BAF - bioaccumulation factor = worm concentration/soil concentration
NA - Not applicable
The percent solids of earthworms is assummed to be 0.16 [Sample et al., 1997])
1 - The calculated dry weight BAF was either obtained directly from the study or was calculated by dividing the wet weight BAF by 0.16
2 - The calculated wet weight BAF was either obtained directly from the study or was calculated by multiplying the dry weight BAF by 0.16
3 - The compost studies were not used in calculation of average BAF because the properties of the compost may be different than soil.
The compost studies were presented for informational purposes only.

APPENDIX F TABLE 6

SOIL TO EARTHWORM BAFS FOR PESTICIDES
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

References

1 - Beyer and Gish, 1980 and Beyer and Krynitsky, 1989
2 - Davis, 1971
3 - Gish, 1970
4 - Wheatly and Hardman, 1968
5 - Jeffries and Davis, 1968
6 - Venter and Reinecke, 1985

APPENDIX F TABLE 7

CHEMICAL CONCENTRATIONS IN SURFACE SOIL AND TISSUE
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Surface Soil Concentrations (mg/kg)					Earthworm Bioaccumulation Factors	
	Maximum Detection	Average All	Average of Positive Detections	Average [1]	95% UCL	Conservative	Average
Explosives							
2,4-DINITROTOLUENE	1.60E-01	1.41E-01	1.30E-01	1.41E-01	1.50E-01	1.00E+00	1.00E+00
NITROGLYCERIN	1.60E+01	7.28E+00	7.28E+00	7.28E+00	1.05E+01	1.00E+00	1.00E+00
Inorganics							
ALUMINUM	1.49E+04	1.09E+04	1.09E+04	1.09E+04	1.22E+04	1.18E-01	4.30E-02
ANTIMONY	8.50E+00	1.48E+00	2.18E+00	1.48E+00	2.40E+00	1.00E+00	1.00E+00
ARSENIC	8.55E+01	1.89E+01	1.89E+01	1.89E+01	4.20E+01	Regression equation from Eco SSL	
BARIUM	5.19E+01	2.56E+01	2.56E+01	2.56E+01	3.03E+01	9.10E-02	9.10E-02
BERYLLIUM	3.90E-01	3.23E-01	3.23E-01	3.23E-01	3.50E-01	4.50E-02	4.50E-02
CADMIUM	1.40E+00	5.74E-01	5.74E-01	5.74E-01	7.60E-01	Regression equation from Eco SSL	
CHROMIUM	4.59E+01	1.92E+01	1.92E+01	1.92E+01	2.86E+01	3.06E-01	3.06E-01
COBALT	2.18E+01	1.34E+01	1.34E+01	1.34E+01	1.59E+01	1.22E-01	1.22E-01
COPPER	5.79E+02	8.97E+01	8.97E+01	8.97E+01	2.74E+02	5.15E-01	5.15E-01
IRON	3.38E+04	2.70E+04	2.70E+04	2.70E+04	2.93E+04	7.80E-02	3.60E-02
LEAD	9.99E+02	2.00E+02	2.00E+02	2.00E+02	5.31E+02	Regression equation from Eco SSL	
MANGANESE	6.60E+02	4.40E+02	4.40E+02	4.40E+02	4.99E+02	Regression equation from Eco SSL	
MERCURY	1.70E-01	5.34E-02	6.26E-02	5.34E-02	8.00E-02	Regression equation from Sample et al. 1998	
SELENIUM	6.30E-01	3.68E-01	4.20E-01	3.68E-01	4.50E-01	Regression equation from Eco SSL	
SILVER	2.10E-01	9.71E-02	1.55E-01	9.71E-02	1.00E-01	2.05E+00	2.05E+00
VANADIUM	3.30E+01	1.79E+01	1.79E+01	1.79E+01	2.35E+01	4.20E-02	4.20E-02
ZINC	2.17E+02	1.21E+02	1.21E+02	1.21E+02	1.48E+02	Regression equation from Eco SSL	
Semivolatile Organics							
1,1-BIPHENYL	3.00E-01	4.82E-01	3.00E-01	3.00E-01	4.82E-01	1.00E+00	1.00E+00
2-METHYLNAPHTHALENE	1.40E+00	5.22E-01	9.90E-01	5.22E-01	5.22E-01	3.04E+00	3.04E+00
ACENAPHTHENE	1.50E+01	1.30E+00	2.48E+00	1.30E+00	2.40E+00	1.47E+00	1.47E+00
ACENAPHTHYLENE	1.20E+00	5.02E-01	1.20E+00	5.02E-01	5.02E-01	2.29E+01	2.29E+01
ANTHRACENE	1.60E+01	1.51E+00	2.67E+00	1.51E+00	2.57E+00	2.42E+00	2.42E+00
BENZO(A)ANTHRACENE	9.10E+01	7.25E+00	1.07E+01	7.25E+00	1.54E+01	1.59E+00	1.59E+00
BENZO(A)PYRENE	1.20E+02	8.74E+00	1.43E+01	8.74E+00	2.12E+01	1.33E+00	1.33E+00
BENZO(B)FLUORANTHENE	1.30E+02	1.02E+01	1.63E+01	1.02E+01	2.04E+01	2.60E+00	2.60E+00
BENZO(G,H,I)PERYLENE	7.80E+01	6.11E+00	1.03E+01	6.11E+00	2.77E+01	2.94E+00	2.94E+00
BENZO(K)FLUORANTHENE	4.70E+01	4.02E+00	7.06E+00	4.02E+00	7.82E+00	2.60E+00	2.60E+00
CARBAZOLE	1.10E+01	1.56E+00	2.23E+00	1.56E+00	1.87E+00	1.00E+00	1.00E+00
CHRYSENE	1.00E+02	7.92E+00	1.21E+01	7.92E+00	1.57E+01	2.29E+00	2.29E+00
DIBENZO(A,H)ANTHRACENE	2.20E+01	1.74E+00	6.22E+00	1.74E+00	4.77E+00	2.31E+00	2.31E+00
DIBENZOFURAN	3.50E+00	5.86E-01	7.57E-01	5.86E-01	6.51E-01	1.00E+00	1.00E+00
FLUORANTHENE	1.10E+02	9.55E+00	1.43E+01	9.55E+00	1.92E+01	3.04E+00	3.04E+00
FLUORENE	6.10E+00	7.65E-01	1.67E+00	7.65E-01	1.07E+00	9.57E+00	9.57E+00
INDENO(1,2,3-CD)PYRENE	8.10E+01	6.38E+00	1.39E+01	6.38E+00	1.30E+01	2.86E+00	2.86E+00
N-NITROSODIPHENYLAMINE	9.20E-01	6.15E-01	5.70E-01	6.15E-01	5.60E-01	1.00E+00	1.00E+00
NAPHTHALENE	3.70E+00	5.92E-01	1.01E+00	5.92E-01	9.32E-01	4.40E+00	4.40E+00
PHENANTHRENE	6.30E+01	4.66E+00	5.77E+00	4.66E+00	1.66E+01	1.72E+00	1.72E+00
PYRENE	1.20E+02	1.02E+01	1.22E+01	1.02E+01	3.37E+01	1.75E+00	1.75E+00
Volatile Organics							
ACETONE	7.60E-02	2.68E-02	2.20E-02	2.68E-02	2.21E-02	1.00E+00	1.00E+00
TETRACHLOROETHENE	1.10E-03	2.85E-03	1.10E-03	1.10E-03	1.10E-03	1.00E+00	1.00E+00
Pesticides/PCBs							
4,4'-DDE	3.80E-02	9.16E-03	1.35E-02	9.16E-03	1.62E-02	Regression equation from Eco SSL	
4,4'-DDT	6.20E-02	1.72E-01	1.57E-02	1.57E-02	2.07E-02	Regression equation from Eco SSL	
ALPHA-BHC	9.30E-04	2.67E-04	6.25E-04	2.67E-04	7.00E-04	5.00E+00	5.00E+00

APPENDIX F TABLE 7

CHEMICAL CONCENTRATIONS IN SURFACE SOIL AND TISSUE
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Surface Soil Concentrations (mg/kg)					Earthworm Bioaccumulation Factors	
	Maximum Detection	Average All	Average of Positive Detections	Average (1)	95% UCL	Conservative	Average
ALPHA-CHLORDANE	3.80E-03	6.06E-04	3.05E-03	6.06E-04	6.10E-04	5.00E+00	5.00E+00
AROCLOR-1260	4.50E+01	5.65E+00	6.09E+00	5.65E+00	4.08E+01	1.59E+01	6.67E+00
DIELDRIN	1.90E-01	5.88E-02	3.33E-02	5.88E-02	1.70E-01	1.42E+01	1.42E+01
ENDOSULFAN I	1.20E-03	2.69E-04	1.20E-03	2.69E-04	2.70E-04	1.00E+00	1.00E+00
ENDOSULFAN II	4.80E-01	5.10E-02	1.18E-01	5.10E-02	1.17E-01	1.00E+00	1.00E+00
ENDOSULFAN SULFATE	5.90E-03	6.83E-02	3.05E-03	3.05E-03	3.05E-03	1.00E+00	1.00E+00
ENDRIN	2.00E-01	3.06E-02	7.08E-02	3.06E-02	6.25E-02	3.60E+00	3.60E+00
ENDRIN ALDEHYDE	6.30E-04	9.16E-04	6.30E-04	6.30E-04	6.30E-04	3.60E+00	3.60E+00
ENDRIN KETONE	8.70E-04	1.20E-03	8.70E-04	8.70E-04	8.70E-04	3.60E+00	3.60E+00
GAMMA-BHC (LINDANE)	5.30E-03	8.08E-04	1.92E-03	8.08E-04	1.80E-03	5.00E+00	5.00E+00
GAMMA-CHLORDANE	1.30E-02	1.91E-03	6.20E-03	1.91E-03	4.60E-03	5.00E+00	5.00E+00
HEPTACHLOR EPOXIDE	1.40E-03	5.80E-04	1.25E-03	5.80E-04	5.80E-04	3.00E+00	3.00E+00
TOTAL DDD/DDE/DDT	9.56E-02	6.16E-02	2.38E-02	6.16E-02	5.29E-02	1.12E+01	1.12E+01
Petroleum Hydrocarbons							
DIESEL RANGE ORGANICS	5.60E+03	5.92E+02	5.92E+02	5.92E+02	3.08E+03	1.00E+00	1.00E+00

1 - If the average of all value is the greater than the maximum detection, the average of the positive detections was used as the average value.
percent TOC assumed = 1.0
2 - A 95% Ucl was not able to be calculated because there were less than 10 samples.

APPENDIX F TABLE 7

CHEMICAL CONCENTRATIONS IN SURFACE SOIL AND TISSUE
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Earthworm Concentrations (mg/kg)			Plant Bioaccumulation Factors		Plant Concentrations (mg/kg)		
	Maximum Detection	Average	95% UCL	Conservative	Average	Maximum Detection	Average	95% UCL
Explosives								
2,4-DINITROTOLUENE	1.60E-01	1.41E-01	1.50E-01	2.60E+00	2.60E+00	4.16E-01	3.66E-01	3.90E-01
NITROGLYCERIN	1.60E+01	7.28E+00	1.05E+01	1.00E+00	1.00E+00	1.60E+01	7.28E+00	1.05E+01
Inorganics								
ALUMINUM	1.76E+03	4.70E+02	5.25E+02	5.00E-03	2.87E-03	7.45E+01	3.14E+01	3.50E+01
ANTIMONY	8.50E+00	1.48E+00	2.40E+00	Regression equation from Eco SSL		2.94E-01	5.71E-02	8.97E-02
ARSENIC	5.58E+00	1.92E+00	3.38E+00	3.75E-02	3.75E-02	3.21E+00	7.09E-01	1.58E+00
BARIUM	4.72E+00	2.33E+00	2.76E+00	1.56E-01	1.56E-01	8.10E+00	3.99E+00	4.73E+00
BERYLLIUM	1.76E-02	1.45E-02	1.58E-02	Regression equation from Eco SSL		2.93E-01	2.55E-01	2.71E-01
CADMIUM	1.08E+01	5.32E+00	6.66E+00	Regression equation from Eco SSL		7.47E-01	4.59E-01	5.35E-01
CHROMIUM	1.40E+01	5.87E+00	8.75E+00	4.10E-02	4.10E-02	1.88E+00	7.86E-01	1.17E+00
COBALT	2.66E+00	1.64E+00	1.94E+00	7.50E-03	7.50E-03	1.64E-01	1.01E-01	1.19E-01
COPPER	2.98E+02	4.62E+01	1.41E+02	Regression equation from Eco SSL		2.39E+01	1.15E+01	1.78E+01
IRON	2.64E+03	9.72E+02	1.05E+03	1.00E-02	4.25E-03	3.38E+02	1.15E+02	1.25E+02
LEAD	2.12E+02	5.78E+01	1.27E+02	Regression equation from Eco SSL		1.28E+01	5.17E+00	8.95E+00
MANGANESE	3.73E+01	2.83E+01	3.08E+01	7.90E-02	7.90E-02	5.21E+01	3.47E+01	3.94E+01
MERCURY	5.95E-01	4.03E-01	4.62E-01	5.00E+00	6.52E-01	8.50E-01	3.48E-02	5.22E-02
SELENIUM	6.61E-01	4.46E-01	5.17E-01	Regression equation from Eco SSL		3.05E-01	1.68E-01	2.10E-01
SILVER	4.29E-01	1.99E-01	2.05E-01	1.40E-02	1.40E-02	2.94E-03	1.36E-03	1.40E-03
VANADIUM	1.39E+00	7.50E-01	9.87E-01	4.85E-03	4.85E-03	1.60E-01	8.66E-02	1.14E-01
ZINC	4.99E+02	4.13E+02	4.41E+02	Regression equation from Eco SSL		9.52E+01	6.90E+01	7.70E+01
Semivolatile Organics								
1,1-BIPHENYL	3.00E-01	3.00E-01	4.82E-01	1.60E-01	1.60E-01	4.80E-02	4.80E-02	7.71E-02
2-METHYLNAPHTHALENE	4.26E+00	1.59E+00	1.59E+00	Regression equation from Eco SSL		3.11E-01	1.99E-01	1.99E-01
ACENAPHTHENE	2.21E+01	1.91E+00	3.53E+00	Regression equation from Eco SSL		3.79E-04	3.07E-03	1.82E-03
ACENAPHTHYLENE	2.75E+01	1.15E+01	1.15E+01	Regression equation from Eco SSL		3.68E-01	1.85E-01	1.85E-01
ANTHRACENE	3.87E+01	3.66E+00	6.22E+00	Regression equation from Eco SSL		3.22E+00	5.13E-01	7.76E-01
BENZO(A)ANTHRACENE	1.45E+02	1.15E+01	2.45E+01	Regression equation from Eco SSL		9.74E-01	2.17E-01	3.39E-01
BENZO(A)PYRENE	1.60E+02	1.16E+01	2.82E+01	Regression equation from Eco SSL		1.35E+01	1.05E+00	2.50E+00
BENZO(B)FLUORANTHENE	3.38E+02	2.66E+01	5.30E+01	3.10E-01	3.10E-01	4.03E+01	3.17E+00	6.32E+00
BENZO(G,H,I)PERYLENE	2.29E+02	1.80E+01	8.14E+01	Regression equation from Eco SSL		6.82E+01	3.35E+00	2.00E+01
BENZO(K)FLUORANTHENE	1.22E+02	1.04E+01	2.03E+01	Regression equation from Eco SSL		3.16E+00	3.82E-01	6.77E-01
CARBAZOLE	1.10E+01	1.56E+00	1.87E+00	2.40E-01	2.40E-01	2.64E+00	3.75E-01	4.49E-01
CHRYSENE	2.29E+02	1.81E+01	3.60E+01	Regression equation from Eco SSL		1.03E+00	2.28E-01	3.43E-01
DIBENZO(A,H)ANTHRACENE	5.08E+01	4.02E+00	1.10E+01	1.30E-01	1.30E-01	2.86E+00	2.26E-01	6.20E-01
DIBENZOFURAN	3.50E+00	5.86E-01	6.51E-01	1.50E-01	1.50E-01	5.25E-01	8.79E-02	9.77E-02
FLUORANTHENE	3.34E+02	2.90E+01	5.84E+01	5.00E-01	5.00E-01	5.50E+01	4.78E+00	9.60E+00
FLUORENE	5.84E+01	7.32E+00	1.02E+01	Regression equation from Eco SSL		8.18E-04	4.83E-03	3.63E-03
INDENO(1,2,3-CD)PYRENE	2.32E+02	1.82E+01	3.72E+01	1.10E-01	1.10E-01	8.91E+00	7.01E-01	1.43E+00
N-NITROSODIPHENYLAMINE	9.20E-01	6.15E-01	5.60E-01	1.00E+00	1.00E+00	9.20E-01	6.15E-01	5.60E-01
NAPHTHALENE	1.63E+01	2.61E+00	4.10E+00	1.22E+01	1.22E+01	4.51E+01	7.23E+00	1.14E+01
PHENANTHRENE	1.08E+02	8.01E+00	2.86E+01	Regression equation from Eco SSL		1.11E+01	2.20E+00	4.84E+00
PYRENE	2.10E+02	1.79E+01	5.90E+01	7.20E-01	7.20E-01	8.64E+01	7.36E+00	2.43E+01
Volatile Organics								
ACETONE	7.60E-02	2.68E-02	2.21E-02	5.20E+00	5.20E+00	3.95E-01	1.39E-01	1.15E-01
TETRACHLOROETHENE	1.10E-03	1.10E-03	1.10E-03	1.20E+00	1.20E+00	1.32E-03	1.32E-03	1.32E-03
Pesticides/PCBs								
4,4'-DDE	6.69E-01	1.91E-01	3.16E-01	Regression equation from Eco SSL		6.93E-03	2.37E-03	3.65E-03
4,4'-DDT	7.47E-01	2.26E-01	2.88E-01	Regression equation from Eco SSL		1.00E-02	3.56E-03	4.39E-03
ALPHA-BHC	4.65E-03	1.33E-03	3.50E-03	2.10E-01	2.10E-01	1.95E-04	5.60E-05	1.47E-04

APPENDIX F TABLE 7

CHEMICAL CONCENTRATIONS IN SURFACE SOIL AND TISSUE
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Earthworm Concentrations (mg/kg)			Plant Bioaccumulation Factors		Plant Concentrations (mg/kg)		
	Maximum Detection	Average	95% UCL	Conservative	Average	Maximum Detection	Average	95% UCL
ALPHA-CHLORDANE	1.90E-02	3.03E-03	3.05E-03	2.50E-02	2.50E-02	9.50E-05	1.51E-05	1.53E-05
AROCLOR-1260	7.16E+02	3.77E+01	2.72E+02	2.90E-03	2.90E-03	1.31E-01	1.64E-02	1.18E-01
DIELDRIN	2.70E+00	8.35E-01	2.41E+00	8.20E-02	8.20E-02	1.56E-02	4.82E-03	1.39E-02
ENDOSULFAN I	1.20E-03	2.69E-04	2.70E-04	3.30E-01	3.30E-01	3.96E-04	8.87E-05	8.91E-05
ENDOSULFAN II	4.80E-01	5.10E-02	1.17E-01	3.30E-01	3.30E-01	1.58E-01	1.68E-02	3.86E-02
ENDOSULFAN SULFATE	5.90E-03	3.05E-03	3.05E-03	3.30E-01	3.30E-01	1.95E-03	1.01E-03	1.01E-03
ENDRIN	7.20E-01	1.10E-01	2.25E-01	8.20E-02	8.20E-02	1.64E-02	2.51E-03	5.13E-03
ENDRIN ALDEHYDE	2.27E-03	2.27E-03	2.27E-03	8.20E-02	8.20E-02	5.17E-05	5.17E-05	5.17E-05
ENDRIN KETONE	3.13E-03	3.13E-03	3.13E-03	8.20E-02	8.20E-02	7.13E-05	7.13E-05	7.13E-05
GAMMA-BHC (LINDANE)	2.65E-02	4.04E-03	9.00E-03	2.70E-01	2.70E-01	1.43E-03	2.18E-04	4.86E-04
GAMMA-CHLORDANE	6.50E-02	9.57E-03	2.30E-02	2.50E-02	2.50E-02	3.25E-04	4.79E-05	1.15E-04
HEPTACHLOR EPOXIDE	4.20E-03	1.74E-03	1.74E-03	2.80E-02	2.80E-02	3.92E-05	1.62E-05	1.62E-05
TOTAL DDD/DDE/DDT	1.07E+00	6.90E-01	5.92E-01	Regression equation from Eco SSL		1.39E-02	9.97E-03	8.88E-03
Petroleum Hydrocarbons								
DIESEL RANGE ORGANICS	5.60E+03	5.92E+02	3.08E+03	1.00E+00	1.00E+00	5.60E+03	5.92E+02	3.08E+03

1 - If the average of all value is the greater than th
percent TOC assumed = 1.0
2 - A 95% Ucl was not able to be calculated becau

