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RESOURCE CONSERVATION RECOVERY ACT FACILITY INVESTIGATION DATA VALIDATION REPORT FOR SOLID WASTE MANAGEMENT UNIT 2 SOUTHSIDE LANDFILL
MILLINGTON SUPPACT TN
12/1/2000
ENSAFE INC

RCRA FACILITY INVESTIGATION
DATA VALIDATION REPORT
SWMU 2 — SOUTHSIDE LANDFILL
NAVAL SUPPORT ACTIVITY MID-SOUTH
MILLINGTON, TENNESSEE
REVISION: 0

CTO-0106

Prepared for:

Department of the Navy
Southern Division
Naval Facilities Engineering Command
Charleston, South Carolina

SOUTHDIV CONTRACT NUMBER:
N62467-89-D-0318

Prepared by:

EnSafe Inc.
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The Contractor, EnSafe Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0318 is complete, accurate, and complies with all requirements of the contract.

Date: December 1, 2000
Signature: Ben Brantley
Name: Ben Brantley
Title: Task Order Manager

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1.0 INTRODUCTION

This report presents the analytical data collected during the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) of Naval Support Activity (NSA) Mid-South Solid Waste Management Unit (SWMU) 2 and the quality assurance/quality control (QA/QC) evaluation of those data. The purpose of the data evaluation is to verify that the QC requirements of the data set have been met and to characterize the weakness of any data.

This report includes groundwater and surface water samples collected between April 1997 and October 1999. Data prior to April 1997 have been previously reported in the *Draft RCRA Facility Investigation Data Validation Report — Assembly E, Naval Air Station Memphis, Millington, Tennessee*, (EnSafe/Allen & Hoshall, May 30, 1997).

Samples discussed in this report were analyzed by two different laboratories: STL Savannah Laboratories in Savannah, Georgia and Laucks Testing Laboratories, Inc. of Seattle, Washington. Samples were analyzed for various analytical methods using the following guidance documents:

- USEPA Office of Solid Waste and Emergency Response (OSWER), *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846), Third Edition, revised July 1992 and December 1996.

- USEPA Environmental Monitoring and Support Laboratory, *Methods for Chemical Analysis of Water and Wastes,* EPA-600/4-79-020, revised March 1983.

- USEPA *Title 40 Code of Federal Regulations (CFR) Part 264, Appendix IX, 52 Federal Register 25947,* July 1987.

- American Public Health Association, *Standard Methods for the Examination of Water and Wastewater*, 18th Edition, revised 1992.

The specific analytical methods performed during this investigation are summarized on Table 1-1. The samples collected and analyses performed on each sample are summarized in Attachment A to this report.

Table 1-1
Analytical Methods

Analysis	Analytical Method
Volatile Organic Compounds (VOCs)	SW-846 8260B
Semivolatile Organic Compounds (SVOCs)	SW-846 8270C
Pesticides/Polychlorinated Biphenyls (Pest/PCBs)	SW-846 8080A
Chlorinated Herbicides	SW-846 8151A
Organophosphorus Pesticides (OP Pesticides)	SW-846 8141A
Total Petroleum Hydrocarbons (TPH)	MCAWW 418.1
Gasoline Range Organics (GRO)	SW-846 Modified 8015/TN GRO
Diesel Range Organics (DRO)	SW-846 Modified 8015/TN DRO
Methane	SW-846 Modified 8015
Metals	SW-846 6010/7470A (40 CFR Part 264 Appendix IX List)
Cyanide	SW-846 9012
Nitrate	MCAWW 353.2
Total Organic Carbon (TOC)	SW-846 9060 / MCAWW 365.4
Chloride, Nitrate and Sulfate	MCAWW 300.0
Alkalinity	MCAWW 310.1
Biochemical Oxygen Demand (BOD)	MCAWW 405.1
Chemical Oxygen Demand (COD)	MCAWW 410.2
Hardness	MCAWW 130.2
Heterotrophic Plate Count (HPC)	Standard Methods 9215
Total Kjeldahl Nitrogen	MCAWW 351.2
Total Dissolved Solids (TDS)	MCAWW 160.1
Total Organic Carbon (TOC)	MCAWW 415.1
Total Phosphorus	MCAWW 365.4
Total Suspended Solids (TSS)	MCAWW 160.2
Turbidity	MCAWW 180.1

Samples were analyzed and reported as definitive data with and without raw data and QC forms were submitted for validation. Two types of definitive data packages were submitted for review: summary QC package (without raw data) and full QC package (with raw data). The elements of each data deliverable package provided by the laboratories are presented in Table 1-2.

Table 1-2
Data Deliverables

Summary QC Data Deliverable Package Elements	
• Completed chain-of-custody documentation	• Summary of QC results ➢ Organic surrogate recoveries ➢ Matrix spike/matrix spike duplicates ➢ Laboratory duplicates (inorganic) ➢ Laboratory control samples ➢ Laboratory method blanks ➢ Calibration data ➢ Post-digestion spike data (inorganic) ➢ Organic tuning data ➢ Internal standard areas and retention times (organic) ➢ Sample preparation information ➢ Interference check sample (inorganic)
• Analytical results	
• Results for re-analyzed and diluted samples	
• Sample receipt and log-in information	
• Laboratory case narrative	
• Blank data (trip, rinsate, and field)	
• Sample run logs	
• Soil moisture	
• Data qualifiers applied to sample results	
• Sample preparation information	
Full QC Data Deliverable Package Elements	
• Completed chain of custody documentation	• Summary of QC results ➢ Organic surrogate recoveries ➢ Matrix spike/matrix spike duplicates ➢ Laboratory duplicates (inorganic) ➢ Laboratory control samples/duplicates ➢ Calibration data ➢ Post digestion spike data (inorganic) ➢ Organic tuning data ➢ Internal standard areas and retention times (organic) ➢ Sample preparation information ➢ Interference check sample (inorganic)
• Analytical results	
• Results for re-analyzed and diluted samples	
• Sample receipt and log-in information	
• Laboratory case narrative	
• Blank data (method, trip, rinsate, and field)	

Table 1-2
Data Deliverables

• Sample run logs	• Raw Data ➢ Sample and QC quantitation reports (organic) ➢ Sample and QC chromatograms (organic) ➢ Sample and QC spectra (organic) ➢ Raw calibration data (organic and inorganic) ➢ Raw instrument output (organic and inorganic) ➢ Raw sample data (organic and inorganic)
• Soil moisture	
• Method quantitation limits (organic)	
• Instrument detection limits (inorganic)	
• Data qualifiers applied to sample results	
• Sample preparation information	

Data were validated using the following documents (as appropriate):

- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, OSWER, February 1994 (EPA-540/R-94/012). (Organic Functional Guidelines).

- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, OSWER, February 1994 (EPA-540/R-94/013). (Inorganic Functional Guidelines).

The NSA Mid-South data were validated by either EnSafe or Heartland Environmental Services, Inc., of St. Charles, Missouri. Ninety-five percent of the data were validated from summary data packages (former USEPA data quality objective level III equivalent) while 5 % were validated from full data packages, including raw data (former USEPA data quality objective level IV equivalent). The data validation findings were summarized separately for each sample delivery group (SDG). Each SDG usually contained 20 investigative samples of one matrix type, i.e., either a solid (soil and/or sediment) or water (groundwater and/or surface water) samples, except for QC samples, which are not counted