APPENDIX F TABLE 8
BOBWHITE QUAIL - CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	Max Soil Concentration (mg/kg)	Vegetation Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Vegetation	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Explosives									
2,4-DINITROTOLUENE	1.60E-01	4.16E-01	2.35E-03	4.40E-02	4.63E-02	1.00E+00	5.00E+00	4.63E-02	9.27E-03
NITROGLYCERIN	1.60E+01	1.60E+01	2.35E-01	1.69E+00	1.93E+00	NV	NV	#VALUE!	#VALUE!
Inorganics									
ALUMINUM	1.49E+04	7.45E+01	2.19E+02	7.88E+00	2.27E+02	1.10E+02	1.10E+03	2.07E+00	2.07E-01
ANTIMONY	8.50E+00	2.94E-01	1.25E-01	3.10E-02	1.56E-01	NV	NV	#VALUE!	#VALUE!
ARSENIC	8.55E+01	3.21E+00	1.26E+00	3.39E-01	1.60E+00	2.24E+00	4.51E+00	7.12E-01	3.54E-01
BARIUM	5.19E+01	8.10E+00	7.63E-01	8.56E-01	1.62E+00	NV	NV	#VALUE!	#VALUE!
BERYLLIUM	3.90E-01	2.93E-01	5.73E-03	3.10E-02	3.67E-02	NV	NV	#VALUE!	#VALUE!
CADMIUM	1.40E+00	7.47E-01	2.06E-02	7.90E-02	9.96E-02	1.47E+00	6.35E+00	6.79E-02	1.57E-02
CHROMIUM	4.59E+01	1.88E+00	6.74E-01	1.99E-01	8.73E-01	2.66E+00	1.56E+01	3.29E-01	5.59E-02
COBALT	2.18E+01	1.64E-01	3.20E-01	1.73E-02	3.38E-01	7.61E+00	1.83E+01	4.44E-02	1.84E-02
COPPER	5.79E+02	2.39E+01	8.51E+00	2.53E+00	1.10E+01	4.05E+00	3.49E+01	2.72E+00	3.16E-01
IRON	3.38E+04	3.38E+02	4.97E+02	3.57E+01	5.32E+02	1.00E+02	1.00E+03	5.32E+00	5.32E-01
LEAD	9.99E+02	1.28E+01	1.47E+01	1.35E+00	1.60E+01	1.63E+00	4.46E+01	9.83E+00	3.59E-01
MANGANESE	6.60E+02	5.21E+01	9.70E+00	5.51E+00	1.52E+01	1.79E+02	3.77E+02	8.50E-02	4.03E-02
MERCURY	1.70E-01	8.50E-01	2.50E-03	8.99E-02	9.24E-02	6.40E-03	6.40E-02	1.44E+01	1.44E+00
SELENIUM	6.30E-01	3.05E-01	9.26E-03	3.23E-02	4.15E-02	2.90E-01	8.20E-01	1.43E-01	5.06E-02
SILVER	2.10E-01	2.94E-03	3.09E-03	3.11E-04	3.40E-03	2.02E+00	6.05E+01	1.68E-03	5.62E-05
VANADIUM	3.30E+01	1.60E-01	4.85E-01	1.69E-02	5.02E-01	3.44E-01	1.70E+00	1.46E+00	2.95E-01
ZINC	2.17E+02	9.52E+01	3.19E+00	1.01E+01	1.32E+01	6.61E+01	1.71E+02	2.00E-01	7.75E-02
Semivolatile Organics									
1,1-BIPHENYL	3.00E-01	4.80E-02	4.41E-03	5.07E-03	9.48E-03	NV	NV	#VALUE!	#VALUE!
2-METHYLNAPHTHALENE	1.40E+00	3.11E-01	2.06E-02	3.29E-02	5.35E-02	2.00E+00	2.00E+01	2.67E-02	2.67E-03
ACENAPHTHENE	1.50E+01	3.79E-04	2.20E-01	4.00E-05	2.20E-01	2.00E+00	2.00E+01	1.10E-01	1.10E-02
ACENAPHTHYLENE	1.20E+00	3.68E-01	1.76E-02	3.89E-02	5.65E-02	2.00E+00	2.00E+01	2.83E-02	2.83E-03
ANTHRACENE	1.60E+01	3.22E+00	2.35E-01	3.40E-01	5.76E-01	2.00E+00	2.00E+01	2.88E-01	2.88E-02
BENZO(A)ANTHRACENE	9.10E+01	9.74E-01	1.34E+00	1.03E-01	1.44E+00	2.00E+00	2.00E+01	7.20E-01	7.20E-02
BENZO(A)PYRENE	1.20E+02	1.35E+01	1.76E+00	1.43E+00	3.20E+00	2.00E+00	2.00E+01	1.60E+00	1.60E-01
BENZO(B)FLUORANTHENE	1.30E+02	4.03E+01	1.91E+00	4.26E+00	6.17E+00	2.00E+00	2.00E+01	3.09E+00	3.09E-01
BENZO(G,H,I)PERYLENE	7.80E+01	6.82E+01	1.15E+00	7.21E+00	8.35E+00	2.00E+00	2.00E+01	4.18E+00	4.18E-01
BENZO(K)FLUORANTHENE	4.70E+01	3.16E+00	6.91E-01	3.34E-01	1.02E+00	2.00E+00	2.00E+01	5.12E-01	5.12E-02
CARBAZOLE	1.10E+01	2.64E+00	1.62E-01	2.79E-01	4.41E-01	2.00E+00	2.00E+01	2.20E-01	2.20E-02
CHRYSENE	1.00E+02	1.03E+00	1.47E+00	1.09E-01	1.58E+00	2.00E+00	2.00E+01	7.89E-01	7.89E-02
DIBENZO(A,H)ANTHRACENE	2.20E+01	2.86E+00	3.23E-01	3.02E-01	6.26E-01	2.00E+00	2.00E+01	3.13E-01	3.13E-02
DIBENZOFURAN	3.50E+00	5.25E-01	5.14E-02	5.55E-02	1.07E-01	2.00E+00	2.00E+01	5.35E-02	5.35E-03
FLUORANTHENE	1.10E+02	5.50E+01	1.62E+00	5.81E+00	7.43E+00	2.00E+00	2.00E+01	3.72E+00	3.72E-01
FLUORENE	6.10E+00	8.18E-04	8.96E-02	8.64E-05	8.97E-02	2.00E+00	2.00E+01	4.49E-02	4.49E-03
INDENO(1,2,3-CD)PYRENE	8.10E+01	8.91E+00	1.19E+00	9.42E-01	2.13E+00	2.00E+00	2.00E+01	1.07E+00	1.07E-01
N-NITROSODIPHENYLAMINE	9.20E-01	9.20E-01	1.35E-02	9.73E-02	1.11E-01	NV	NV	#VALUE!	#VALUE!
NAPHTHALENE	3.70E+00	4.51E+01	5.44E-02	4.77E+00	4.83E+00	2.00E+00	2.00E+01	2.41E+00	2.41E-01
PHENANTHRENE	6.30E+01	1.11E+01	9.26E-01	1.17E+00	2.10E+00	2.00E+00	2.00E+01	1.05E+00	1.05E-01
PYRENE	1.20E+02	8.64E+01	1.76E+00	9.13E+00	1.09E+01	2.00E+00	2.00E+01	5.45E+00	5.45E-01
Volatile Organics									
ACETONE	7.60E-02	3.95E-01	1.12E-03	4.18E-02	4.29E-02	NV	NV	#VALUE!	#VALUE!
TETRACHLOROETHENE	1.10E-03	1.32E-03	1.62E-05	1.40E-04	1.56E-04	NV	NV	#VALUE!	#VALUE!

APPENDIX F TABLE 8
BOBWHITE QUAIL - CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	Max Soil Concentration (mg/kg)	Vegetation Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Vegetation	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Pesticides/PCBs									
4,4'-DDE	3.80E-02	6.93E-03	5.58E-04	7.32E-04	1.29E-03	2.27E-01	2.70E+00	5.69E-03	4.78E-04
4,4'-DDT	6.20E-02	1.00E-02	9.11E-04	1.06E-03	1.97E-03	2.27E-01	2.70E+00	8.68E-03	7.29E-04
ALPHA-BHC	9.30E-04	1.95E-04	1.37E-05	2.06E-05	3.43E-05	5.60E-01	2.25E+00	6.13E-05	1.52E-05
ALPHA-CHLORDANE	3.80E-03	9.50E-05	5.58E-05	1.00E-05	6.59E-05	2.14E+00	1.07E+01	3.08E-05	6.16E-06
AROCLOR-1260	4.50E+01	1.31E-01	6.61E-01	1.38E-02	6.75E-01	1.80E-01	1.80E+00	3.75E+00	3.75E-01
DIELDRIN	1.90E-01	1.56E-02	2.79E-03	1.65E-03	4.44E-03	7.09E-02	8.00E-01	6.26E-02	5.55E-03
ENDOSULFAN I	1.20E-03	3.96E-04	1.76E-05	4.19E-05	5.95E-05	1.00E+01	1.00E+02	5.95E-06	5.95E-07
ENDOSULFAN II	4.80E-01	1.58E-01	7.05E-03	1.67E-02	2.38E-02	1.00E+01	1.00E+02	2.38E-03	2.38E-04
ENDOSULFAN SULFATE	5.90E-03	1.95E-03	8.67E-05	2.06E-04	2.93E-04	1.00E+01	1.00E+02	2.93E-05	2.93E-06
ENDRIN	2.00E-01	1.64E-02	2.94E-03	1.73E-03	4.67E-03	1.04E-02	1.04E-01	4.51E-01	4.51E-02
ENDRIN ALDEHYDE	6.30E-04	5.17E-05	9.26E-06	5.46E-06	1.47E-05	1.04E-02	1.04E-01	1.42E-03	1.42E-04
ENDRIN KETONE	8.70E-04	7.13E-05	1.28E-05	7.54E-06	2.03E-05	1.04E-02	1.04E-01	1.96E-03	1.96E-04
GAMMA-BHC (LINDANE)	5.30E-03	1.43E-03	7.79E-05	1.51E-04	2.29E-04	2.00E+00	2.00E+01	1.15E-04	1.15E-05
GAMMA-CHLORDANE	1.30E-02	3.25E-04	1.91E-04	3.44E-05	2.25E-04	2.14E+00	1.07E+01	1.05E-04	2.11E-05
HEPTACHLOR EPOXIDE	1.40E-03	3.92E-05	2.06E-05	4.14E-06	2.47E-05	NV	NV	#VALUE!	#VALUE!
TOTAL DDD/DDE/DDT	9.56E-02	1.39E-02	1.40E-03	1.47E-03	2.87E-03	2.27E-01	2.70E+00	1.26E-02	1.06E-03
Petroleum Hydrocarbons									
DIESEL RANGE ORGANICS	5.60E+03	5.60E+03	8.23E+01	5.92E+02	6.74E+02	NV	NV	#VALUE!	#VALUE!

Cells are shaded if the EEQ is greater than 1.0.

Body Weight = (BW)	1.540E-01	kg
Food Ingestion Rate = (If)	1.628E-02	kg/day
Soil Ingestion Rate = (Is)	2.263E-03	kg/day
Home Range = (HR)	Assume 100% on site	
Contaminated Area = (CA)	Assume equal to home range	

H=HR/CA (Assume = to 1 for maximum exposure)

Dose (surface soil) = (Cs * Is)(H)/BW
Dose (vegetation) = (Cv * If)(H)/BW
Total Dose = Dose (surface soil) + Dose (vegetation)

Definitions:
HQ - Hazard Quotient
NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
Cs = Contaminant concentration in soil
Cv = Contaminant conc. in vegetation (=soil conc. * Biotransfer Factor)
NV = No value available
#VALUE! = Value not able to be calculated

APPENDIX F TABLE 9
BOBWHITE QUAIL - LESS CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	95% UCL Soil Concentration (mg/kg)	Vegetation Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Vegetation	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Explosives									
2,4-DINITROTOLUENE	1.50E-01	3.90E-01	7.11E-04	3.03E-02	3.10E-02	1.00E+00	5.00E+00	3.10E-02	6.20E-03
NITROGLYCERIN	1.05E+01	1.05E+01	4.98E-02	8.16E-01	8.66E-01	NV	NV	#VALUE!	#VALUE!
Inorganics									
ANTIMONY	2.40E+00	8.97E-02	1.14E-02	6.97E-03	1.84E-02	NV	NV	#VALUE!	#VALUE!
ARSENIC	4.20E+01	1.58E+00	1.99E-01	1.22E-01	3.22E-01	2.24E+00	4.51E+00	1.44E-01	7.13E-02
BARIUM	3.03E+01	4.73E+00	1.44E-01	3.67E-01	5.11E-01	NV	NV	#VALUE!	#VALUE!
CADMIUM	7.60E-01	5.35E-01	3.60E-03	4.16E-02	4.52E-02	1.47E+00	6.35E+00	3.08E-02	7.12E-03
CHROMIUM	2.86E+01	1.17E+00	1.36E-01	9.11E-02	2.27E-01	2.66E+00	1.56E+01	8.53E-02	1.45E-02
COBALT	1.59E+01	1.19E-01	7.54E-02	9.27E-03	8.47E-02	7.61E+00	1.83E+01	1.11E-02	4.62E-03
COPPER	2.74E+02	1.78E+01	1.30E+00	1.38E+00	2.68E+00	4.05E+00	3.49E+01	6.63E-01	7.70E-02
IRON	2.93E+04	1.25E+02	1.39E+02	9.68E+00	1.49E+02	1.00E+02	1.00E+03	1.49E+00	1.49E-01
LEAD	5.31E+02	8.95E+00	2.52E+00	6.96E-01	3.21E+00	1.63E+00	4.46E+01	1.97E+00	7.20E-02
MANGANESE	4.99E+02	3.94E+01	2.37E+00	3.06E+00	5.43E+00	1.79E+02	3.77E+02	3.03E-02	1.44E-02
MERCURY	8.00E-02	5.22E-02	3.79E-04	4.05E-03	4.43E-03	6.40E-03	6.40E-02	6.93E-01	6.93E-02
SELENIUM	4.50E-01	2.10E-01	2.13E-03	1.64E-02	1.85E-02	2.90E-01	8.20E-01	6.38E-02	2.26E-02
SILVER	1.00E-01	1.40E-03	4.74E-04	1.09E-04	5.83E-04	2.02E+00	6.05E+01	2.89E-04	9.64E-06
VANADIUM	2.35E+01	1.14E-01	1.11E-01	8.86E-03	1.20E-01	3.44E-01	1.70E+00	3.50E-01	7.08E-02
ZINC	1.48E+02	7.70E+01	7.02E-01	5.98E+00	6.68E+00	6.61E+01	1.71E+02	1.01E-01	3.91E-02
Semivolatile Organics									
1,1-BIPHENYL	4.82E-01	7.71E-02	2.29E-03	6.00E-03	8.28E-03	NV	NV	#VALUE!	#VALUE!
2-METHYLNAPHTHALENE	5.22E-01	1.99E-01	2.47E-03	1.54E-02	1.79E-02	2.00E+00	2.00E+01	8.96E-03	8.96E-04
ACENAPHTHENE	2.40E+00	1.82E-03	1.14E-02	1.41E-04	1.15E-02	2.00E+00	2.00E+01	5.76E-03	5.76E-04
ACENAPHTHYLENE	5.02E-01	1.85E-01	2.38E-03	1.43E-02	1.67E-02	2.00E+00	2.00E+01	8.36E-03	8.36E-04
ANTHRACENE	2.57E+00	7.76E-01	1.22E-02	6.03E-02	7.25E-02	2.00E+00	2.00E+01	3.62E-02	3.62E-03
BENZO(A)ANTHRACENE	1.54E+01	3.39E-01	7.30E-02	2.63E-02	9.94E-02	2.00E+00	2.00E+01	4.97E-02	4.97E-03
BENZO(A)PYRENE	2.12E+01	2.50E+00	1.01E-01	1.94E-01	2.95E-01	2.00E+00	2.00E+01	1.47E-01	1.47E-02
BENZO(B)FLUORANTHENE	2.04E+01	6.32E+00	9.67E-02	4.92E-01	5.88E-01	2.00E+00	2.00E+01	2.94E-01	2.94E-02
BENZO(G,H,I)PERYLENE	2.77E+01	2.00E+01	1.31E-01	1.56E+00	1.69E+00	2.00E+00	2.00E+01	8.44E-01	8.44E-02
BENZO(K)FLUORANTHENE	7.82E+00	6.77E-01	3.71E-02	5.26E-02	8.97E-02	2.00E+00	2.00E+01	4.49E-02	4.49E-03
CARBAZOLE	1.87E+00	4.49E-01	8.87E-03	3.49E-02	4.38E-02	2.00E+00	2.00E+01	2.19E-02	2.19E-03
CHRYSENE	1.57E+01	3.43E-01	7.45E-02	2.66E-02	1.01E-01	2.00E+00	2.00E+01	5.05E-02	5.05E-03
DIBENZO(A,H)ANTHRACENE	4.77E+00	6.20E-01	2.26E-02	4.82E-02	7.08E-02	2.00E+00	2.00E+01	3.54E-02	3.54E-03
DIBENZOFURAN	6.51E-01	9.77E-02	3.09E-03	7.59E-03	1.07E-02	2.00E+00	2.00E+01	5.34E-03	5.34E-04
FLUORANTHENE	1.92E+01	9.60E+00	9.11E-02	7.46E-01	8.37E-01	2.00E+00	2.00E+01	4.19E-01	4.19E-02
FLUORENE	1.07E+00	3.63E-03	5.07E-03	2.82E-04	5.36E-03	2.00E+00	2.00E+01	2.68E-03	2.68E-04
INDENO(1,2,3-CD)PYRENE	1.30E+01	1.43E+00	6.17E-02	1.11E-01	1.73E-01	2.00E+00	2.00E+01	8.64E-02	8.64E-03
N-NITROSODIPHENYLAMINE	5.60E-01	5.60E-01	2.66E-03	4.35E-02	4.62E-02	NV	NV	#VALUE!	#VALUE!
NAPHTHALENE	9.32E-01	1.14E+01	4.42E-03	8.84E-01	8.88E-01	2.00E+00	2.00E+01	4.44E-01	4.44E-02
PHENANTHRENE	1.66E+01	4.84E+00	7.87E-02	3.76E-01	4.55E-01	2.00E+00	2.00E+01	2.27E-01	2.27E-02
PYRENE	3.37E+01	2.43E+01	1.60E-01	1.89E+00	2.05E+00	2.00E+00	2.00E+01	1.02E+00	1.02E-01
Volatile Organics									
ACETONE	2.21E-02	1.15E-01	1.05E-04	8.93E-03	9.04E-03	NV	NV	#VALUE!	#VALUE!
TETRACHLOROETHENE	1.10E-03	1.32E-03	5.22E-06	1.03E-04	1.08E-04	NV	NV	#VALUE!	#VALUE!
Pesticides/PCBs									
4,4'-DDE	1.62E-02	3.65E-03	7.68E-05	2.83E-04	3.60E-04	2.27E-01	2.70E+00	1.59E-03	1.33E-04

APPENDIX F TABLE 9
BOBWHITE QUAIL - LESS CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	95% UCL Soil Concentration (mg/kg)	Vegetation Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Vegetation	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
4,4'-DDT	2.07E-02	4.39E-03	9.82E-05	3.41E-04	4.39E-04	2.27E-01	2.70E+00	1.93E-03	1.63E-04
ALPHA-BHC	7.00E-04	1.47E-04	3.32E-06	1.14E-05	1.47E-05	5.60E-01	2.25E+00	2.63E-05	6.55E-06
ALPHA-CHLORDANE	6.10E-04	1.53E-05	2.89E-06	1.19E-06	4.08E-06	2.14E+00	1.07E+01	1.91E-06	3.81E-07
AROCLOR-1260	4.08E+01	1.18E-01	1.93E-01	9.20E-03	2.03E-01	1.80E-01	1.80E+00	1.13E+00	1.13E-01
DIELDRIN	1.70E-01	1.39E-02	8.06E-04	1.08E-03	1.89E-03	7.09E-02	8.00E-01	2.67E-02	2.36E-03
ENDOSULFAN I	2.70E-04	8.91E-05	1.28E-06	6.93E-06	8.21E-06	1.00E+01	1.00E+02	8.21E-07	8.21E-08
ENDOSULFAN II	1.17E-01	3.86E-02	5.55E-04	3.00E-03	3.56E-03	1.00E+01	1.00E+02	3.56E-04	3.56E-05
ENDOSULFAN SULFATE	3.05E-03	1.01E-03	1.45E-05	7.82E-05	9.27E-05	1.00E+01	1.00E+02	9.27E-06	9.27E-07
ENDRIN	6.25E-02	5.13E-03	2.96E-04	3.98E-04	6.95E-04	1.04E-02	1.04E-01	6.71E-02	6.71E-03
ENDRIN ALDEHYDE	6.30E-04	5.17E-05	2.99E-06	4.02E-06	7.00E-06	1.04E-02	1.04E-01	6.77E-04	6.77E-05
ENDRIN KETONE	8.70E-04	7.13E-05	4.13E-06	5.55E-06	9.67E-06	1.04E-02	1.04E-01	9.34E-04	9.34E-05
GAMMA-BHC (LINDANE)	1.80E-03	4.86E-04	8.54E-06	3.78E-05	4.63E-05	2.00E+00	2.00E+01	2.32E-05	2.32E-06
GAMMA-CHLORDANE	4.60E-03	1.15E-04	2.18E-05	8.94E-06	3.08E-05	2.14E+00	1.07E+01	1.44E-05	2.87E-06
HEPTACHLOR EPOXIDE	5.80E-04	1.62E-05	2.75E-06	1.26E-06	4.01E-06	NV	NV	#VALUE!	#VALUE!
TOTAL DDD/DDE/DDT	5.29E-02	8.88E-03	2.51E-04	6.91E-04	9.41E-04	2.27E-01	2.70E+00	4.15E-03	3.49E-04
Petroleum Hydrocarbons									
DIESEL RANGE ORGANICS	3.08E+03	3.08E+03	1.46E+01	2.39E+02	2.54E+02	NV	NV	#VALUE!	#VALUE!

Cells are shaded if the EEQ is greater than 1.0.

Body Weight = (BW)	1.751E-01	kg
Food Ingestion Rate = (If)	1.361E-02	kg/day
Soil Ingestion Rate = (Is)	8.304E-04	kg/day
Home Range = (HR)	1.880E+01	acres
Contaminated Area = (CA)	Assume equal to home range	
H=HR/CA (Assume = to 1 for maximum exposure)		

Definitions:
HQ - Hazard Quotient
NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
Cs = Contaminant concentration in soil
Cv = Contaminant conc. in vegetation (=soil conc. * Biotransfer Factor)

Dose (surface soil) = (Cs * Is)(H)/BW
Dose (vegetation) = (Cv * If)(H)/BW
Total Dose = Dose (surface soil) + Dose (vegetation)

APPENDIX F TABLE 10
MEADOW VOLE - CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	Max Soil Concentration (mg/kg)	Vegetation Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Vegetation	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Explosives									
2,4-DINITROTOLUENE	1.60E-01	4.16E-01	5.66E-04	4.60E-02	4.65E-02	6.70E-01	1.40E+00	6.94E-02	3.32E-02
NITROGLYCERIN	1.60E+01	1.60E+01	5.66E-02	1.77E+00	1.82E+00	3.00E+00	3.20E+01	6.08E-01	5.70E-02
Inorganics									
ALUMINUM	1.49E+04	7.45E+01	5.27E+01	8.23E+00	6.09E+01	1.93E+00	1.93E+01	3.16E+01	3.16E+00
ANTIMONY	8.50E+00	2.94E-01	3.00E-02	3.24E-02	6.25E-02	5.90E-02	2.76E+00	1.06E+00	2.26E-02
ARSENIC	8.55E+01	3.21E+00	3.02E-01	3.54E-01	6.57E-01	1.04E+00	4.55E+00	6.31E-01	1.44E-01
BARIUM	5.19E+01	8.10E+00	1.83E-01	8.94E-01	1.08E+00	5.18E+01	8.27E+01	2.08E-02	1.30E-02
BERYLLIUM	3.90E-01	2.93E-01	1.38E-03	3.24E-02	3.37E-02	5.32E-01	6.73E-01	6.34E-02	5.02E-02
CADMIUM	1.40E+00	7.47E-01	4.95E-03	8.26E-02	8.75E-02	7.70E-01	6.90E+00	1.14E-01	1.27E-02
CHROMIUM	4.59E+01	1.88E+00	1.62E-01	2.08E-01	3.70E-01	2.40E+00	5.82E+01	1.54E-01	6.36E-03
COBALT	2.18E+01	1.64E-01	7.71E-02	1.81E-02	9.51E-02	7.33E+00	1.89E+01	1.30E-02	5.03E-03
COPPER	5.79E+02	2.39E+01	2.05E+00	2.64E+00	4.69E+00	5.60E+00	8.27E+01	8.37E-01	5.67E-02
IRON	3.38E+04	3.38E+02	1.19E+02	3.73E+01	1.57E+02	5.00E+01	5.00E+02	3.14E+00	3.14E-01
LEAD	9.99E+02	1.28E+01	3.53E+00	1.41E+00	4.94E+00	4.70E+00	1.86E+02	1.05E+00	2.65E-02
MANGANESE	6.60E+02	5.21E+01	2.33E+00	5.76E+00	8.09E+00	5.15E+01	1.46E+02	1.57E-01	5.54E-02
MERCURY	1.70E-01	8.50E-01	6.01E-04	9.39E-02	9.45E-02	3.20E-02	1.60E-01	2.95E+00	5.91E-01
SELENIUM	6.30E-01	3.05E-01	2.23E-03	3.37E-02	3.59E-02	1.43E-01	6.60E-01	2.51E-01	5.44E-02
SILVER	2.10E-01	2.94E-03	7.42E-04	3.25E-04	1.07E-03	6.02E+00	1.19E+02	1.77E-04	9.00E-06
VANADIUM	3.30E+01	1.60E-01	1.17E-01	1.77E-02	1.34E-01	4.16E+00	9.44E+00	3.23E-02	1.42E-02
ZINC	2.17E+02	9.52E+01	7.67E-01	1.05E+01	1.13E+01	7.54E+01	2.98E+02	1.50E-01	3.78E-02
Semivolatile Organics									
1,1-BIPHENYL	3.00E-01	4.80E-02	1.06E-03	5.30E-03	6.36E-03	5.00E+01	2.50E+02	1.27E-04	2.55E-05
2-METHYLNAPHTHALENE	1.40E+00	3.11E-01	4.95E-03	3.44E-02	3.93E-02	6.56E+01	3.56E+02	5.99E-04	1.10E-04
ACENAPHTHENE	1.50E+01	3.79E-04	5.30E-02	4.18E-05	5.31E-02	6.56E+01	3.56E+02	8.09E-04	1.49E-04
ACENAPHTHYLENE	1.20E+00	3.68E-01	4.24E-03	4.06E-02	4.49E-02	6.56E+01	3.56E+02	6.84E-04	1.26E-04
ANTHRACENE	1.60E+01	3.22E+00	5.66E-02	3.56E-01	4.12E-01	6.56E+01	3.56E+02	6.29E-03	1.16E-03
BENZO(A)ANTHRACENE	9.10E+01	9.74E-01	3.22E-01	1.08E-01	4.29E-01	6.15E-01	3.84E+01	6.98E-01	1.12E-02
BENZO(A)PYRENE	1.20E+02	1.35E+01	4.24E-01	1.50E+00	1.92E+00	6.15E-01	3.84E+01	3.12E+00	5.00E-02
BENZO(B)FLUORANTHENE	1.30E+02	4.03E+01	4.60E-01	4.45E+00	4.91E+00	6.15E-01	3.84E+01	7.99E+00	1.28E-01
BENZO(G,H,I)PERYLENE	7.80E+01	6.82E+01	2.76E-01	7.53E+00	7.81E+00	6.15E-01	3.84E+01	1.27E+01	2.03E-01
BENZO(K)FLUORANTHENE	4.70E+01	3.16E+00	1.66E-01	3.49E-01	5.15E-01	6.15E-01	3.84E+01	8.38E-01	1.34E-02
CARBAZOLE	1.10E+01	2.64E+00	3.89E-02	2.92E-01	3.31E-01	6.15E-01	3.84E+01	5.37E-01	8.61E-03
CHRYSENE	1.00E+02	1.03E+00	3.54E-01	1.14E-01	4.67E-01	6.15E-01	3.84E+01	7.60E-01	1.22E-02
DIBENZO(A,H)ANTHRACENE	2.20E+01	2.86E+00	7.78E-02	3.16E-01	3.94E-01	6.15E-01	3.84E+01	6.40E-01	1.03E-02
DIBENZOFURAN	3.50E+00	5.25E-01	1.24E-02	5.80E-02	7.04E-02	6.15E-01	3.84E+01	1.14E-01	1.83E-03
FLUORANTHENE	1.10E+02	5.50E+01	3.89E-01	6.08E+00	6.46E+00	6.56E+01	3.56E+02	9.85E-02	1.82E-02
FLUORENE	6.10E+00	8.18E-04	2.16E-02	9.03E-05	2.17E-02	6.56E+01	3.56E+02	3.30E-04	6.08E-05
INDENO(1,2,3-CD)PYRENE	8.10E+01	8.91E+00	2.86E-01	9.84E-01	1.27E+00	6.15E-01	3.84E+01	2.07E+00	3.31E-02
N-NITROSODIPHENYLAMINE	9.20E-01	9.20E-01	3.25E-03	1.02E-01	1.05E-01	NV	NV	#VALUE!	#VALUE!
NAPHTHALENE	3.70E+00	4.51E+01	1.31E-02	4.99E+00	5.00E+00	6.56E+01	3.56E+02	7.62E-02	1.40E-02
PHENANTHRENE	6.30E+01	1.11E+01	2.23E-01	1.22E+00	1.44E+00	6.56E+01	3.56E+02	2.20E-02	4.06E-03
PYRENE	1.20E+02	8.64E+01	4.24E-01	9.54E+00	9.97E+00	6.15E-01	3.84E+01	1.62E+01	2.60E-01
Volatile Organics									
ACETONE	7.60E-02	3.95E-01	2.69E-04	4.37E-02	4.39E-02	1.00E+01	5.00E+01	4.39E-03	8.79E-04
TETRACHLOROETHENE	1.10E-03	1.32E-03	3.89E-06	1.46E-04	1.50E-04	1.40E+00	7.00E+00	1.07E-04	2.14E-05

APPENDIX F TABLE 10
MEADOW VOLE - CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	Max Soil Concentration (mg/kg)	Vegetation Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Vegetation	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Pesticides/PCBs									
4,4'-DDE	3.80E-02	6.93E-03	1.34E-04	7.65E-04	9.00E-04	1.47E-01	5.56E+00	6.12E-03	1.62E-04
4,4'-DDT	6.20E-02	1.00E-02	2.19E-04	1.11E-03	1.33E-03	1.47E-01	5.56E+00	9.01E-03	2.38E-04
ALPHA-BHC	9.30E-04	1.95E-04	3.29E-06	2.16E-05	2.49E-05	1.40E-02	1.40E-01	1.78E-03	1.78E-04
ALPHA-CHLORDANE	3.80E-03	9.50E-05	1.34E-05	1.05E-05	2.39E-05	4.58E+00	9.16E+00	5.22E-06	2.61E-06
AROCLOR-1260	4.50E+01	1.31E-01	1.59E-01	1.44E-02	1.73E-01	6.80E-02	6.80E-01	2.55E+00	2.55E-01
DIELDRIN	1.90E-01	1.56E-02	6.72E-04	1.72E-03	2.39E-03	1.50E-02	1.27E+00	1.60E-01	1.88E-03
ENDOSULFAN I	1.20E-03	3.96E-04	4.24E-06	4.37E-05	4.80E-05	1.50E-01	1.50E+00	3.20E-04	3.20E-05
ENDOSULFAN II	4.80E-01	1.58E-01	1.70E-03	1.75E-02	1.92E-02	1.50E-01	1.50E+00	1.28E-01	1.28E-02
ENDOSULFAN SULFATE	5.90E-03	1.95E-03	2.09E-05	2.15E-04	2.36E-04	1.50E-01	1.50E+00	1.57E-03	1.57E-04
ENDRIN	2.00E-01	1.64E-02	7.07E-04	1.81E-03	2.52E-03	9.20E-02	9.20E-01	2.74E-02	2.74E-03
ENDRIN ALDEHYDE	6.30E-04	5.17E-05	2.23E-06	5.71E-06	7.93E-06	9.20E-02	9.20E-01	8.62E-05	8.62E-06
ENDRIN KETONE	8.70E-04	7.13E-05	3.08E-06	7.88E-06	1.10E-05	9.20E-02	9.20E-01	1.19E-04	1.19E-05
GAMMA-BHC (LINDANE)	5.30E-03	1.43E-03	1.87E-05	1.58E-04	1.77E-04	8.00E+00	8.00E+01	2.21E-05	2.21E-06
GAMMA-CHLORDANE	1.30E-02	3.25E-04	4.60E-05	3.59E-05	8.19E-05	4.58E+00	9.16E+00	1.79E-05	8.94E-06
HEPTACHLOR EPOXIDE	1.40E-03	3.92E-05	4.95E-06	4.33E-06	9.28E-06	1.00E-01	1.00E+00	9.28E-05	9.28E-06
TOTAL DDD/DDE/DDT	9.56E-02	1.39E-02	3.38E-04	1.53E-03	1.87E-03	1.47E-01	5.56E+00	1.27E-02	3.36E-04
Petroleum Hydrocarbons									
DIESEL RANGE ORGANICS	5.60E+03	5.60E+03	1.98E+01	6.19E+02	6.38E+02	NV	NV	#VALUE!	#VALUE!

Cells are shaded if the EEQ is greater than 1.0.

Body Weight = (BW)	1.700E-02	kg
Food Ingestion Rate = (If)	1.878E-03	kg/day
Soil Ingestion Rate = (Is)	6.010E-05	kg/day
Home Range = (HR)	Assume 100% on site	
Contaminated Area = (CA)	Assume equal to home range	

H=HR/CA (Assume = to 1 for maximum exposure)

Dose (surface soil) = (Cs * Is)(H)/BW
Dose (vegetation) = (Cv * If)(H)/BW
Total Dose = Dose (surface soil) + Dose (surface water) + Dose (vegetation)

Definitions:
HQ - Hazard Quotient
NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
Cs = Contaminant concentration in soil
Cv = Contaminant conc. in vegetation (=soil conc. * Biotransfer Factor)
NV = No value available
#VALUE! = Value not able to be calculated

APPENDIX F TABLE 11
MEADOW VOLE - LESS CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	95% UCL Soil Concentration (mg/kg)	Vegetation Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Vegetation	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Explosives									
2,4-DINITROTOLUENE	1.50E-01	3.90E-01	8.77E-05	1.90E-02	1.91E-02	6.70E-01	1.40E+00	2.85E-02	1.36E-02
NITROGLYCERIN	1.05E+01	1.05E+01	6.14E-03	5.12E-01	5.18E-01	3.00E+00	3.20E+01	1.73E-01	1.62E-02
Inorganics									
ANTIMONY	2.40E+00	8.97E-02	1.40E-03	4.37E-03	5.77E-03	5.90E-02	2.76E+00	9.78E-02	2.09E-03
ARSENIC	4.20E+01	1.58E+00	2.46E-02	7.68E-02	1.01E-01	1.04E+00	4.55E+00	9.74E-02	2.23E-02
BARIUM	3.03E+01	4.73E+00	1.77E-02	2.30E-01	2.48E-01	5.18E+01	8.27E+01	4.79E-03	3.00E-03
CADMIUM	7.60E-01	5.35E-01	4.44E-04	2.61E-02	2.65E-02	7.70E-01	6.90E+00	3.44E-02	3.84E-03
CHROMIUM	2.86E+01	1.17E+00	1.67E-02	5.71E-02	7.38E-02	2.40E+00	5.82E+01	3.07E-02	1.27E-03
COBALT	1.59E+01	1.19E-01	9.29E-03	5.81E-03	1.51E-02	7.33E+00	1.89E+01	2.06E-03	7.99E-04
COPPER	2.74E+02	1.78E+01	1.60E-01	8.67E-01	1.03E+00	5.60E+00	8.27E+01	1.84E-01	1.24E-02
IRON	2.93E+04	1.25E+02	1.71E+01	6.07E+00	2.32E+01	5.00E+01	5.00E+02	4.64E-01	4.64E-02
LEAD	5.31E+02	8.95E+00	3.10E-01	4.36E-01	7.47E-01	4.70E+00	1.86E+02	1.59E-01	4.01E-03
MANGANESE	4.99E+02	3.94E+01	2.92E-01	1.92E+00	2.21E+00	5.15E+01	1.46E+02	4.30E-02	1.52E-02
MERCURY	8.00E-02	5.22E-02	4.68E-05	2.54E-03	2.59E-03	3.20E-02	1.60E-01	8.09E-02	1.62E-02
SELENIUM	4.50E-01	2.10E-01	2.63E-04	1.03E-02	1.05E-02	1.43E-01	6.60E-01	7.35E-02	1.59E-02
SILVER	1.00E-01	1.40E-03	5.85E-05	6.82E-05	1.27E-04	6.02E+00	1.19E+02	2.10E-05	1.07E-06
VANADIUM	2.35E+01	1.14E-01	1.37E-02	5.55E-03	1.93E-02	4.16E+00	9.44E+00	4.64E-03	2.04E-03
ZINC	1.48E+02	7.70E+01	8.65E-02	3.75E+00	3.84E+00	7.54E+01	2.98E+02	5.09E-02	1.29E-02
Semivolatile Organics									
1,1-BIPHENYL	4.82E-01	7.71E-02	2.82E-04	3.76E-03	4.04E-03	5.00E+01	2.50E+02	8.08E-05	1.62E-05
2-METHYLNAPHTHALENE	5.22E-01	1.99E-01	3.05E-04	9.68E-03	9.98E-03	6.56E+01	3.56E+02	1.52E-04	2.80E-05
ACENAPHTHENE	2.40E+00	1.82E-03	1.40E-03	8.85E-05	1.49E-03	6.56E+01	3.56E+02	2.27E-05	4.19E-06
ACENAPHTHYLENE	5.02E-01	1.85E-01	2.93E-04	8.99E-03	9.28E-03	6.56E+01	3.56E+02	1.42E-04	2.61E-05
ANTHRACENE	2.57E+00	7.76E-01	1.50E-03	3.78E-02	3.93E-02	6.56E+01	3.56E+02	5.99E-04	1.10E-04
BENZO(A)ANTHRACENE	1.54E+01	3.39E-01	9.00E-03	1.65E-02	2.55E-02	6.15E-01	3.84E+01	4.15E-02	6.64E-04
BENZO(A)PYRENE	2.12E+01	2.50E+00	1.24E-02	1.22E-01	1.34E-01	6.15E-01	3.84E+01	2.18E-01	3.49E-03
BENZO(B)FLUORANTHENE	2.04E+01	6.32E+00	1.19E-02	3.08E-01	3.20E-01	6.15E-01	3.84E+01	5.20E-01	8.33E-03
BENZO(G,H,I)PERYLENE	2.77E+01	2.00E+01	1.62E-02	9.76E-01	9.92E-01	6.15E-01	3.84E+01	1.61E+00	2.58E-02
BENZO(K)FLUORANTHENE	7.82E+00	6.77E-01	4.57E-03	3.30E-02	3.75E-02	6.15E-01	3.84E+01	6.11E-02	9.78E-04
CARBAZOLE	1.87E+00	4.49E-01	1.09E-03	2.19E-02	2.30E-02	6.15E-01	3.84E+01	3.73E-02	5.98E-04
CHRYSENE	1.57E+01	3.43E-01	9.18E-03	1.67E-02	2.59E-02	6.15E-01	3.84E+01	4.21E-02	6.74E-04
DIBENZO(A,H)ANTHRACENE	4.77E+00	6.20E-01	2.79E-03	3.02E-02	3.30E-02	6.15E-01	3.84E+01	5.37E-02	8.59E-04
DIBENZOFURAN	6.51E-01	9.77E-02	3.81E-04	4.76E-03	5.14E-03	6.15E-01	3.84E+01	8.35E-03	1.34E-04
FLUORANTHENE	1.92E+01	9.60E+00	1.12E-02	4.68E-01	4.79E-01	6.56E+01	3.56E+02	7.30E-03	1.35E-03
FLUORENE	1.07E+00	3.63E-03	6.26E-04	1.77E-04	8.02E-04	6.56E+01	3.56E+02	1.22E-05	2.25E-06
INDENO(1,2,3-CD)PYRENE	1.30E+01	1.43E+00	7.60E-03	6.97E-02	7.73E-02	6.15E-01	3.84E+01	1.26E-01	2.01E-03
N-NITROSODIPHENYLAMINE	5.60E-01	5.60E-01	3.27E-04	2.73E-02	2.76E-02	NV	NV	#VALUE!	#VALUE!
NAPHTHALENE	9.32E-01	1.14E+01	5.45E-04	5.54E-01	5.54E-01	6.56E+01	3.56E+02	8.45E-03	1.56E-03
PHENANTHRENE	1.66E+01	4.84E+00	9.70E-03	2.36E-01	2.45E-01	6.56E+01	3.56E+02	3.74E-03	6.89E-04
PYRENE	3.37E+01	2.43E+01	1.97E-02	1.18E+00	1.20E+00	6.15E-01	3.84E+01	1.95E+00	3.13E-02
Volatile Organics									
ACETONE	2.21E-02	1.15E-01	1.29E-05	5.60E-03	5.61E-03	1.00E+01	5.00E+01	5.61E-04	1.12E-04
TETRACHLOROETHENE	1.10E-03	1.32E-03	6.43E-07	6.43E-05	6.49E-05	1.40E+00	7.00E+00	4.64E-05	9.28E-06
Pesticides/PCBs									
4,4'-DDE	1.62E-02	3.65E-03	9.47E-06	1.78E-04	1.87E-04	1.47E-01	5.56E+00	1.27E-03	3.37E-05

APPENDIX F TABLE 11
MEADOW VOLE - LESS CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	95% UCL Soil Concentration (mg/kg)	Vegetation Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Vegetation	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
4,4'-DDT	2.07E-02	4.39E-03	1.21E-05	2.14E-04	2.26E-04	1.47E-01	5.56E+00	1.54E-03	4.06E-05
ALPHA-BHC	7.00E-04	1.47E-04	4.09E-07	7.16E-06	7.57E-06	1.40E-02	1.40E-01	5.41E-04	5.41E-05
ALPHA-CHLORDANE	6.10E-04	1.53E-05	3.57E-07	7.43E-07	1.10E-06	4.58E+00	9.16E+00	2.40E-07	1.20E-07
AROCLOR-1260	4.08E+01	1.18E-01	2.39E-02	5.76E-03	2.96E-02	6.80E-02	6.80E-01	4.36E-01	4.36E-02
DIELDRIN	1.70E-01	1.39E-02	9.94E-05	6.79E-04	7.78E-04	1.50E-02	1.27E+00	5.19E-02	6.13E-04
ENDOSULFAN I	2.70E-04	8.91E-05	1.58E-07	4.34E-06	4.50E-06	1.50E-01	1.50E+00	3.00E-05	3.00E-06
ENDOSULFAN II	1.17E-01	3.86E-02	6.84E-05	1.88E-03	1.95E-03	1.50E-01	1.50E+00	1.30E-02	1.30E-03
ENDOSULFAN SULFATE	3.05E-03	1.01E-03	1.78E-06	4.90E-05	5.08E-05	1.50E-01	1.50E+00	3.39E-04	3.39E-05
ENDRIN	6.25E-02	5.13E-03	3.65E-05	2.50E-04	2.86E-04	9.20E-02	9.20E-01	3.11E-03	3.11E-04
ENDRIN ALDEHYDE	6.30E-04	5.17E-05	3.68E-07	2.52E-06	2.88E-06	9.20E-02	9.20E-01	3.14E-05	3.14E-06
ENDRIN KETONE	8.70E-04	7.13E-05	5.09E-07	3.48E-06	3.98E-06	9.20E-02	9.20E-01	4.33E-05	4.33E-06
GAMMA-BHC (LINDANE)	1.80E-03	4.86E-04	1.05E-06	2.37E-05	2.47E-05	8.00E+00	8.00E+01	3.09E-06	3.09E-07
GAMMA-CHLORDANE	4.60E-03	1.15E-04	2.69E-06	5.60E-06	8.29E-06	4.58E+00	9.16E+00	1.81E-06	9.05E-07
HEPTACHLOR EPOXIDE	5.80E-04	1.62E-05	3.39E-07	7.91E-07	1.13E-06	1.00E-01	1.00E+00	1.13E-05	1.13E-06
TOTAL DDD/DDE/DDT	5.29E-02	8.88E-03	3.09E-05	4.33E-04	4.64E-04	1.47E-01	5.56E+00	3.15E-03	8.34E-05
Petroleum Hydrocarbons									
DIESEL RANGE ORGANICS	3.08E+03	3.08E+03	1.80E+00	1.50E+02	1.52E+02	NV	NV	#VALUE!	#VALUE!

Cells are shaded if the EEQ is greater than 1.0.

Body Weight = (BW)	3.580E-02	kg
Food Ingestion Rate = (If)	1.744E-03	kg/day
Soil Ingestion Rate = (Is)	2.093E-05	kg/day
Home Range = (HR)	6.590E-02	acres
Contaminated Area = (CA)	Assume equal to home range	
H=HR/CA (Assume = to 1 for maximum exposure)		

Definitions:
HQ - Hazard Quotient
NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
Cs = Contaminant concentration in soil
Cv = Contaminant conc. in vegetation (=soil conc. * Biotransfer Factor)

Dose (surface soil) = (Cs * Is)(H)/BW
Dose (vegetation) = (Cv * If)(H)/BW
Total Dose = Dose (surface soil) + Dose (vegetation)

APPENDIX F TABLE 12
SHORT-TAILED SHREW - CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	Max Soil Concentration (mg/kg)	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Inverts.	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Explosives									
2,4-DINITROTOLUENE	1.60E-01	1.60E-01	5.12E-04	1.74E-01	1.74E-01	6.70E-01	1.40E+00	2.60E-01	1.24E-01
NITROGLYCERIN	1.60E+01	1.60E+01	5.12E-02	1.74E+01	1.74E+01	3.00E+00	3.20E+01	5.81E+00	5.44E-01
Inorganics									
ALUMINUM	1.49E+04	1.76E+03	4.77E+01	1.91E+03	1.96E+03	1.93E+00	1.93E+01	1.01E+03	1.01E+02
ANTIMONY	8.50E+00	8.50E+00	2.72E-02	9.23E+00	9.25E+00	5.90E-02	2.76E+00	1.57E+02	3.35E+00
ARSENIC	8.55E+01	5.58E+00	2.74E-01	6.06E+00	6.33E+00	1.04E+00	4.55E+00	6.09E+00	1.39E+00
BARIUM	5.19E+01	4.72E+00	1.66E-01	5.13E+00	5.29E+00	5.18E+01	8.27E+01	1.02E-01	6.40E-02
BERYLLIUM	3.90E-01	1.76E-02	1.25E-03	1.90E-02	2.03E-02	5.32E-01	6.73E-01	3.82E-02	3.02E-02
CADMIUM	1.40E+00	1.08E+01	4.48E-03	1.17E+01	1.17E+01	7.70E-01	6.90E+00	1.53E+01	1.70E+00
CHROMIUM	4.59E+01	1.40E+01	1.47E-01	1.52E+01	1.54E+01	2.40E+00	5.82E+01	6.41E+00	2.65E-01
COBALT	2.18E+01	2.66E+00	6.98E-02	2.89E+00	2.96E+00	7.33E+00	1.89E+01	4.03E-01	1.56E-01
COPPER	5.79E+02	2.98E+02	1.85E+00	3.24E+02	3.25E+02	5.60E+00	8.27E+01	5.81E+01	3.94E+00
IRON	3.38E+04	2.64E+03	1.08E+02	2.86E+03	2.97E+03	5.00E+01	5.00E+02	5.94E+01	5.94E+00
LEAD	9.99E+02	2.12E+02	3.20E+00	2.30E+02	2.33E+02	4.70E+00	1.86E+02	4.96E+01	1.25E+00
MANGANESE	6.60E+02	3.73E+01	2.11E+00	4.05E+01	4.26E+01	5.15E+01	1.46E+02	8.27E-01	2.92E-01
MERCURY	1.70E-01	5.95E-01	5.44E-04	6.46E-01	6.47E-01	3.20E-02	1.60E-01	2.02E+01	4.04E+00
SELENIUM	6.30E-01	6.61E-01	2.02E-03	7.18E-01	7.20E-01	1.43E-01	6.60E-01	5.03E+00	1.09E+00
SILVER	2.10E-01	4.29E-01	6.72E-04	4.66E-01	4.67E-01	6.02E+00	1.19E+02	7.75E-02	3.93E-03
VANADIUM	3.30E+01	1.39E+00	1.06E-01	1.50E+00	1.61E+00	4.16E+00	9.44E+00	3.87E-01	1.71E-01
ZINC	2.17E+02	4.99E+02	6.95E-01	5.42E+02	5.43E+02	7.54E+01	2.98E+02	7.20E+00	1.82E+00
Semivolatile Organics									
1,1-BIPHENYL	3.00E-01	3.00E-01	9.60E-04	3.26E-01	3.27E-01	5.00E+01	2.50E+02	6.53E-03	1.31E-03
2-METHYLNAPHTHALENE	1.40E+00	4.26E+00	4.48E-03	4.62E+00	4.62E+00	6.56E+01	3.56E+02	7.05E-02	1.30E-02
ACENAPHTHENE	1.50E+01	2.21E+01	4.80E-02	2.39E+01	2.40E+01	6.56E+01	3.56E+02	3.66E-01	6.74E-02
ACENAPHTHYLENE	1.20E+00	2.75E+01	3.84E-03	2.98E+01	2.98E+01	6.56E+01	3.56E+02	4.55E-01	8.38E-02
ANTHRACENE	1.60E+01	3.87E+01	5.12E-02	4.20E+01	4.21E+01	6.56E+01	3.56E+02	6.41E-01	1.18E-01
BENZO(A)ANTHRACENE	9.10E+01	1.45E+02	2.91E-01	1.57E+02	1.57E+02	6.15E-01	3.84E+01	2.56E+02	4.10E+00
BENZO(A)PYRENE	1.20E+02	1.60E+02	3.84E-01	1.73E+02	1.74E+02	6.15E-01	3.84E+01	2.82E+02	4.52E+00
BENZO(B)FLUORANTHENE	1.30E+02	3.38E+02	4.16E-01	3.67E+02	3.67E+02	6.15E-01	3.84E+01	5.97E+02	9.56E+00
BENZO(G,H,I)PERYLENE	7.80E+01	2.29E+02	2.50E-01	2.49E+02	2.49E+02	6.15E-01	3.84E+01	4.05E+02	6.49E+00
BENZO(K)FLUORANTHENE	4.70E+01	1.22E+02	1.50E-01	1.33E+02	1.33E+02	6.15E-01	3.84E+01	2.16E+02	3.46E+00
CARBAZOLE	1.10E+01	1.10E+01	3.52E-02	1.19E+01	1.20E+01	6.15E-01	3.84E+01	1.95E+01	3.12E-01
CHRYSENE	1.00E+02	2.29E+02	3.20E-01	2.49E+02	2.49E+02	6.15E-01	3.84E+01	4.05E+02	6.48E+00
DIBENZO(A,H)ANTHRACENE	2.20E+01	5.08E+01	7.04E-02	5.52E+01	5.52E+01	6.15E-01	3.84E+01	8.98E+01	1.44E+00
DIBENZOFURAN	3.50E+00	3.50E+00	1.12E-02	3.80E+00	3.81E+00	6.15E-01	3.84E+01	6.19E+00	9.92E-02
FLUORANTHENE	1.10E+02	3.34E+02	3.52E-01	3.63E+02	3.63E+02	6.56E+01	3.56E+02	5.54E+00	1.02E+00
FLUORENE	6.10E+00	5.84E+01	1.95E-02	6.34E+01	6.34E+01	6.56E+01	3.56E+02	9.66E-01	1.78E-01
INDENO(1,2,3-CD)PYRENE	8.10E+01	2.32E+02	2.59E-01	2.51E+02	2.52E+02	6.15E-01	3.84E+01	4.09E+02	6.55E+00
N-NITROSODIPHENYLAMINE	9.20E-01	9.20E-01	2.94E-03	9.99E-01	1.00E+00	NV	NV	#VALUE!	#VALUE!
NAPHTHALENE	3.70E+00	1.63E+01	1.18E-02	1.77E+01	1.77E+01	6.56E+01	3.56E+02	2.70E-01	4.97E-02
PHENANTHRENE	6.30E+01	1.08E+02	2.02E-01	1.18E+02	1.18E+02	6.56E+01	3.56E+02	1.80E+00	3.31E-01
PYRENE	1.20E+02	2.10E+02	3.84E-01	2.28E+02	2.28E+02	6.15E-01	3.84E+01	3.71E+02	5.95E+00

APPENDIX F TABLE 12
SHORT-TAILED SHREW - CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	Max Soil Concentration (mg/kg)	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Inverts.	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Volatile Organics									
ACETONE	7.60E-02	7.60E-02	2.43E-04	8.25E-02	8.27E-02	1.00E+01	5.00E+01	8.27E-03	1.65E-03
TETRACHLOROETHENE	1.10E-03	1.10E-03	3.52E-06	1.19E-03	1.20E-03	1.40E+00	7.00E+00	8.55E-04	1.71E-04
Pesticides/PCBs									
4,4'-DDE	3.80E-02	6.69E-01	1.22E-04	7.26E-01	7.26E-01	1.47E-01	5.56E+00	4.94E+00	1.31E-01
4,4'-DDT	6.20E-02	7.47E-01	1.98E-04	8.11E-01	8.11E-01	1.47E-01	5.56E+00	5.52E+00	1.46E-01
ALPHA-BHC	9.30E-04	4.65E-03	2.98E-06	5.05E-03	5.05E-03	1.40E-02	1.40E-01	3.61E-01	3.61E-02
ALPHA-CHLORDANE	3.80E-03	1.90E-02	1.22E-05	2.06E-02	2.06E-02	4.58E+00	9.16E+00	4.51E-03	2.25E-03
AROCLOR-1260	4.50E+01	7.16E+02	1.44E-01	7.77E+02	7.77E+02	6.80E-02	6.80E-01	1.14E+04	1.14E+03
DIELDRIN	1.90E-01	2.79E+00	6.08E-04	3.03E+00	3.03E+00	1.50E-02	1.27E+00	2.02E+02	2.39E+00
ENDOSULFAN I	1.20E-03	1.20E-03	3.84E-06	1.30E-03	1.31E-03	1.50E-01	1.50E+00	8.71E-03	8.71E-04
ENDOSULFAN II	4.80E-01	4.80E-01	1.54E-03	5.21E-01	5.22E-01	1.50E-01	1.50E+00	3.48E+00	3.48E-01
ENDOSULFAN SULFATE	5.90E-03	5.90E-03	1.89E-05	6.40E-03	6.42E-03	1.50E-01	1.50E+00	4.28E-02	4.28E-03
ENDRIN	2.00E-01	7.20E-01	6.40E-04	7.81E-01	7.82E-01	9.20E-02	9.20E-01	8.50E+00	8.50E-01
ENDRIN ALDEHYDE	6.30E-04	2.27E-03	2.02E-06	2.46E-03	2.46E-03	9.20E-02	9.20E-01	2.68E-02	2.68E-03
ENDRIN KETONE	8.70E-04	3.13E-03	2.78E-06	3.40E-03	3.40E-03	9.20E-02	9.20E-01	3.70E-02	3.70E-03
GAMMA-BHC (LINDANE)	5.30E-03	2.65E-02	1.70E-05	2.88E-02	2.88E-02	8.00E+00	8.00E+01	3.60E-03	3.60E-04
GAMMA-CHLORDANE	1.30E-02	6.50E-02	4.16E-05	7.05E-02	7.06E-02	4.58E+00	9.16E+00	1.54E-02	7.71E-03
HEPTACHLOR EPOXIDE	1.40E-03	4.20E-03	4.48E-06	4.56E-03	4.56E-03	1.00E-01	1.00E+00	4.56E-02	4.56E-03
TOTAL DDD/DDE/DDT	9.56E-02	1.07E+00	3.06E-04	1.16E+00	1.16E+00	1.47E-01	5.56E+00	7.91E+00	2.09E-01
Petroleum Hydrocarbons									
DIESEL RANGE ORGANICS	5.60E+03	5.60E+03	1.79E+01	6.08E+03	6.10E+03	NV	NV	#VALUE!	#VALUE!

Cells are shaded if the EEQ is greater than 1.0.

Body Weight = (BW)	1.500E-02	kg
Food Ingestion Rate = (If)	1.628E-02	kg/day
Soil Ingestion Rate = (Is)	4.801E-05	kg/day
Home Range = (HR)	Assume 100% on si	
Contaminated Area = (CA)	Assume equal to ho	

H=HR/CA (Assume = to 1 for maximum exposure)

Dose (surface soil) = (Cs * Is)(H)/BW
Dose (invertebrates) = (Ci * If)(H)/BW
Total Dose = Dose (surface soil) + Dose (invertebrates)

Definitions:
HQ - Hazard Quotient
NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
Cs = Contaminant concentration in soil
Ci = Contaminant conc. in soil invertebrates (=soil conc. * Biotransfer Factor)
NV = No value available
#VALUE! = Value not able to be calculated

APPENDIX F TABLE 13
SHORT-TAILED SHREW - LESS CONSERVATIVE
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	95% UCL Soil Concentration (mg/kg)[1]	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Inverts.	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Explosives									
2,4-DINITROTOLUENE	1.50E-01	1.50E-01	1.20E-04	1.27E-01	1.27E-01	6.70E-01	1.40E+00	1.89E-01	9.07E-02
NITROGLYCERIN	1.05E+01	1.05E+01	8.41E-03	8.88E+00	8.88E+00	3.00E+00	3.20E+01	2.96E+00	2.78E-01
Inorganics									
ANTIMONY	2.40E+00	2.40E+00	1.92E-03	2.03E+00	2.03E+00	5.90E-02	2.76E+00	3.44E+01	7.36E-01
ARSENIC	4.20E+01	3.38E+00	3.36E-02	2.86E+00	2.89E+00	1.04E+00	4.55E+00	2.78E+00	6.35E-01
BARIUM	3.03E+01	2.76E+00	2.43E-02	2.33E+00	2.36E+00	5.18E+01	8.27E+01	4.55E-02	2.85E-02
CADMIUM	7.60E-01	6.66E+00	6.09E-04	5.63E+00	5.63E+00	7.70E-01	6.90E+00	7.31E+00	8.16E-01
CHROMIUM	2.86E+01	8.75E+00	2.29E-02	7.40E+00	7.42E+00	2.40E+00	5.82E+01	3.09E+00	1.28E-01
COBALT	1.59E+01	1.94E+00	1.27E-02	1.64E+00	1.65E+00	7.33E+00	1.89E+01	2.25E-01	8.74E-02
COPPER	2.74E+02	1.41E+02	2.19E-01	1.19E+02	1.20E+02	5.60E+00	8.27E+01	2.13E+01	1.45E+00
IRON	2.93E+04	1.05E+03	2.35E+01	8.92E+02	9.15E+02	5.00E+01	5.00E+02	1.83E+01	1.83E+00
LEAD	5.31E+02	1.27E+02	4.25E-01	1.08E+02	1.08E+02	4.70E+00	1.86E+02	2.30E+01	5.79E-01
MANGANESE	4.99E+02	3.08E+01	4.00E-01	2.60E+01	2.64E+01	5.15E+01	1.46E+02	5.14E-01	1.81E-01
MERCURY	8.00E-02	4.62E-01	6.41E-05	3.90E-01	3.90E-01	3.20E-02	1.60E-01	1.22E+01	2.44E+00
SELENIUM	4.50E-01	5.17E-01	3.60E-04	4.37E-01	4.37E-01	1.43E-01	6.60E-01	3.06E+00	6.62E-01
SILVER	1.00E-01	2.05E-01	8.01E-05	1.73E-01	1.73E-01	6.02E+00	1.19E+02	2.87E-02	1.46E-03
VANADIUM	2.35E+01	9.87E-01	1.88E-02	8.34E-01	8.53E-01	4.16E+00	9.44E+00	2.05E-01	9.04E-02
ZINC	1.48E+02	4.41E+02	1.19E-01	3.72E+02	3.73E+02	7.54E+01	2.98E+02	4.94E+00	1.25E+00
Semivolatile Organics									
1,1-BIPHENYL	4.82E-01	4.82E-01	3.86E-04	4.08E-01	4.08E-01	5.00E+01	2.50E+02	8.16E-03	1.63E-03
2-METHYLNAPHTHALENE	5.22E-01	1.59E+00	4.18E-04	1.34E+00	1.34E+00	6.56E+01	3.56E+02	2.04E-02	3.77E-03
ACENAPHTHENE	2.40E+00	3.53E+00	1.92E-03	2.98E+00	2.98E+00	6.56E+01	3.56E+02	4.55E-02	8.38E-03
ACENAPHTHYLENE	5.02E-01	1.15E+01	4.02E-04	9.71E+00	9.71E+00	6.56E+01	3.56E+02	1.48E-01	2.73E-02
ANTHRACENE	2.57E+00	6.22E+00	2.06E-03	5.26E+00	5.26E+00	6.56E+01	3.56E+02	8.02E-02	1.48E-02
BENZO(A)ANTHRACENE	1.54E+01	2.45E+01	1.23E-02	2.07E+01	2.07E+01	6.15E-01	3.84E+01	3.37E+01	5.39E-01
BENZO(A)PYRENE	2.12E+01	2.82E+01	1.70E-02	2.38E+01	2.39E+01	6.15E-01	3.84E+01	3.88E+01	6.21E-01
BENZO(B)FLUORANTHENE	2.04E+01	5.30E+01	1.63E-02	4.48E+01	4.49E+01	6.15E-01	3.84E+01	7.29E+01	1.17E+00
BENZO(G,H,I)PERYLENE	2.77E+01	8.14E+01	2.22E-02	6.88E+01	6.89E+01	6.15E-01	3.84E+01	1.12E+02	1.79E+00
BENZO(K)FLUORANTHENE	7.82E+00	2.03E+01	6.26E-03	1.72E+01	1.72E+01	6.15E-01	3.84E+01	2.80E+01	4.48E-01
CARBAZOLE	1.87E+00	1.87E+00	1.50E-03	1.58E+00	1.58E+00	6.15E-01	3.84E+01	2.57E+00	4.12E-02
CHRYSENE	1.57E+01	3.60E+01	1.26E-02	3.04E+01	3.04E+01	6.15E-01	3.84E+01	4.94E+01	7.92E-01
DIBENZO(A,H)ANTHRACENE	4.77E+00	1.10E+01	3.82E-03	9.31E+00	9.32E+00	6.15E-01	3.84E+01	1.52E+01	2.43E-01
DIBENZOFURAN	6.51E-01	6.51E-01	5.21E-04	5.50E-01	5.51E-01	6.15E-01	3.84E+01	8.96E-01	1.43E-02
FLUORANTHENE	1.92E+01	5.84E+01	1.54E-02	4.93E+01	4.94E+01	6.56E+01	3.56E+02	7.52E-01	1.39E-01
FLUORENE	1.07E+00	1.02E+01	8.57E-04	8.66E+00	8.66E+00	6.56E+01	3.56E+02	1.32E-01	2.43E-02
INDENO(1,2,3-CD)PYRENE	1.30E+01	3.72E+01	1.04E-02	3.14E+01	3.14E+01	6.15E-01	3.84E+01	5.11E+01	8.19E-01
N-NITROSODIPHENYLAMINE	5.60E-01	5.60E-01	4.48E-04	4.73E-01	4.74E-01	NV	NV	#VALUE!	#VALUE!
NAPHTHALENE	9.32E-01	4.10E+00	7.46E-04	3.47E+00	3.47E+00	6.56E+01	3.56E+02	5.29E-02	9.74E-03
PHENANTHRENE	1.66E+01	2.86E+01	1.33E-02	2.41E+01	2.41E+01	6.56E+01	3.56E+02	3.68E-01	6.78E-02
PYRENE	3.37E+01	5.90E+01	2.70E-02	4.99E+01	4.99E+01	6.15E-01	3.84E+01	8.11E+01	1.30E+00

APPENDIX F TABLE 13
SHORT-TAILED SHREW - LESS CONSERVATIVE
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	95% UCL Soil Concentration (mg/kg)[1]	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Inverts.	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Volatile Organics									
ACETONE	2.21E-02	2.21E-02	1.77E-05	1.87E-02	1.87E-02	1.00E+01	5.00E+01	1.87E-03	3.74E-04
TETRACHLOROETHENE	1.10E-03	1.10E-03	8.81E-07	9.30E-04	9.31E-04	1.40E+00	7.00E+00	6.65E-04	1.33E-04
Pesticides/PCBs									
4,4'-DDE	1.62E-02	3.16E-01	1.30E-05	2.67E-01	2.67E-01	1.47E-01	5.56E+00	1.82E+00	4.80E-02
4,4'-DDT	2.07E-02	2.88E-01	1.66E-05	2.44E-01	2.44E-01	1.47E-01	5.56E+00	1.66E+00	4.38E-02
ALPHA-BHC	7.00E-04	3.50E-03	5.61E-07	2.96E-03	2.96E-03	1.40E-02	1.40E-01	2.11E-01	2.11E-02
ALPHA-CHLORDANE	6.10E-04	3.05E-03	4.88E-07	2.58E-03	2.58E-03	4.58E+00	9.16E+00	5.63E-04	2.82E-04
AROCLOR-1260	4.08E+01	2.72E+02	3.27E-02	2.30E+02	2.30E+02	6.80E-02	6.80E-01	3.38E+03	3.38E+02
DIELDRIN	1.70E-01	2.50E+00	1.36E-04	2.11E+00	2.11E+00	1.50E-02	1.27E+00	1.41E+02	1.66E+00
ENDOSULFAN I	2.70E-04	2.70E-04	2.16E-07	2.28E-04	2.28E-04	1.50E-01	1.50E+00	1.52E-03	1.52E-04
ENDOSULFAN II	1.17E-01	1.17E-01	9.37E-05	9.89E-02	9.90E-02	1.50E-01	1.50E+00	6.60E-01	6.60E-02
ENDOSULFAN SULFATE	3.05E-03	3.05E-03	2.44E-06	2.58E-03	2.58E-03	1.50E-01	1.50E+00	1.72E-02	1.72E-03
ENDRIN	6.25E-02	2.25E-01	5.01E-05	1.90E-01	1.90E-01	9.20E-02	9.20E-01	2.07E+00	2.07E-01
ENDRIN ALDEHYDE	6.30E-04	2.27E-03	5.05E-07	1.92E-03	1.92E-03	9.20E-02	9.20E-01	2.08E-02	2.08E-03
ENDRIN KETONE	8.70E-04	3.13E-03	6.97E-07	2.65E-03	2.65E-03	9.20E-02	9.20E-01	2.88E-02	2.88E-03
GAMMA-BHC (LINDANE)	1.80E-03	9.00E-03	1.44E-06	7.61E-03	7.61E-03	8.00E+00	8.00E+01	9.51E-04	9.51E-05
GAMMA-CHLORDANE	4.60E-03	2.30E-02	3.68E-06	1.94E-02	1.94E-02	4.58E+00	9.16E+00	4.25E-03	2.12E-03
HEPTACHLOR EPOXIDE	5.80E-04	1.74E-03	4.64E-07	1.47E-03	1.47E-03	1.00E-01	1.00E+00	1.47E-02	1.47E-03
TOTAL DDD/DDE/DDT	5.29E-02	5.92E-01	4.24E-05	5.01E-01	5.01E-01	1.47E-01	5.56E+00	3.41E+00	9.01E-02
Petroleum Hydrocarbons									
DIESEL RANGE ORGANICS	3.08E+03	3.08E+03	2.47E+00	2.60E+03	2.61E+03	NV	NV	#VALUE!	#VALUE!

1 - The average value was used for dioxins because a 95% UCL was not able to be calculated due to less than 10 samples.
Cells are shaded if the EEQ is greater than 1.0.

Body Weight = (BW)	1.610E-02	kg
Food Ingestion Rate = (If)	1.361E-02	kg/day
Soil Ingestion Rate = (Is)	1.289E-05	kg/day
Home Range = (HR)	9.699E-01	acres
Contaminated Area = (CA)	Assume equal to ho	
H=HR/CA (Assume = to 1 for maximum exposure)		

Definitions:
HQ - Hazard Quotient
NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
Cs = Contaminant concentration in soil
Ci = Contaminant conc. in soil invertebrates (=soil conc. * Biotransfer Factor)

Dose (surface soil) = (Cs * Is)(H)/BW
Dose (invertebrates) = (Ci * If)(H)/BW
Total Dose = Dose (surface soil) + Dose (invertebrates)

APPENDIX F TABLE 14
AMERICAN ROBIN - CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	Max Soil Concentration (mg/kg)	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Inverts.	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Explosives									
2,4-DINITROTOLUENE	1.60E-01	1.60E-01	4.23E-03	2.58E-02	3.01E-02	1.00E+00	5.00E+00	3.01E-02	6.01E-03
NITROGLYCERIN	1.60E+01	1.60E+01	4.23E-01	2.58E+00	3.01E+00	NV	NV	#VALUE!	#VALUE!
Inorganics									
ALUMINUM	1.49E+04	1.76E+03	3.94E+02	2.84E+02	6.78E+02	1.10E+02	1.10E+03	6.18E+00	6.18E-01
ANTIMONY	8.50E+00	8.50E+00	2.25E-01	1.37E+00	1.60E+00	NV	NV	#VALUE!	#VALUE!
ARSENIC	8.55E+01	5.58E+00	2.26E+00	9.01E-01	3.16E+00	2.24E+00	4.51E+00	1.41E+00	7.02E-01
BARIUM	5.19E+01	4.72E+00	1.37E+00	7.62E-01	2.14E+00	NV	NV	#VALUE!	#VALUE!
BERYLLIUM	3.90E-01	1.76E-02	1.03E-02	2.83E-03	1.32E-02	NV	NV	#VALUE!	#VALUE!
CADMIUM	1.40E+00	1.08E+01	3.71E-02	1.75E+00	1.78E+00	1.47E+00	6.35E+00	1.22E+00	2.81E-01
CHROMIUM	4.59E+01	1.40E+01	1.21E+00	2.27E+00	3.48E+00	2.66E+00	1.56E+01	1.31E+00	2.23E-01
COBALT	2.18E+01	2.66E+00	5.77E-01	4.29E-01	1.01E+00	7.61E+00	1.83E+01	1.32E-01	5.49E-02
COPPER	5.79E+02	2.98E+02	1.53E+01	4.81E+01	6.34E+01	4.05E+00	3.49E+01	1.57E+01	1.82E+00
IRON	3.38E+04	2.64E+03	8.95E+02	4.25E+02	1.32E+03	1.00E+02	1.00E+03	1.32E+01	1.32E+00
LEAD	9.99E+02	2.12E+02	2.64E+01	3.42E+01	6.06E+01	1.63E+00	4.46E+01	3.72E+01	1.36E+00
MANGANESE	6.60E+02	3.73E+01	1.75E+01	6.02E+00	2.35E+01	1.79E+02	3.77E+02	1.31E-01	6.23E-02
MERCURY	1.70E-01	5.95E-01	4.50E-03	9.61E-02	1.01E-01	6.40E-03	6.40E-02	1.57E+01	1.57E+00
SELENIUM	6.30E-01	6.61E-01	1.67E-02	1.07E-01	1.23E-01	2.90E-01	8.20E-01	4.25E-01	1.50E-01
SILVER	2.10E-01	4.29E-01	5.56E-03	6.93E-02	7.49E-02	2.02E+00	6.05E+01	3.71E-02	1.24E-03
VANADIUM	3.30E+01	1.39E+00	8.73E-01	2.24E-01	1.10E+00	3.44E-01	1.70E+00	3.19E+00	6.45E-01
ZINC	2.17E+02	4.99E+02	5.74E+00	8.06E+01	8.64E+01	6.61E+01	1.71E+02	1.31E+00	5.05E-01
Semivolatile Organics									
1,1-BIPHENYL	3.00E-01	3.00E-01	7.94E-03	4.84E-02	5.64E-02	NV	NV	#VALUE!	#VALUE!
2-METHYLNAPHTHALENE	1.40E+00	4.26E+00	3.71E-02	6.87E-01	7.24E-01	2.00E+00	2.00E+01	3.62E-01	3.62E-02
ACENAPHTHENE	1.50E+01	2.21E+01	3.97E-01	3.56E+00	3.96E+00	2.00E+00	2.00E+01	1.98E+00	1.98E-01
ACENAPHTHYLENE	1.20E+00	2.75E+01	3.18E-02	4.43E+00	4.47E+00	2.00E+00	2.00E+01	2.23E+00	2.23E-01
ANTHRACENE	1.60E+01	3.87E+01	4.23E-01	6.25E+00	6.67E+00	2.00E+00	2.00E+01	3.34E+00	3.34E-01
BENZO(A)ANTHRACENE	9.10E+01	1.45E+02	2.41E+00	2.34E+01	2.58E+01	2.00E+00	2.00E+01	1.29E+01	1.29E+00
BENZO(A)PYRENE	1.20E+02	1.60E+02	3.18E+00	2.58E+01	2.89E+01	2.00E+00	2.00E+01	1.45E+01	1.45E+00
BENZO(B)FLUORANTHENE	1.30E+02	3.38E+02	3.44E+00	5.45E+01	5.80E+01	2.00E+00	2.00E+01	2.90E+01	2.90E+00
BENZO(G,H,I)PERYLENE	7.80E+01	2.29E+02	2.06E+00	3.70E+01	3.91E+01	2.00E+00	2.00E+01	1.95E+01	1.95E+00
BENZO(K)FLUORANTHENE	4.70E+01	1.22E+02	1.24E+00	1.97E+01	2.10E+01	2.00E+00	2.00E+01	1.05E+01	1.05E+00
CARBAZOLE	1.10E+01	1.10E+01	2.91E-01	1.78E+00	2.07E+00	2.00E+00	2.00E+01	1.03E+00	1.03E-01
CHRYSENE	1.00E+02	2.29E+02	2.65E+00	3.70E+01	3.96E+01	2.00E+00	2.00E+01	1.98E+01	1.98E+00
DIBENZO(A,H)ANTHRACENE	2.20E+01	5.08E+01	5.82E-01	8.20E+00	8.78E+00	2.00E+00	2.00E+01	4.39E+00	4.39E-01
DIBENZOFURAN	3.50E+00	3.50E+00	9.26E-02	5.65E-01	6.57E-01	2.00E+00	2.00E+01	3.29E-01	3.29E-02
FLUORANTHENE	1.10E+02	3.34E+02	2.91E+00	5.40E+01	5.69E+01	2.00E+00	2.00E+01	2.84E+01	2.84E+00
FLUORENE	6.10E+00	5.84E+01	1.61E-01	9.42E+00	9.58E+00	2.00E+00	2.00E+01	4.79E+00	4.79E-01
INDENO(1,2,3-CD)PYRENE	8.10E+01	2.32E+02	2.14E+00	3.74E+01	3.95E+01	2.00E+00	2.00E+01	1.98E+01	1.98E+00
N-NITROSODIPHENYLAMINE	9.20E-01	9.20E-01	2.43E-02	1.48E-01	1.73E-01	NV	NV	#VALUE!	#VALUE!
NAPHTHALENE	3.70E+00	1.63E+01	9.79E-02	2.63E+00	2.73E+00	2.00E+00	2.00E+01	1.36E+00	1.36E-01
PHENANTHRENE	6.30E+01	1.08E+02	1.67E+00	1.75E+01	1.92E+01	2.00E+00	2.00E+01	9.58E+00	9.58E-01
PYRENE	1.20E+02	2.10E+02	3.18E+00	3.39E+01	3.71E+01	2.00E+00	2.00E+01	1.85E+01	1.85E+00

APPENDIX F TABLE 14
AMERICAN ROBIN - CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	Max Soil Concentration (mg/kg)	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Inverts.	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Volatile Organics									
ACETONE	7.60E-02	7.60E-02	2.01E-03	1.23E-02	1.43E-02	NV	NV	#VALUE!	#VALUE!
TETRACHLOROETHENE	1.10E-03	1.10E-03	2.91E-05	1.78E-04	2.07E-04	NV	NV	#VALUE!	#VALUE!
4,4'-DDD	3.60E-03	6.31E-02	9.53E-05	1.02E-02	1.03E-02	2.27E-01	2.70E+00	4.53E-02	3.81E-03
4,4'-DDE	3.80E-02	6.69E-01	1.01E-03	1.08E-01	1.09E-01	2.27E-01	2.70E+00	4.80E-01	4.04E-02
4,4'-DDT	6.20E-02	7.47E-01	1.64E-03	1.21E-01	1.22E-01	2.27E-01	2.70E+00	5.38E-01	4.53E-02
ALPHA-BHC	9.30E-04	4.65E-03	2.46E-05	7.50E-04	7.75E-04	5.60E-01	2.25E+00	1.38E-03	3.44E-04
ALPHA-CHLORDANE	3.80E-03	1.90E-02	1.01E-04	3.07E-03	3.17E-03	2.14E+00	1.07E+01	1.48E-03	2.96E-04
AROCLOR-1260	4.50E+01	7.16E+02	1.19E+00	1.16E+02	1.17E+02	1.80E-01	1.80E+00	6.48E+02	6.48E+01
DIELDRIN	1.90E-01	2.79E+00	5.03E-03	4.51E-01	4.56E-01	7.09E-02	8.00E-01	6.43E+00	5.70E-01
ENDOSULFAN I	1.20E-03	1.20E-03	3.18E-05	1.94E-04	2.25E-04	1.00E+01	1.00E+02	2.25E-05	2.25E-06
ENDOSULFAN II	4.80E-01	4.80E-01	1.27E-02	7.75E-02	9.02E-02	1.00E+01	1.00E+02	9.02E-03	9.02E-04
ENDOSULFAN SULFATE	5.90E-03	5.90E-03	1.56E-04	9.52E-04	1.11E-03	1.00E+01	1.00E+02	1.11E-04	1.11E-05
ENDRIN	2.00E-01	7.20E-01	5.29E-03	1.16E-01	1.21E-01	1.04E-02	1.04E-01	1.17E+01	1.17E+00
ENDRIN ALDEHYDE	6.30E-04	2.27E-03	1.67E-05	3.66E-04	3.83E-04	1.04E-02	1.04E-01	3.70E-02	3.70E-03
ENDRIN KETONE	8.70E-04	3.13E-03	2.30E-05	5.05E-04	5.28E-04	1.04E-02	1.04E-01	5.11E-02	5.11E-03
GAMMA-BHC (LINDANE)	5.30E-03	2.65E-02	1.40E-04	4.28E-03	4.42E-03	2.00E+00	2.00E+01	2.21E-03	2.21E-04
GAMMA-CHLORDANE	1.30E-02	6.50E-02	3.44E-04	1.05E-02	1.08E-02	2.14E+00	1.07E+01	5.06E-03	1.01E-03
HEPTACHLOR EPOXIDE	1.40E-03	4.20E-03	3.71E-05	6.78E-04	7.15E-04	NV	NV	#VALUE!	#VALUE!
TOTAL DDD/DDE/DDT	9.56E-02	1.07E+00	2.53E-03	1.73E-01	1.75E-01	2.27E-01	2.70E+00	7.72E-01	6.49E-02
Petroleum Hydrocarbons									
DIESEL RANGE ORGANICS	5.60E+03	5.60E+03	1.48E+02	9.04E+02	1.05E+03	NV	NV	#VALUE!	#VALUE!

Cells are shaded if the EEQ is greater than 1.0.

Body Weight = (BW)	7.730E-02	kg
Food Ingestion Rate = (If)	1.247E-02	kg/day
Soil Ingestion Rate = (Is)	2.046E-03	kg/day
Home Range = (HR)	Assume 100% on si	
Contaminated Area = (CA)	Assume equal to home range	

H=HR/CA (Assume = to 1 for maximum exposure)

Dose (surface soil) = (Cs * Is)(H)/BW
Dose (invertebrates) = (Ci * If)(H)/BW
Total Dose = Dose (surface soil) + Dose (invertebrates)

Definitions:
HQ - Hazard Quotient
NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
Cs = Contaminant concentration in soil
Ci = Contaminant conc. in soil invertebrates (=soil conc. * Biotransfer Factor)
NV = No value available
#VALUE! = Value not able to be calculated

APPENDIX F TABLE 15
AMERICAN ROBIN - LESS CONSERVATIVE
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	95% UCL Soil Concentration (mg/kg)[1]	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Inverts.	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Explosives									
2,4-DINITROTOLUENE	1.50E-01	1.50E-01	1.42E-03	2.22E-02	2.36E-02	1.00E+00	5.00E+00	2.36E-02	4.72E-03
NITROGLYCERIN	1.05E+01	1.05E+01	9.93E-02	1.55E+00	1.65E+00	NV	NV	#VALUE!	#VALUE!
Inorganics									
ANTIMONY	2.40E+00	2.40E+00	2.27E-02	3.55E-01	3.77E-01	NV	NV	#VALUE!	#VALUE!
ARSENIC	4.20E+01	3.38E+00	3.97E-01	4.99E-01	8.96E-01	2.24E+00	4.51E+00	4.00E-01	1.99E-01
BARIUM	3.03E+01	2.76E+00	2.86E-01	4.07E-01	6.94E-01	NV	NV	#VALUE!	#VALUE!
CADMIUM	7.60E-01	6.66E+00	7.19E-03	9.84E-01	9.91E-01	1.47E+00	6.35E+00	6.75E-01	1.56E-01
CHROMIUM	2.86E+01	8.75E+00	2.70E-01	1.29E+00	1.56E+00	2.66E+00	1.56E+01	5.88E-01	1.00E-01
COBALT	1.59E+01	1.94E+00	1.50E-01	2.87E-01	4.37E-01	7.61E+00	1.83E+01	5.74E-02	2.38E-02
COPPER	2.74E+02	1.41E+02	2.59E+00	2.08E+01	2.34E+01	4.05E+00	3.49E+01	5.79E+00	6.72E-01
IRON	2.93E+04	1.05E+03	2.77E+02	1.56E+02	4.33E+02	1.00E+02	1.00E+03	4.33E+00	4.33E-01
LEAD	5.31E+02	1.27E+02	5.02E+00	1.88E+01	2.38E+01	1.63E+00	4.46E+01	1.46E+01	5.34E-01
MANGANESE	4.99E+02	3.08E+01	4.72E+00	4.55E+00	9.27E+00	1.79E+02	3.77E+02	5.18E-02	2.46E-02
MERCURY	8.00E-02	4.62E-01	7.56E-04	6.82E-02	6.90E-02	6.40E-03	6.40E-02	1.08E+01	1.08E+00
SELENIUM	4.50E-01	5.17E-01	4.25E-03	7.63E-02	8.06E-02	2.90E-01	8.20E-01	2.78E-01	9.83E-02
SILVER	1.00E-01	2.05E-01	9.45E-04	3.02E-02	3.12E-02	2.02E+00	6.05E+01	1.54E-02	5.15E-04
VANADIUM	2.35E+01	9.87E-01	2.22E-01	1.46E-01	3.68E-01	3.44E-01	1.70E+00	1.07E+00	2.16E-01
ZINC	1.48E+02	4.41E+02	1.40E+00	6.51E+01	6.65E+01	6.61E+01	1.71E+02	1.01E+00	3.89E-01
Semivolatile Organics									
1,1-BIPHENYL	4.82E-01	4.82E-01	4.56E-03	7.12E-02	7.58E-02	NV	NV	#VALUE!	#VALUE!
2-METHYLNAPHTHALENE	5.22E-01	1.59E+00	4.93E-03	2.34E-01	2.39E-01	2.00E+00	2.00E+01	1.20E-01	1.20E-02
ACENAPHTHENE	2.40E+00	3.53E+00	2.27E-02	5.21E-01	5.44E-01	2.00E+00	2.00E+01	2.72E-01	2.72E-02
ACENAPHTHYLENE	5.02E-01	1.15E+01	4.74E-03	1.70E+00	1.70E+00	2.00E+00	2.00E+01	8.51E-01	8.51E-02
ANTHRACENE	2.57E+00	6.22E+00	2.43E-02	9.19E-01	9.43E-01	2.00E+00	2.00E+01	4.72E-01	4.72E-02
BENZO(A)ANTHRACENE	1.54E+01	2.45E+01	1.46E-01	3.62E+00	3.76E+00	2.00E+00	2.00E+01	1.88E+00	1.88E-01
BENZO(A)PYRENE	2.12E+01	2.82E+01	2.00E-01	4.17E+00	4.37E+00	2.00E+00	2.00E+01	2.18E+00	2.18E-01
BENZO(B)FLUORANTHENE	2.04E+01	5.30E+01	1.93E-01	7.84E+00	8.03E+00	2.00E+00	2.00E+01	4.01E+00	4.01E-01
BENZO(G,H,I)PERYLENE	2.77E+01	8.14E+01	2.62E-01	1.20E+01	1.23E+01	2.00E+00	2.00E+01	6.15E+00	6.15E-01
BENZO(K)FLUORANTHENE	7.82E+00	2.03E+01	7.39E-02	3.00E+00	3.08E+00	2.00E+00	2.00E+01	1.54E+00	1.54E-01
CARBAZOLE	1.87E+00	1.87E+00	1.77E-02	2.76E-01	2.94E-01	2.00E+00	2.00E+01	1.47E-01	1.47E-02
CHRYSENE	1.57E+01	3.60E+01	1.48E-01	5.31E+00	5.46E+00	2.00E+00	2.00E+01	2.73E+00	2.73E-01
DIBENZO(A,H)ANTHRACENE	4.77E+00	1.10E+01	4.51E-02	1.63E+00	1.67E+00	2.00E+00	2.00E+01	8.36E-01	8.36E-02
DIBENZOFURAN	6.51E-01	6.51E-01	6.15E-03	9.62E-02	1.02E-01	2.00E+00	2.00E+01	5.12E-02	5.12E-03
FLUORANTHENE	1.92E+01	5.84E+01	1.82E-01	8.62E+00	8.80E+00	2.00E+00	2.00E+01	4.40E+00	4.40E-01
FLUORENE	1.07E+00	1.02E+01	1.01E-02	1.51E+00	1.52E+00	2.00E+00	2.00E+01	7.61E-01	7.61E-02
INDENO(1,2,3-CD)PYRENE	1.30E+01	3.72E+01	1.23E-01	5.49E+00	5.62E+00	2.00E+00	2.00E+01	2.81E+00	2.81E-01
N-NITROSODIPHENYLAMINE	5.60E-01	5.60E-01	5.29E-03	8.27E-02	8.80E-02	NV	NV	#VALUE!	#VALUE!
NAPHTHALENE	9.32E-01	4.10E+00	8.81E-03	6.06E-01	6.15E-01	2.00E+00	2.00E+01	3.07E-01	3.07E-02
PHENANTHRENE	1.66E+01	2.86E+01	1.57E-01	4.22E+00	4.37E+00	2.00E+00	2.00E+01	2.19E+00	2.19E-01
PYRENE	3.37E+01	5.90E+01	3.19E-01	8.71E+00	9.03E+00	2.00E+00	2.00E+01	4.52E+00	4.52E-01

APPENDIX F TABLE 15
AMERICAN ROBIN - LESS CONSERVATIVE
TERRESTRIAL WILDLIFE MODEL HAZARD QUOTIENT CALCULATION
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Parameter	95% UCL Soil Concentration (mg/kg)[1]	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day) from: Surface Soil	Dose (mg/kg/day) from: Inverts.	Total Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL HQ	LOAEL HQ
Volatile Organics									
ACETONE	2.21E-02	2.21E-02	2.09E-04	3.26E-03	3.47E-03	NV	NV	#VALUE!	#VALUE!
TETRACHLOROETHENE	1.10E-03	1.10E-03	1.04E-05	1.62E-04	1.73E-04	NV	NV	#VALUE!	#VALUE!
4,4'-DDD	2.20E-03	4.47E-02	2.08E-05	6.61E-03	6.63E-03	2.27E-01	2.70E+00	2.92E-02	2.46E-03
4,4'-DDE	1.62E-02	3.16E-01	1.53E-04	4.67E-02	4.68E-02	2.27E-01	2.70E+00	2.06E-01	1.73E-02
4,4'-DDT	2.07E-02	2.88E-01	1.96E-04	4.26E-02	4.27E-02	2.27E-01	2.70E+00	1.88E-01	1.58E-02
ALPHA-BHC	7.00E-04	3.50E-03	6.62E-06	5.17E-04	5.24E-04	5.60E-01	2.25E+00	9.35E-04	2.33E-04
ALPHA-CHLORDANE	6.10E-04	3.05E-03	5.77E-06	4.51E-04	4.56E-04	2.14E+00	1.07E+01	2.13E-04	4.26E-05
AROCLOR-1260	4.08E+01	2.72E+02	3.86E-01	4.02E+01	4.06E+01	1.80E-01	1.80E+00	2.25E+02	2.25E+01
DIELDRIN	1.70E-01	2.50E+00	1.61E-03	3.69E-01	3.71E-01	7.09E-02	8.00E-01	5.23E+00	4.63E-01
ENDOSULFAN I	2.70E-04	2.70E-04	2.55E-06	3.99E-05	4.24E-05	1.00E+01	1.00E+02	4.24E-06	4.24E-07
ENDOSULFAN II	1.17E-01	1.17E-01	1.11E-03	1.73E-02	1.84E-02	1.00E+01	1.00E+02	1.84E-03	1.84E-04
ENDOSULFAN SULFATE	3.05E-03	3.05E-03	2.88E-05	4.51E-04	4.79E-04	1.00E+01	1.00E+02	4.79E-05	4.79E-06
ENDRIN	6.25E-02	2.25E-01	5.91E-04	3.32E-02	3.38E-02	1.04E-02	1.04E-01	3.27E+00	3.27E-01
ENDRIN ALDEHYDE	6.30E-04	2.27E-03	5.96E-06	3.35E-04	3.41E-04	1.04E-02	1.04E-01	3.29E-02	3.29E-03
ENDRIN KETONE	8.70E-04	3.13E-03	8.23E-06	4.63E-04	4.71E-04	1.04E-02	1.04E-01	4.55E-02	4.55E-03
GAMMA-BHC (LINDANE)	1.80E-03	9.00E-03	1.70E-05	1.33E-03	1.35E-03	2.00E+00	2.00E+01	6.73E-04	6.73E-05
GAMMA-CHLORDANE	4.60E-03	2.30E-02	4.35E-05	3.40E-03	3.44E-03	2.14E+00	1.07E+01	1.61E-03	3.22E-04
HEPTACHLOR EPOXIDE	5.80E-04	1.74E-03	5.48E-06	2.57E-04	2.63E-04	NV	NV	#VALUE!	#VALUE!
TOTAL DDD/DDE/DDT	5.29E-02	5.92E-01	5.00E-04	8.75E-02	8.80E-02	2.27E-01	2.70E+00	3.88E-01	3.26E-02
Petroleum Hydrocarbons									
DIESEL RANGE ORGANICS	3.08E+03	3.08E+03	2.91E+01	4.55E+02	4.84E+02	NV	NV	#VALUE!	#VALUE!

1 - The average value was used for dioxins because a 95% UCL was not able to be calculated due to less than 10 samples.
Cells are shaded if the EEQ is greater than 1.0.

Body Weight = (BW)	8.040E-02	kg
Food Ingestion Rate = (If)	1.188E-02	kg/day
Soil Ingestion Rate = (Is)	7.601E-04	kg/day
Home Range = (HR)	6.095E-01	acres
Contaminated Area = (CA)	Assume equal to home range	

H=HR/CA (Assume = to 1 for maximum exposure)

Definitions:
HQ - Hazard Quotient
NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
Cs = Contaminant concentration in soil
Ci = Contaminant conc. in soil invertebrates (=soil conc. * Biotransfer Factor)

Dose (surface soil) = (Cs * Is)(H)/BW
Dose (invertebrates) = (Ci * If)(H)/BW
Total Dose = Dose (surface soil) + Dose (invertebrates)

APPENDIX F TABLE 16

CHEMICAL CONCENTRATIONS IN 0-6 INCHES SEDIMENT AND TISSUE
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Sediment Concentrations (mg/kg)					Fish/Invertebrate Bioaccumulation Factors		Fish Tissue Concentrations (mg/kg)	
	Maximum Detection	Average All	Average of Positive Detections	95% UCL	Average/UCL[(1)]	Conservative	Average	Maximum Detection (Conservative)	Average
Metals									
ALUMINUM	4720	3564	3564	3770	3770	1.00E+00	1.00E+00	4.72E+03	3.77E+03
ANTIMONY	1.6	0.50	0.74	0.65	0.65	1.00E+00	1.00E+00	1.60E+00	6.50E-01
ARSENIC	8.9	3.1	3.1	4.0	4.0	6.90E-01	1.43E-01	6.14E+00	5.72E-01
BARIUM	13.9	7.7	7.7	8.6	8.6	1.00E+00	1.00E+00	1.39E+01	8.60E+00
BERYLLIUM	0.28	0.18	0.18	0.2	0.2	1.00E+00	1.00E+00	2.80E-01	2.00E-01
CADMIUM	0.21	0.15	0.15	0.17	0.17	7.99E+00	6.00E-01	1.68E+00	1.02E-01
CHROMIUM	13.8	10	10	11.0	11.0	4.68E-01	1.00E-01	6.46E+00	1.10E+00
COBALT	9.3	3.45	3.45	4.2	4.2	1.00E+00	1.00E+00	9.30E+00	4.20E+00
COPPER	207	19	19	63	63	5.25E+00	1.56E+00	1.09E+03	9.87E+01
IRON	35200	12216	12216	15200	15200	1.00E+00	1.00E+00	3.52E+04	1.52E+04
LEAD	424	87	87	134	134	6.07E-01	7.10E-02	2.57E+02	9.51E+00
MANGANESE	437	135	135	170	170	1.00E+00	1.00E+00	4.37E+02	1.70E+02
NICKEL	24	9.5	9.5	12	12	2.32E+00	4.86E-01	5.48E+01	5.59E+00
SELENIUM	0.4	0.15	0.27	NA	0.15	1.00E+00	1.00E+00	4.00E-01	1.50E-01
SILVER	0.11	0.08	0.10	NA	0.08	1.00E+00	1.00E+00	1.10E-01	8.00E-02
VANADIUM	18	12	12	13.3	13.3	1.00E+00	1.00E+00	1.80E+01	1.33E+01
ZINC	99.7	43	43	50.9	50.9	7.53E+00	1.94E+00	7.50E+02	9.85E+01
Semivolatile Organics									
ACENAPHTHENE	0.11	0.12	0.11	NA	0.11	2.90E-01	2.90E-01	4.59E-01	4.59E-01
ANTHRACENE	0.16	0.12	0.10	NA	0.12	2.90E-01	2.90E-01	6.68E-01	4.96E-01
BENZO(A)ANTHRACENE	0.82	0.21	0.32	0.35	0.35	2.90E-01	2.90E-01	3.42E+00	1.47E+00
BENZO(A)PYRENE	1.10	0.27	0.78	NA	0.27	2.90E-01	2.90E-01	4.59E+00	1.13E+00
BENZO(B)FLUORANTHENE	1.20	0.27	0.57	NA	0.27	2.90E-01	2.90E-01	5.01E+00	1.14E+00
BENZO(G,H,I)PERYLENE	0.83	0.24	0.38	0.41	0.41	2.90E-01	2.90E-01	3.47E+00	1.70E+00
BENZO(K)FLUORANTHENE	0.44	0.16	0.29	NA	0.15	2.90E-01	2.90E-01	1.84E+00	6.29E-01
CHRYSENE	0.93	0.24	0.38	0.41	0.41	2.90E-01	2.90E-01	3.88E+00	1.70E+00
FLUORANTHENE	1.10	0.26	0.42	0.47	0.47	2.90E-01	2.90E-01	4.59E+00	1.98E+00
FLUORENE	0.08	0.12	0.08	NA	0.08	2.90E-01	2.90E-01	3.38E-01	3.38E-01
INDENO(1,2,3-CD)PYRENE	0.91	0.24	0.67	0.61	0.61	2.90E-01	2.90E-01	3.80E+00	2.54E+00
PYRENE	1.10	0.26	0.37	0.48	0.48	2.90E-01	2.90E-01	4.59E+00	1.98E+00

(1) Value is the 95% UCL unless the value is greater than the maximum detection or UCL could not be calculated (<3 detections). In that case the value is the average of all unless the value is greater than the maximum detection. In that case the value is the average of positive detections.
(2) Value is the 95% UCL unless the value is greater than the maximum detection. In that case the value is the average of all.

Percent TOC	1.00E+00
percent Lipids	1.44E+01

Invertebrate BSAFs used for inorganics

APPENDIX F TABLE 17
RACCOON - CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
SITE 08, NUSC DISPOSAL AREA, NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND

Chemical	Max Sed Conc. (mg/kg)	Fish Conc. (mg/kg)	Dose (mg/kg/d) from: Sediment	Dose (mg/kg/d) from: Fish	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
Metals									
ALUMINUM	4.72E+03	4.72E+03	2.87E+01	3.05E+02	3.33E+02	1.93E+00	1.93E+01	1.7E+02	1.7E+01
ANTIMONY	1.60E+00	1.60E+00	9.71E-03	1.03E-01	1.13E-01	5.90E-02	2.76E+00	1.9E+00	4.1E-02
ARSENIC	8.90E+00	6.14E+00	5.40E-02	3.97E-01	4.51E-01	1.04E+00	4.55E+00	4.3E-01	9.9E-02
BARIUM	1.39E+01	1.39E+01	8.44E-02	8.98E-01	9.82E-01	5.18E+01	8.27E+01	1.9E-02	1.2E-02
BERYLLIUM	2.80E-01	2.80E-01	1.70E-03	1.81E-02	1.98E-02	5.32E-01	6.73E-01	3.7E-02	2.9E-02
CADMIUM	2.10E-01	1.68E+00	1.27E-03	1.08E-01	1.10E-01	7.70E-01	6.90E+00	1.4E-01	1.6E-02
CHROMIUM	1.38E+01	6.46E+00	8.38E-02	4.17E-01	5.01E-01	2.40E+00	5.82E+01	2.1E-01	8.6E-03
COBALT	9.30E+00	9.30E+00	5.65E-02	6.01E-01	6.57E-01	7.33E+00	1.89E+01	9.0E-02	3.5E-02
COPPER	2.07E+02	1.09E+03	1.26E+00	7.02E+01	7.14E+01	5.82E+00	8.14E+01	1.2E+01	8.8E-01
IRON	3.52E+04	3.52E+04	2.14E+02	2.27E+03	2.49E+03	5.00E+01	5.00E+02	5.0E+01	5.0E+00
LEAD	4.24E+02	2.57E+02	2.57E+00	1.66E+01	1.92E+01	4.70E+00	1.86E+02	4.1E+00	1.0E-01
MANGANESE	4.37E+02	4.37E+02	2.65E+00	2.82E+01	3.09E+01	5.15E+01	1.46E+02	6.0E-01	2.1E-01
NICKEL	2.36E+01	5.48E+01	1.43E-01	3.54E+00	3.68E+00	1.70E+00	1.48E+01	2.2E+00	2.5E-01
SELENIUM	4.00E-01	4.00E-01	2.43E-03	2.58E-02	2.83E-02	2.00E-01	3.30E-01	1.4E-01	8.6E-02
SILVER	1.10E-01	1.10E-01	6.68E-04	7.10E-03	7.77E-03	6.02E+00	1.19E+02	1.3E-03	6.6E-05
VANADIUM	1.80E+01	1.80E+01	1.09E-01	1.16E+00	1.27E+00	4.16E+00	7.74E+00	3.1E-01	1.6E-01
ZINC	9.97E+01	7.50E+02	6.05E-01	4.85E+01	4.91E+01	7.54E+01	2.98E+02	6.5E-01	1.6E-01
Semivolatile Organics									
ACENAPHTHENE	1.10E-01	4.59E-01	6.68E-04	2.97E-02	3.03E-02	6.56E+01	3.56E+02	4.6E-04	8.5E-05
ANTHRACENE	1.60E-01	6.68E-01	9.71E-04	4.31E-02	4.41E-02	6.56E+01	3.56E+02	6.7E-04	1.2E-04
BENZO(A)ANTHRACENE	8.20E-01	3.42E+00	4.98E-03	2.21E-01	2.26E-01	6.15E-01	3.84E+01	3.7E-01	5.9E-03
BENZO(A)PYRENE	1.10E+00	4.59E+00	6.68E-03	2.97E-01	3.03E-01	6.15E-01	3.84E+01	4.9E-01	7.9E-03
BENZO(B)FLUORANTHENE	1.20E+00	5.01E+00	7.28E-03	3.24E-01	3.31E-01	6.15E-01	3.84E+01	5.4E-01	8.6E-03
BENZO(G,H,I)PERYLENE	8.30E-01	3.47E+00	5.04E-03	2.24E-01	2.29E-01	6.15E-01	3.84E+01	3.7E-01	6.0E-03
BENZO(K)FLUORANTHENE	4.40E-01	1.84E+00	2.67E-03	1.19E-01	1.21E-01	6.15E-01	3.84E+01	2.0E-01	3.2E-03
CHRYSENE	9.30E-01	3.88E+00	5.65E-03	2.51E-01	2.56E-01	6.15E-01	3.84E+01	4.2E-01	6.7E-03
FLUORANTHENE	1.10E+00	4.59E+00	6.68E-03	2.97E-01	3.03E-01	6.56E+01	3.56E+02	4.6E-03	8.5E-04
FLUORENE	8.10E-02	3.38E-01	4.92E-04	2.18E-02	2.23E-02	6.56E+01	3.56E+02	3.4E-04	6.3E-05
INDENO(1,2,3-CD)PYRENE	9.10E-01	3.80E+00	5.52E-03	2.45E-01	2.51E-01	6.15E-01	3.84E+01	4.1E-01	6.5E-03
PHENANTHRENE	7.50E-01	3.13E+00	4.55E-03	2.02E-01	2.07E-01	6.56E+01	3.56E+02	3.2E-03	5.8E-04
PYRENE	1.10E+00	4.59E+00	6.68E-03	2.97E-01	3.03E-01	6.15E-01	3.84E+01	4.9E-01	7.9E-03

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	3.67E+00	kg	Ci = Contaminant concentration in fish
Food Ingestion Rate = (If)	2.37E-01	kg/day	Cs = Contaminant concentration in sediment
Sediment Ingestion Rate = (Is)	2.23E-02	kg/day	H=HR/CA (Assume = to 1)
Home Range = (HR)	Assume 100% on site		Conc = Concentration
Contaminated Area = (CA)	Assume equal to home range		Sed = Sediment
Dose (sediment) = (Cs * Is)(H)/BW			LOAEL = Lowest Observed Adverse Effects Concentration
Dose (fish) = (Ci * If)(H)/BW			NOAEL = No Observed Adverse Effects Concentration
Total Dose = Dose (sediment) + Dose (fish)			

APPENDIX F TABLE 18
RACCOON - LESS CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
SITE 08, NUSC DISPOSAL AREA, NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND

Chemical	Avg (or 95% UCL) Sed Conc. (mg/kg)	Fish Conc. (mg/kg)	Dose (mg/kg/d) from: Sediment	Dose (mg/kg/d) from: Fish	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
Metals									
ALUMINUM	3.77E+03	3.77E+03	1.16E+01	1.23E+02	1.35E+02	1.93E+00	1.93E+01	7.0E+01	7.0E+00
ANTIMONY	6.50E-01	6.50E-01	1.99E-03	2.12E-02	2.32E-02	5.90E-02	2.76E+00	3.9E-01	8.4E-03
ARSENIC	4.00E+00	5.72E-01	1.23E-02	1.87E-02	3.09E-02	1.04E+00	4.55E+00	3.0E-02	6.8E-03
BARIUM	8.60E+00	8.60E+00	2.64E-02	2.81E-01	3.07E-01	5.18E+01	8.27E+01	5.9E-03	3.7E-03
CADMIUM	1.70E-01	1.02E-01	5.22E-04	3.33E-03	3.85E-03	7.70E-01	6.90E+00	5.0E-03	5.6E-04
CHROMIUM	1.10E+01	1.10E+00	3.38E-02	3.59E-02	6.97E-02	2.40E+00	5.82E+01	2.9E-02	1.2E-03
COBALT	4.20E+00	4.20E+00	1.29E-02	1.37E-01	1.50E-01	7.33E+00	1.89E+01	2.0E-02	7.9E-03
COPPER	6.34E+01	9.87E+01	1.95E-01	3.22E+00	3.42E+00	5.82E+00	8.14E+01	5.9E-01	4.2E-02
IRON	1.52E+04	1.52E+04	4.66E+01	4.96E+02	5.43E+02	5.00E+01	5.00E+02	1.1E+01	1.1E+00
LEAD	1.34E+02	9.51E+00	4.11E-01	3.11E-01	7.22E-01	4.70E+00	1.86E+02	1.5E-01	3.9E-03
MANGANESE	1.70E+02	1.70E+02	5.22E-01	5.55E+00	6.07E+00	5.15E+01	1.46E+02	1.2E-01	4.2E-02
NICKEL	1.15E+01	5.59E+00	3.53E-02	1.82E-01	2.18E-01	1.70E+00	1.48E+01	1.3E-01	1.5E-02
SELENIUM	1.50E-01	1.50E-01	4.60E-04	4.90E-03	5.36E-03	2.00E-01	3.30E-01	2.7E-02	1.6E-02
SILVER	8.00E-02	8.00E-02	2.46E-04	2.61E-03	2.86E-03	6.02E+00	1.19E+02	4.7E-04	2.4E-05
VANADIUM	1.33E+01	1.33E+01	4.08E-02	4.34E-01	4.75E-01	4.16E+00	7.74E+00	1.1E-01	6.1E-02
ZINC	5.09E+01	9.85E+01	1.56E-01	3.22E+00	3.37E+00	7.54E+01	2.98E+02	4.5E-02	1.1E-02
Semivolatile Organics									
ACENAPHTHENE	1.10E-01	4.59E-01	3.38E-04	1.50E-02	1.53E-02	6.56E+01	3.56E+02	2.3E-04	4.3E-05
ANTHRACENE	1.19E-01	4.96E-01	3.65E-04	1.62E-02	1.66E-02	6.56E+01	3.56E+02	2.5E-04	4.7E-05
BENZO(A)ANTHRACENE	3.52E-01	1.47E+00	1.08E-03	4.80E-02	4.91E-02	6.15E-01	3.84E+01	8.0E-02	1.3E-03
BENZO(A)PYRENE	2.69E-01	1.13E+00	8.27E-04	3.67E-02	3.76E-02	6.15E-01	3.84E+01	6.1E-02	9.8E-04
BENZO(B)FLUORANTHENE	2.73E-01	1.14E+00	8.37E-04	3.72E-02	3.80E-02	6.15E-01	3.84E+01	6.2E-02	9.9E-04
BENZO(G,H,I)PERYLENE	4.07E-01	1.70E+00	1.25E-03	5.55E-02	5.67E-02	6.15E-01	3.84E+01	9.2E-02	1.5E-03
BENZO(K)FLUORANTHENE	1.51E-01	6.29E-01	4.62E-04	2.05E-02	2.10E-02	6.15E-01	3.84E+01	3.4E-02	5.5E-04
CHRYSENE	4.07E-01	1.70E+00	1.25E-03	5.55E-02	5.67E-02	6.15E-01	3.84E+01	9.2E-02	1.5E-03
FLUORANTHENE	4.74E-01	1.98E+00	1.45E-03	6.46E-02	6.61E-02	6.56E+01	3.56E+02	1.0E-03	1.9E-04
FLUORENE	8.10E-02	3.38E-01	2.49E-04	1.10E-02	1.13E-02	6.56E+01	3.56E+02	1.7E-04	3.2E-05
INDENO(1,2,3-CD)PYRENE	6.09E-01	2.54E+00	1.87E-03	8.30E-02	8.49E-02	6.15E-01	3.84E+01	1.4E-01	2.2E-03
PHENANTHRENE	3.14E-01	1.31E+00	9.64E-04	4.28E-02	4.38E-02	6.56E+01	3.56E+02	6.7E-04	1.2E-04
PYRENE	4.75E-01	1.98E+00	1.46E-03	6.48E-02	6.62E-02	6.15E-01	3.84E+01	1.1E-01	1.7E-03

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	5.64E+00	kg
Food Ingestion Rate = (If)	1.84E-01	kg/day
Sediment Ingestion Rate = (Is)	1.73E-02	kg/day
Home Range = (HR)	1.56E+03	acres
Contaminated Area = (CA)	Assume equal to home range	

Dose (sediment) = (Cs * Is)(H)/BW
Dose (fish) = (Ci * If)(H)/BW
Total Dose = Dose (sediment) + Dose (fish)

Ci = Contaminant concentration in fish
Cs = Contaminant concentration in sediment
H=HR/CA (Assume = to 1)
Conc = Concentration
Sed = Sediment
LOAEL = Lowest Observed Adverse Effects Concentration
NOAEL = No Observed Adverse Effects Concentration

APPENDIX F TABLE 19
HERRING GULL - CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION - SEDIMENT 0 - 6 INCHES
MRP SITE 1, CARR POINT, NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Chemical	Max Sed. Conc. (mg/kg)	Fish Conc. (mg/kg)	Dose (mg/kg/d) from: Sediment	Dose (mg/kg/d) from: Fish	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
Metals									
ALUMINUM	4.72E+03	4.72E+03	1.40E+01	1.71E+02	1.85E+02	1.10E+02	1.10E+03	1.7E+00	1.7E-01
ANTIMONY	1.60E+00	1.60E+00	4.74E-03	5.78E-02	6.26E-02	NV	NV	#VALUE!	#VALUE!
ARSENIC	8.90E+00	6.14E+00	2.64E-02	2.22E-01	2.48E-01	2.24E+00	4.51E+00	1.1E-01	5.5E-02
BARIUM	1.39E+01	1.39E+01	4.12E-02	5.03E-01	5.44E-01	2.08E+01	4.17E+01	2.6E-02	1.3E-02
BERYLLIUM	2.80E-01	2.80E-01	8.30E-04	1.01E-02	1.10E-02	NV	NV	#VALUE!	#VALUE!
CADMIUM	2.10E-01	1.68E+00	6.23E-04	6.07E-02	6.13E-02	1.47E+00	6.35E+00	4.2E-02	9.7E-03
CHROMIUM	1.38E+01	6.46E+00	4.09E-02	2.33E-01	2.74E-01	2.66E+00	1.56E+01	1.0E-01	1.8E-02
COBALT	9.30E+00	9.30E+00	2.76E-02	3.36E-01	3.64E-01	7.61E+00	1.83E+01	4.8E-02	2.0E-02
COPPER	2.07E+02	1.09E+03	6.14E-01	3.93E+01	3.99E+01	4.05E+00	3.48E+01	9.9E+00	1.1E+00
IRON	3.52E+04	3.52E+04	1.04E+02	1.27E+03	1.38E+03	1.00E+02	1.00E+03	1.4E+01	1.4E+00
LEAD	4.24E+02	2.57E+02	1.26E+00	9.30E+00	1.06E+01	1.63E+00	4.46E+01	6.5E+00	2.4E-01
MANGANESE	4.37E+02	4.37E+02	1.30E+00	1.58E+01	1.71E+01	1.79E+02	3.77E+02	9.5E-02	4.5E-02
NICKEL	2.36E+01	5.48E+01	7.00E-02	1.98E+00	2.05E+00	6.71E+00	1.86E+01	3.1E-01	1.1E-01
SELENIUM	4.00E-01	4.00E-01	1.19E-03	1.45E-02	1.56E-02	4.00E-01	8.00E-01	3.9E-02	2.0E-02
SILVER	1.10E-01	1.10E-01	3.26E-04	3.98E-03	4.30E-03	2.02E+00	6.05E+01	2.1E-03	7.1E-05
VANADIUM	1.80E+01	1.80E+01	5.34E-02	6.51E-01	7.04E-01	3.44E-01	1.69E+00	2.0E+00	4.2E-01
ZINC	9.97E+01	7.50E+02	2.96E-01	2.71E+01	2.74E+01	6.61E+01	1.71E+02	4.1E-01	1.6E-01
Semivolatile Organics									
ACENAPHTHENE	1.10E-01	4.59E-01	3.26E-04	1.66E-02	1.69E-02	2.00E+00	2.00E+01	8.5E-03	8.5E-04
ANTHRACENE	1.60E-01	6.68E-01	4.74E-04	2.42E-02	2.46E-02	2.00E+00	2.00E+01	1.2E-02	1.2E-03
BENZO(A)ANTHRACENE	8.20E-01	3.42E+00	2.43E-03	1.24E-01	1.26E-01	2.00E+00	2.00E+01	6.3E-02	6.3E-03
BENZO(A)PYRENE	1.10E+00	4.59E+00	3.26E-03	1.66E-01	1.69E-01	2.00E+00	2.00E+01	8.5E-02	8.5E-03
BENZO(B)FLUORANTHENE	1.20E+00	5.01E+00	3.56E-03	1.81E-01	1.85E-01	2.00E+00	2.00E+01	9.2E-02	9.2E-03
BENZO(G,H,I)PERYLENE	8.30E-01	3.47E+00	2.46E-03	1.25E-01	1.28E-01	2.00E+00	2.00E+01	6.4E-02	6.4E-03
BENZO(K)FLUORANTHENE	4.40E-01	1.84E+00	1.30E-03	6.64E-02	6.77E-02	2.00E+00	2.00E+01	3.4E-02	3.4E-03
CHRYSENE	9.30E-01	3.88E+00	2.76E-03	1.40E-01	1.43E-01	2.00E+00	2.00E+01	7.2E-02	7.2E-03
FLUORANTHENE	1.10E+00	4.59E+00	3.26E-03	1.66E-01	1.69E-01	2.00E+00	2.00E+01	8.5E-02	8.5E-03
FLUORENE	8.10E-02	3.38E-01	2.40E-04	1.22E-02	1.25E-02	2.00E+00	2.00E+01	6.2E-03	6.2E-04
INDENO(1,2,3-CD)PYRENE	9.10E-01	3.80E+00	2.70E-03	1.37E-01	1.40E-01	2.00E+00	2.00E+01	7.0E-02	7.0E-03
PHENANTHRENE	7.50E-01	3.13E+00	2.22E-03	1.13E-01	1.15E-01	2.00E+00	2.00E+01	5.8E-02	5.8E-03
PYRENE	1.10E+00	4.59E+00	3.26E-03	1.66E-01	1.69E-01	2.00E+00	2.00E+01	8.5E-02	8.5E-03

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	9.51E-01	kg
Food Ingestion Rate = (If)	3.44E-02	kg/day
Sediment Ingestion Rate = (Is)	2.82E-03	kg/day
Home Range = (HR)	Assume 100% on site	
Contaminated Area = (CA)	Assume equal to home range	

Dose (sediment) = (Cs * Is)(H)/BW
Dose (fish) = (Ci * If)(H)/BW
Total Dose = Dose (sediment) + Dose (fish)

Ci = Contaminant concentration in fish
Cs = Contaminant concentration in sediment
H=HR/CA (Assume = to 1)
Conc = Concentration
Sed = Sediment
LOAEL = Lowest Observed Adverse Effects Concentration
NOAEL = No Observed Adverse Effects Concentration

NV - No Value
VALUE - Value could not be calculated

APPENDIX F TABLE 20
HERRING GULL - LESS CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION - SEDIMENT 0 - 6 INCHES
MRP SITE 1, CARR POINT, NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Chemical	Avg (or 95% UCL) Sed Conc. (mg/kg)	Fish Conc. (mg/kg)	Dose (mg/kg/d) from: Sediment	Dose (mg/kg/d) from: Fish	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
Metals									
ALUMINUM	3.77E+03	3.77E+03	9.51E+00	1.16E+02	1.25E+02	1.10E+02	1.10E+03	1.1E+00	1.1E-01
ANTIMONY	6.50E-01	6.50E-01	1.64E-03	2.00E-02	2.16E-02	NV	NV	#VALUE!	#VALUE!
ARSENIC	4.00E+00	5.72E-01	1.01E-02	1.76E-02	2.77E-02	2.24E+00	4.51E+00	1.2E-02	6.1E-03
BARIUM	8.60E+00	8.60E+00	2.17E-02	2.64E-01	2.86E-01	2.08E+01	4.17E+01	1.4E-02	6.9E-03
CADMIUM	1.70E-01	1.02E-01	4.29E-04	3.14E-03	3.56E-03	1.47E+00	6.35E+00	2.4E-03	5.6E-04
CHROMIUM	1.10E+01	1.10E+00	2.77E-02	3.38E-02	6.16E-02	2.66E+00	1.56E+01	2.3E-02	3.9E-03
COBALT	4.20E+00	4.20E+00	1.06E-02	1.29E-01	1.40E-01	7.61E+00	1.83E+01	1.8E-02	7.6E-03
COPPER	6.34E+01	9.87E+01	1.60E-01	3.03E+00	3.19E+00	4.05E+00	3.48E+01	7.9E-01	9.2E-02
IRON	1.52E+04	1.52E+04	3.83E+01	4.67E+02	5.06E+02	1.00E+02	1.00E+03	5.1E+00	5.1E-01
LEAD	1.34E+02	9.51E+00	3.38E-01	2.93E-01	6.30E-01	1.63E+00	4.46E+01	3.9E-01	1.4E-02
MANGANESE	1.70E+02	1.70E+02	4.29E-01	5.23E+00	5.66E+00	1.79E+02	3.77E+02	3.2E-02	1.5E-02
NICKEL	1.15E+01	5.59E+00	2.90E-02	1.72E-01	2.01E-01	6.71E+00	1.86E+01	3.0E-02	1.1E-02
SELENIUM	1.50E-01	1.50E-01	3.78E-04	4.61E-03	4.99E-03	4.00E-01	8.00E-01	1.2E-02	6.2E-03
SILVER	8.00E-02	8.00E-02	2.02E-04	2.46E-03	2.66E-03	2.02E+00	6.05E+01	1.3E-03	4.4E-05
VANADIUM	1.33E+01	1.33E+01	3.35E-02	4.09E-01	4.42E-01	3.44E-01	1.69E+00	1.3E+00	2.6E-01
ZINC	5.09E+01	9.85E+01	1.28E-01	3.03E+00	3.16E+00	6.61E+01	1.71E+02	4.8E-02	1.8E-02
Semivolatile Organics									
ACENAPHTHENE	1.10E-01	4.59E-01	2.77E-04	1.41E-02	1.44E-02	2.00E+00	2.00E+01	7.2E-03	7.2E-04
ANTHRACENE	1.19E-01	4.96E-01	3.00E-04	1.53E-02	1.56E-02	2.00E+00	2.00E+01	7.8E-03	7.8E-04
BENZO(A)ANTHRACENE	3.52E-01	1.47E+00	8.87E-04	4.52E-02	4.61E-02	2.00E+00	2.00E+01	2.3E-02	2.3E-03
BENZO(A)PYRENE	2.69E-01	1.13E+00	6.79E-04	3.46E-02	3.53E-02	2.00E+00	2.00E+01	1.8E-02	1.8E-03
BENZO(B)FLUORANTHENE	2.73E-01	1.14E+00	6.88E-04	3.50E-02	3.57E-02	2.00E+00	2.00E+01	1.8E-02	1.8E-03
BENZO(G,H,I)PERYLENE	4.07E-01	1.70E+00	1.03E-03	5.23E-02	5.33E-02	2.00E+00	2.00E+01	2.7E-02	2.7E-03
BENZO(K)FLUORANTHENE	1.51E-01	6.29E-01	3.80E-04	1.93E-02	1.97E-02	2.00E+00	2.00E+01	9.9E-03	9.9E-04
CHRYSENE	4.07E-01	1.70E+00	1.03E-03	5.23E-02	5.33E-02	2.00E+00	2.00E+01	2.7E-02	2.7E-03
FLUORANTHENE	4.74E-01	1.98E+00	1.20E-03	6.09E-02	6.21E-02	2.00E+00	2.00E+01	3.1E-02	3.1E-03
FLUORENE	8.10E-02	3.38E-01	2.04E-04	1.04E-02	1.06E-02	2.00E+00	2.00E+01	5.3E-03	5.3E-04
INDENO(1,2,3-CD)PYRENE	6.09E-01	2.54E+00	1.54E-03	7.82E-02	7.97E-02	2.00E+00	2.00E+01	4.0E-02	4.0E-03
PHENANTHRENE	3.14E-01	1.31E+00	7.92E-04	4.03E-02	4.11E-02	2.00E+00	2.00E+01	2.1E-02	2.1E-03
PYRENE	4.75E-01	1.98E+00	1.20E-03	6.10E-02	6.22E-02	2.00E+00	2.00E+01	3.1E-02	3.1E-03

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	1.09E+00	kg
Food Ingestion Rate = (If)	3.36E-02	kg/day
Sediment Ingestion Rate = (Is)	2.75E-03	kg/day
Home Range = (HR)	1.00E+01	km-radius
Contaminated Area = (CA)	Assume equal to home range	

Dose (sediment) = (Cs * Is)(H)/BW
Dose (fish) = (Ci * If)(H)/BW
Total Dose = Dose (sediment) + Dose (fish)

Ci = Contaminant concentration in fish
Cs = Contaminant concentration in sediment
H=HR/CA (Assume = to 1)
Conc = Concentration
Sed = Sediment
LOAEL = Lowest Observed Adverse Effects Concentration
NOAEL = No Observed Adverse Effects Concentration

NV - No Value
VALUE - Value could not be calculated

APPENDIX F TABLE 21

CHEMICAL CONCENTRATIONS IN SEDIMENT AND TISSUE
SEDIMENT >6 INCHES
MRP SITE 1, CARR POINT
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Sediment Concentrations (mg/kg)					Fish/Invertebrate Bioaccumulation Factors		Fish Tissue Concentrations (mg/kg)(3)	
	Maximum Detection	Average All	Average of Positive Detections	95% UCL	Average/UCL(1)	Conservative	Average	Maximum Detection (Conservative)	Average
Metals									
ALUMINUM	5070	3573	3573	3830	3830	1.00E+00	1.00E+00	5.07E+03	3.83E+03
ANTIMONY	3.3	0.62	0.83	0.96	0.96	1.00E+00	1.00E+00	3.30E+00	9.60E-01
ARSENIC	19	3.89	3.89	9.1	9.1	6.90E-01	1.43E-01	1.34E+01	1.30E+00
BARIUM	19.1	7.69	7.69	9.3	9.3	1.00E+00	1.00E+00	1.91E+01	9.30E+00
BERYLLIUM	0.33	0.18	0.18	0.21	0.21	1.00E+00	1.00E+00	3.30E-01	2.10E-01
CADMIUM	0.22	0.17	0.15	0.17	0.17	7.99E+00	6.00E-01	1.76E+00	1.02E-01
CHROMIUM	17.1	10.05	10.05	11.1	11.1	4.68E-01	1.00E-01	8.00E+00	1.11E+00
COBALT	19	4.3	4.3	9.3	9.3	1.00E+00	1.00E+00	1.88E+01	9.30E+00
COPPER	48	11	11	26	26	5.25E+00	1.56E+00	2.51E+02	3.98E+01
IRON	44200	13203	13203	25600	25600	1.00E+00	1.00E+00	4.42E+04	2.56E+04
LEAD	223	74	74	118	118	6.07E-01	7.10E-02	1.35E+02	8.38E+00
MANGANESE	2190	258	258	867	867	1.00E+00	1.00E+00	2.19E+03	8.67E+02
NICKEL	47	13	13	28	28	2.32E+00	4.86E-01	1.10E+02	1.37E+01
SELENIUM	0.33	0.23	0.33	NA	0.23	1.00E+00	1.00E+00	3.30E-01	2.30E-01
SILVER	0.058	0.09	0.06	NA	0.058	1.00E+00	1.00E+00	5.80E-02	5.80E-02
VANADIUM	17.2	11.67	11.67	12.8	12.8	1.00E+00	1.00E+00	1.72E+01	1.28E+01
ZINC	72.4	39.07	39.07	45.2	45.2	7.53E+00	1.94E+00	5.45E+02	8.75E+01
Semivolatile Organics									
ACENAPHTHENE	0.07	0.10	0.06	NA	0.06	2.90E-01	2.90E-01	2.76E-01	2.69E-01
ANTHRACENE	0.09	0.11	0.09	NA	0.09	2.90E-01	2.90E-01	3.93E-01	3.86E-01
BENZO(A)ANTHRACENE	0.50	0.23	0.34	NA	0.23	2.90E-01	2.90E-01	2.09E+00	9.54E-01
BENZO(A)PYRENE	0.65	0.29	0.62	NA	0.29	2.90E-01	2.90E-01	2.71E+00	1.20E+00
BENZO(B)FLUORANTHENE	0.64	0.29	0.64	NA	0.29	2.90E-01	2.90E-01	2.67E+00	1.23E+00
BENZO(G,H,I)PERYLENE	0.53	0.27	0.42	NA	0.27	2.90E-01	2.90E-01	2.21E+00	1.13E+00
BENZO(K)FLUORANTHENE	0.24	0.16	0.23	NA	0.16	2.90E-01	2.90E-01	1.00E+00	6.58E-01
CHRYSENE	0.65	0.27	0.41	NA	0.27	2.90E-01	2.90E-01	2.71E+00	1.11E+00
DIBENZO(A,H)ANTHRACENE	0.28	0.15	0.28	NA	0.15	2.90E-01	2.90E-01	1.17E+00	6.16E-01
FLUORANTHENE	0.68	0.31	0.49	NA	0.31	2.90E-01	2.90E-01	2.84E+00	1.27E+00
FLUORENE	0.04	0.09	0.04	NA	0.04	2.90E-01	2.90E-01	1.63E-01	1.63E-01
INDENO(1,2,3-CD)PYRENE	0.59	0.28	0.59	NA	0.28	2.90E-01	2.90E-01	2.46E+00	1.15E+00
PHENANTHRENE	0.43	0.20	0.24	0.34	0.34	2.90E-01	2.90E-01	1.80E+00	1.41E+00
PYRENE	0.65	0.30	0.48	NA	0.30	2.90E-01	2.90E-01	2.71E+00	1.25E+00

(1) Value is the 95% UCL unless the value is greater than the maximum detection. In that case the value is the average of all unless the value is greater than the maximum detection. In that case the value is the average of positive detections.
(2) Value is the 95% UCL unless the value is greater than the maximum detection. In that case the value is the average of all.
(3) Fish concentrations are actual tissue concentrations. The average concentrations are the average of positive detections.
Non-detected parameters are assigned a value of 0.

Percent TOC	1.00E+00
percent Lipids	1.44E+01
Invertebrate BSAFs used for inorganics	

APPENDIX F TABLE 22
RACCOON - CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION - >6 INCHES SEDIMENT
MRP SITE 1, CARR POINT, NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Chemical	Max Sed Conc. (mg/kg)	Fish Conc. (mg/kg)	Dose (mg/kg/d) from: Sediment	Dose (mg/kg/d) from: Fish	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
Metals									
ALUMINUM	5.07E+03	5.07E+03	3.08E+01	3.27E+02	3.58E+02	1.93E+00	1.93E+01	1.9E+02	1.9E+01
ANTIMONY	3.30E+00	3.30E+00	2.00E-02	2.13E-01	2.33E-01	5.90E-02	2.76E+00	4.0E+00	8.4E-02
ARSENIC	1.94E+01	1.34E+01	1.18E-01	8.64E-01	9.82E-01	1.04E+00	4.55E+00	9.4E-01	2.2E-01
BARIUM	1.91E+01	1.91E+01	1.16E-01	1.23E+00	1.35E+00	5.18E+01	8.27E+01	2.6E-02	1.6E-02
BERYLLIUM	3.30E-01	3.30E-01	2.00E-03	2.13E-02	2.33E-02	5.32E-01	6.73E-01	4.4E-02	3.5E-02
CADMIUM	2.20E-01	1.76E+00	1.34E-03	1.14E-01	1.15E-01	7.70E-01	6.90E+00	1.5E-01	1.7E-02
CHROMIUM	1.71E+01	8.00E+00	1.04E-01	5.17E-01	6.21E-01	2.40E+00	5.82E+01	2.6E-01	1.1E-02
COBALT	1.88E+01	1.88E+01	1.14E-01	1.21E+00	1.33E+00	7.33E+00	1.89E+01	1.8E-01	7.0E-02
COPPER	4.79E+01	2.51E+02	2.91E-01	1.62E+01	1.65E+01	5.82E+00	8.14E+01	2.8E+00	2.0E-01
IRON	4.42E+04	4.42E+04	2.68E+02	2.85E+03	3.12E+03	5.00E+01	5.00E+02	6.2E+01	6.2E+00
LEAD	2.23E+02	1.35E+02	1.35E+00	8.74E+00	1.01E+01	4.70E+00	1.86E+02	2.1E+00	5.4E-02
MANGANESE	2.19E+03	2.19E+03	1.33E+01	1.41E+02	1.55E+02	5.15E+01	1.46E+02	3.0E+00	1.1E+00
NICKEL	4.74E+01	1.10E+02	2.88E-01	7.10E+00	7.39E+00	1.70E+00	1.48E+01	4.3E+00	5.0E-01
SELENIUM	3.30E-01	3.30E-01	2.00E-03	2.13E-02	2.33E-02	2.00E-01	3.30E-01	1.2E-01	7.1E-02
SILVER	5.80E-02	5.80E-02	3.52E-04	3.75E-03	4.10E-03	6.02E+00	1.19E+02	6.8E-04	3.5E-05
VANADIUM	1.72E+01	1.72E+01	1.04E-01	1.11E+00	1.22E+00	4.16E+00	7.74E+00	2.9E-01	1.6E-01
ZINC	7.24E+01	5.45E+02	4.39E-01	3.52E+01	3.56E+01	7.54E+01	2.98E+02	4.7E-01	1.2E-01
Semivolatile Organics									
ACENAPHTHENE	6.60E-02	2.76E-01	4.01E-04	1.78E-02	1.82E-02	6.56E+01	3.56E+02	2.8E-04	5.1E-05
ANTHRACENE	9.40E-02	3.93E-01	5.71E-04	2.53E-02	2.59E-02	6.56E+01	3.56E+02	4.0E-04	7.3E-05
BENZO(A)ANTHRACENE	5.00E-01	2.09E+00	3.04E-03	1.35E-01	1.38E-01	6.15E-01	3.84E+01	2.2E-01	3.6E-03
BENZO(A)PYRENE	6.50E-01	2.71E+00	3.95E-03	1.75E-01	1.79E-01	6.15E-01	3.84E+01	2.9E-01	4.7E-03
BENZO(B)FLUORANTHENE	6.40E-01	2.67E+00	3.88E-03	1.73E-01	1.76E-01	6.15E-01	3.84E+01	2.9E-01	4.6E-03
BENZO(G,H,I)PERYLENE	5.30E-01	2.21E+00	3.22E-03	1.43E-01	1.46E-01	6.15E-01	3.84E+01	2.4E-01	3.8E-03
BENZO(K)FLUORANTHENE	2.40E-01	1.00E+00	1.46E-03	6.47E-02	6.62E-02	6.15E-01	3.84E+01	1.1E-01	1.7E-03
CHRYSENE	6.50E-01	2.71E+00	3.95E-03	1.75E-01	1.79E-01	6.15E-01	3.84E+01	2.9E-01	4.7E-03
DIBENZO(A,H)ANTHRACENE	2.80E-01	1.17E+00	1.70E-03	7.55E-02	7.72E-02	6.15E-01	3.84E+01	1.3E-01	2.0E-03
FLUORANTHENE	6.80E-01	2.84E+00	4.13E-03	1.83E-01	1.88E-01	6.56E+01	3.56E+02	2.9E-03	5.3E-04
FLUORENE	3.90E-02	1.63E-01	2.37E-04	1.05E-02	1.08E-02	6.56E+01	3.56E+02	1.6E-04	3.0E-05
INDENO(1,2,3-CD)PYRENE	5.90E-01	2.46E+00	3.58E-03	1.59E-01	1.63E-01	6.15E-01	3.84E+01	2.6E-01	4.2E-03
PHENANTHRENE	4.30E-01	1.80E+00	2.61E-03	1.16E-01	1.19E-01	6.56E+01	3.56E+02	1.8E-03	3.3E-04
PYRENE	6.50E-01	2.71E+00	3.95E-03	1.75E-01	1.79E-01	6.15E-01	3.84E+01	2.9E-01	4.7E-03

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	3.67E+00	kg	Ci = Contaminant concentration in fish
Food Ingestion Rate = (If)	2.37E-01	kg/day	Cs = Contaminant concentration in sediment
Sediment Ingestion Rate = (Is)	2.23E-02	kg/day	H=HR/CA (Assume = to 1)
Home Range = (HR)	Assume 100% on site		Conc = Concentration
Contaminated Area = (CA)	Assume equal to home range		Sed = Sediment
Dose (sediment) = (Cs * Is)(H)/BW			LOAEL = Lowest Observed Adverse Effects Concentration
Dose (fish) = (Ci * If)(H)/BW			NOAEL = No Observed Adverse Effects Concentration
Total Dose = Dose (sediment) + Dose (fish)			

APPENDIX F TABLE 23
RACCOON - LESS CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION - >6 INCHES SEDIMENT
MRP SITE 1, CARR POINT, NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Chemical	Avg (or 95% UCL) Sed Conc. (mg/kg)	Fish Conc. (mg/kg)	Dose (mg/kg/d) from: Sediment	Dose (mg/kg/d) from: Fish	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
Metals									
ALUMINUM	3.83E+03	3.83E+03	1.18E+01	1.25E+02	1.37E+02	1.93E+00	1.93E+01	7.1E+01	7.1E+00
ANTIMONY	9.60E-01	9.60E-01	2.95E-03	3.13E-02	3.43E-02	5.90E-02	2.76E+00	5.8E-01	1.2E-02
ARSENIC	9.10E+00	1.30E+00	2.79E-02	4.25E-02	7.04E-02	1.04E+00	4.55E+00	6.8E-02	1.5E-02
BARIUM	9.30E+00	9.30E+00	2.85E-02	3.04E-01	3.32E-01	5.18E+01	8.27E+01	6.4E-03	4.0E-03
CADMIUM	1.70E-01	1.02E-01	5.22E-04	3.33E-03	3.85E-03	7.70E-01	6.90E+00	5.0E-03	5.6E-04
CHROMIUM	1.11E+01	1.11E+00	3.41E-02	3.62E-02	7.03E-02	2.40E+00	5.82E+01	2.9E-02	1.2E-03
COBALT	9.30E+00	9.30E+00	2.85E-02	3.04E-01	3.32E-01	7.33E+00	1.89E+01	4.5E-02	1.8E-02
COPPER	2.56E+01	3.98E+01	7.86E-02	1.30E+00	1.38E+00	5.82E+00	8.14E+01	2.4E-01	1.7E-02
IRON	2.56E+04	2.56E+04	7.86E+01	8.36E+02	9.14E+02	5.00E+01	5.00E+02	1.8E+01	1.8E+00
LEAD	1.18E+02	8.38E+00	3.62E-01	2.74E-01	6.36E-01	4.70E+00	1.86E+02	1.4E-01	3.4E-03
MANGANESE	8.67E+02	8.67E+02	2.66E+00	2.83E+01	3.10E+01	5.15E+01	1.46E+02	6.0E-01	2.1E-01
NICKEL	2.81E+01	1.37E+01	8.62E-02	4.46E-01	5.32E-01	1.70E+00	1.48E+01	3.1E-01	3.6E-02
SELENIUM	2.30E-01	2.30E-01	7.06E-04	7.51E-03	8.21E-03	2.00E-01	3.30E-01	4.1E-02	2.5E-02
SILVER	5.80E-02	5.80E-02	1.78E-04	1.89E-03	2.07E-03	6.02E+00	1.19E+02	3.4E-04	1.7E-05
VANADIUM	1.28E+01	1.28E+01	3.93E-02	4.18E-01	4.57E-01	4.16E+00	7.74E+00	1.1E-01	5.9E-02
ZINC	4.52E+01	8.75E+01	1.39E-01	2.86E+00	3.00E+00	7.54E+01	2.98E+02	4.0E-02	1.0E-02
Semivolatile Organics									
ACENAPHTHENE	6.45E-02	2.69E-01	1.98E-04	8.79E-03	8.99E-03	6.56E+01	3.56E+02	1.4E-04	2.5E-05
ANTHRACENE	9.25E-02	3.86E-01	2.84E-04	1.26E-02	1.29E-02	6.56E+01	3.56E+02	2.0E-04	3.6E-05
BENZO(A)ANTHRACENE	2.28E-01	9.54E-01	7.01E-04	3.11E-02	3.18E-02	6.15E-01	3.84E+01	5.2E-02	8.3E-04
BENZO(A)PYRENE	2.88E-01	1.20E+00	8.82E-04	3.92E-02	4.01E-02	6.15E-01	3.84E+01	6.5E-02	1.0E-03
BENZO(B)FLUORANTHENE	2.94E-01	1.23E+00	9.03E-04	4.01E-02	4.10E-02	6.15E-01	3.84E+01	6.7E-02	1.1E-03
BENZO(G,H,I)PERYLENE	2.72E-01	1.13E+00	8.34E-04	3.70E-02	3.79E-02	6.15E-01	3.84E+01	6.2E-02	9.9E-04
BENZO(K)FLUORANTHENE	1.58E-01	6.58E-01	4.83E-04	2.15E-02	2.20E-02	6.15E-01	3.84E+01	3.6E-02	5.7E-04
CHRYSENE	2.65E-01	1.11E+00	8.13E-04	3.61E-02	3.69E-02	6.15E-01	3.84E+01	6.0E-02	9.6E-04
DIBENZO(A,H)ANTHRACENE	1.48E-01	6.16E-01	4.53E-04	2.01E-02	2.06E-02	6.15E-01	3.84E+01	3.3E-02	5.4E-04
FLUORANTHENE	3.05E-01	1.27E+00	9.36E-04	4.16E-02	4.25E-02	6.56E+01	3.56E+02	6.5E-04	1.2E-04
FLUORENE	3.90E-02	1.63E-01	1.20E-04	5.32E-03	5.44E-03	6.56E+01	3.56E+02	8.3E-05	1.5E-05
INDENO(1,2,3-CD)PYRENE	2.76E-01	1.15E+00	8.46E-04	3.76E-02	3.85E-02	6.15E-01	3.84E+01	6.3E-02	1.0E-03
PHENANTHRENE	3.38E-01	1.41E+00	1.04E-03	4.61E-02	4.71E-02	6.56E+01	3.56E+02	7.2E-04	1.3E-04
PYRENE	3.00E-01	1.25E+00	9.21E-04	4.09E-02	4.18E-02	6.15E-01	3.84E+01	6.8E-02	1.1E-03

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	3.67E+00	5.64E+00	kg	Ci = Contaminant concentration in fish
Food Ingestion Rate = (If)	2.37E-01	1.84E-01	kg/day	Cs = Contaminant concentration in sediment
Sediment Ingestion Rate = (Is)	2.23E-02	1.73E-02	kg/day	H=HR/CA (Assume = to 1)
Home Range = (HR)	Assume 100% on site	1.56E+03	acres	Conc = Concentration
Contaminated Area = (CA)	Assume equal to home range	Assume equal to home range		Sed = Sediment
Dose (sediment) = (Cs * Is)(H)/BW				LOAEL = Lowest Observed Adverse Effects Concentration
Dose (fish) = (Ci * If)(H)/BW				NOAEL = No Observed Adverse Effects Concentration
Total Dose = Dose (sediment) + Dose (fish)				

APPENDIX F TABLE 24
HERRING GULL - CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION - >6 INCHES SEDIMENT
MRP SITE 1, CARR POINT, NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Chemical	Max Sed. Conc. (mg/kg)	Fish Conc. (mg/kg)	Dose (mg/kg/d) from: Sediment	Dose (mg/kg/d) from: Fish	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
Metals									
ALUMINUM	5.07E+03	5.07E+03	1.50E+01	1.83E+02	1.98E+02	1.10E+02	1.10E+03	1.8E+00	1.8E-01
ANTIMONY	3.30E+00	3.30E+00	9.78E-03	1.19E-01	1.29E-01	NV	NV	#VALUE!	#VALUE!
ARSENIC	1.94E+01	1.34E+01	5.75E-02	4.84E-01	5.41E-01	2.24E+00	4.51E+00	2.4E-01	1.2E-01
BARIUM	1.91E+01	1.91E+01	5.66E-02	6.90E-01	7.47E-01	2.08E+01	4.17E+01	3.6E-02	1.8E-02
BERYLLIUM	3.30E-01	3.30E-01	9.78E-04	1.19E-02	1.29E-02	NV	NV	#VALUE!	#VALUE!
CADMIUM	2.20E-01	1.76E+00	6.52E-04	6.35E-02	6.42E-02	1.47E+00	6.35E+00	4.4E-02	1.0E-02
CHROMIUM	1.71E+01	8.00E+00	5.07E-02	2.89E-01	3.40E-01	2.66E+00	1.56E+01	1.3E-01	2.2E-02
COBALT	1.88E+01	1.88E+01	5.57E-02	6.80E-01	7.35E-01	7.61E+00	1.83E+01	9.7E-02	4.0E-02
COPPER	4.79E+01	2.51E+02	1.42E-01	9.09E+00	9.23E+00	4.05E+00	3.48E+01	2.3E+00	2.7E-01
IRON	4.42E+04	4.42E+04	1.31E+02	1.60E+03	1.73E+03	1.00E+02	1.00E+03	1.7E+01	1.7E+00
LEAD	2.23E+02	1.35E+02	6.61E-01	4.89E+00	5.55E+00	1.63E+00	4.46E+01	3.4E+00	1.2E-01
MANGANESE	2.19E+03	2.19E+03	6.49E+00	7.92E+01	8.57E+01	1.79E+02	3.77E+02	4.8E-01	2.3E-01
NICKEL	4.74E+01	1.10E+02	1.41E-01	3.98E+00	4.12E+00	6.71E+00	1.86E+01	6.1E-01	2.2E-01
SELENIUM	3.30E-01	3.30E-01	9.78E-04	1.19E-02	1.29E-02	4.00E-01	8.00E-01	3.2E-02	1.6E-02
SILVER	5.80E-02	5.80E-02	1.72E-04	2.10E-03	2.27E-03	2.02E+00	6.05E+01	1.1E-03	3.8E-05
VANADIUM	1.72E+01	1.72E+01	5.10E-02	6.22E-01	6.73E-01	3.44E-01	1.69E+00	2.0E+00	4.0E-01
ZINC	7.24E+01	5.45E+02	2.15E-01	1.97E+01	1.99E+01	6.61E+01	1.71E+02	3.0E-01	1.2E-01
Semivolatile Organics									
ACENAPHTHENE	6.60E-02	2.76E-01	1.96E-04	9.96E-03	1.02E-02	2.00E+00	2.00E+01	5.1E-03	5.1E-04
ANTHRACENE	9.40E-02	3.93E-01	2.79E-04	1.42E-02	1.45E-02	2.00E+00	2.00E+01	7.2E-03	7.2E-04
BENZO(A)ANTHRACENE	5.00E-01	2.09E+00	1.48E-03	7.55E-02	7.70E-02	2.00E+00	2.00E+01	3.8E-02	3.8E-03
BENZO(A)PYRENE	6.50E-01	2.71E+00	1.93E-03	9.81E-02	1.00E-01	2.00E+00	2.00E+01	5.0E-02	5.0E-03
BENZO(B)FLUORANTHENE	6.40E-01	2.67E+00	1.90E-03	9.66E-02	9.85E-02	2.00E+00	2.00E+01	4.9E-02	4.9E-03
BENZO(G,H,I)PERYLENE	5.30E-01	2.21E+00	1.57E-03	8.00E-02	8.16E-02	2.00E+00	2.00E+01	4.1E-02	4.1E-03
BENZO(K)FLUORANTHENE	2.40E-01	1.00E+00	7.11E-04	3.62E-02	3.69E-02	2.00E+00	2.00E+01	1.8E-02	1.8E-03
CHRYSENE	6.50E-01	2.71E+00	1.93E-03	9.81E-02	1.00E-01	2.00E+00	2.00E+01	5.0E-02	5.0E-03
DIBENZO(A,H)ANTHRACENE	2.80E-01	1.17E+00	8.30E-04	4.23E-02	4.31E-02	2.00E+00	2.00E+01	2.2E-02	2.2E-03
FLUORANTHENE	6.80E-01	2.84E+00	2.02E-03	1.03E-01	1.05E-01	2.00E+00	2.00E+01	5.2E-02	5.2E-03
FLUORENE	3.90E-02	1.63E-01	1.16E-04	5.89E-03	6.00E-03	2.00E+00	2.00E+01	3.0E-03	3.0E-04
INDENO(1,2,3-CD)PYRENE	5.90E-01	2.46E+00	1.75E-03	8.91E-02	9.08E-02	2.00E+00	2.00E+01	4.5E-02	4.5E-03
PHENANTHRENE	4.30E-01	1.80E+00	1.27E-03	6.49E-02	6.62E-02	2.00E+00	2.00E+01	3.3E-02	3.3E-03
PYRENE	6.50E-01	2.71E+00	1.93E-03	9.81E-02	1.00E-01	2.00E+00	2.00E+01	5.0E-02	5.0E-03

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	9.51E-01	kg
Food Ingestion Rate = (If)	3.44E-02	kg/day
Sediment Ingestion Rate = (Is)	2.82E-03	kg/day
Home Range = (HR)	Assume 100% on site	
Contaminated Area = (CA)	Assume equal to home range	

Dose (sediment) = (Cs * Is)(H)/BW
Dose (fish) = (Ci * If)(H)/BW
Total Dose = Dose (sediment) + Dose (fish)

Ci = Contaminant concentration in fish
Cs = Contaminant concentration in sediment
H=HR/CA (Assume = to 1)
Conc = Concentration
Sed = Sediment
LOAEL = Lowest Observed Adverse Effects Concentration
NOAEL = No Observed Adverse Effects Concentration

NV - No Value
VALUE - Value could not be calculated

APPENDIX F TABLE 25
HERRING GULL - LESS CONSERVATIVE INPUTS
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION - >6 INCHES SEDIMENT
MRP SITE 1, CARR POINT, NAVAL STATION NEWPORT, PORTSMOUTH, RHODE ISLAND

Chemical	Avg (or 95% UCL) Sed Conc. (mg/kg)	Fish Conc. (mg/kg)	Dose (mg/kg/d) from: Sediment	Dose (mg/kg/d) from: Fish	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
Metals									
ALUMINUM	3.83E+03	3.83E+03	9.66E+00	1.18E+02	1.27E+02	1.10E+02	1.10E+03	1.2E+00	1.2E-01
ANTIMONY	9.60E-01	9.60E-01	2.42E-03	2.95E-02	3.19E-02	NV	NV	#VALUE!	#VALUE!
ARSENIC	9.10E+00	1.30E+00	2.29E-02	4.00E-02	6.30E-02	2.24E+00	4.51E+00	2.8E-02	1.4E-02
BARIUM	9.30E+00	9.30E+00	2.34E-02	2.86E-01	3.09E-01	2.08E+01	4.17E+01	1.5E-02	7.4E-03
CADMIUM	1.70E-01	1.02E-01	4.29E-04	3.14E-03	3.56E-03	1.47E+00	6.35E+00	2.4E-03	5.6E-04
CHROMIUM	1.11E+01	1.11E+00	2.80E-02	3.41E-02	6.21E-02	2.66E+00	1.56E+01	2.3E-02	4.0E-03
COBALT	9.30E+00	9.30E+00	2.34E-02	2.86E-01	3.09E-01	7.61E+00	1.83E+01	4.1E-02	1.7E-02
COPPER	2.56E+01	3.98E+01	6.45E-02	1.22E+00	1.29E+00	4.05E+00	3.48E+01	3.2E-01	3.7E-02
IRON	2.56E+04	2.56E+04	6.45E+01	7.87E+02	8.52E+02	1.00E+02	1.00E+03	8.5E+00	8.5E-01
LEAD	1.18E+02	8.38E+00	2.98E-01	2.58E-01	5.55E-01	1.63E+00	4.46E+01	3.4E-01	1.2E-02
MANGANESE	8.67E+02	8.67E+02	2.19E+00	2.67E+01	2.88E+01	1.79E+02	3.77E+02	1.6E-01	7.7E-02
NICKEL	2.81E+01	1.37E+01	7.08E-02	4.20E-01	4.91E-01	6.71E+00	1.86E+01	7.3E-02	2.6E-02
SELENIUM	2.30E-01	2.30E-01	5.80E-04	7.07E-03	7.65E-03	4.00E-01	8.00E-01	1.9E-02	9.6E-03
SILVER	5.80E-02	5.80E-02	1.46E-04	1.78E-03	1.93E-03	2.02E+00	6.05E+01	9.6E-04	3.2E-05
VANADIUM	1.28E+01	1.28E+01	3.23E-02	3.94E-01	4.26E-01	3.44E-01	1.69E+00	1.2E+00	2.5E-01
ZINC	4.52E+01	8.75E+01	1.14E-01	2.69E+00	2.80E+00	6.61E+01	1.71E+02	4.2E-02	1.6E-02
Semivolatile Organics									
ACENAPHTHENE	6.45E-02	2.69E-01	1.63E-04	8.28E-03	8.44E-03	2.00E+00	2.00E+01	4.2E-03	4.2E-04
ANTHRACENE	9.25E-02	3.86E-01	2.33E-04	1.19E-02	1.21E-02	2.00E+00	2.00E+01	6.1E-03	6.1E-04
BENZO(A)ANTHRACENE	2.28E-01	9.54E-01	5.76E-04	2.93E-02	2.99E-02	2.00E+00	2.00E+01	1.5E-02	1.5E-03
BENZO(A)PYRENE	2.88E-01	1.20E+00	7.25E-04	3.69E-02	3.76E-02	2.00E+00	2.00E+01	1.9E-02	1.9E-03
BENZO(B)FLUORANTHENE	2.94E-01	1.23E+00	7.42E-04	3.78E-02	3.85E-02	2.00E+00	2.00E+01	1.9E-02	1.9E-03
BENZO(G,H,I)PERYLENE	2.72E-01	1.13E+00	6.85E-04	3.49E-02	3.56E-02	2.00E+00	2.00E+01	1.8E-02	1.8E-03
BENZO(K)FLUORANTHENE	1.58E-01	6.58E-01	3.97E-04	2.02E-02	2.06E-02	2.00E+00	2.00E+01	1.0E-02	1.0E-03
CHRYSENE	2.65E-01	1.11E+00	6.68E-04	3.40E-02	3.47E-02	2.00E+00	2.00E+01	1.7E-02	1.7E-03
DIBENZO(A,H)ANTHRACENE	1.48E-01	6.16E-01	3.72E-04	1.89E-02	1.93E-02	2.00E+00	2.00E+01	9.7E-03	9.7E-04
FLUORANTHENE	3.05E-01	1.27E+00	7.69E-04	3.92E-02	3.99E-02	2.00E+00	2.00E+01	2.0E-02	2.0E-03
FLUORENE	3.90E-02	1.63E-01	9.83E-05	5.01E-03	5.11E-03	2.00E+00	2.00E+01	2.6E-03	2.6E-04
INDENO(1,2,3-CD)PYRENE	2.76E-01	1.15E+00	6.95E-04	3.54E-02	3.61E-02	2.00E+00	2.00E+01	1.8E-02	1.8E-03
PHENANTHRENE	3.38E-01	1.41E+00	8.52E-04	4.34E-02	4.43E-02	2.00E+00	2.00E+01	2.2E-02	2.2E-03
PYRENE	3.00E-01	1.25E+00	7.56E-04	3.85E-02	3.93E-02	2.00E+00	2.00E+01	2.0E-02	2.0E-03

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	1.09E+00	kg
Food Ingestion Rate = (If)	3.36E-02	kg/day
Sediment Ingestion Rate = (Is)	2.75E-03	kg/day
Home Range = (HR)	1.00E+01	km-radius
Contaminated Area = (CA)	Assume equal to home range	

Dose (sediment) = (Cs * Is)(H)/BW
Dose (fish) = (Ci * If)(H)/BW
Total Dose = Dose (sediment) + Dose (fish)

Ci = Contaminant concentration in fish
Cs = Contaminant concentration in sediment
H=HR/CA (Assume = to 1)
Conc = Concentration
Sed = Sediment
LOAEL = Lowest Observed Adverse Effects Concentration
NOAEL = No Observed Adverse Effects Concentration

NV - No Value
VALUE - Value could not be calculated

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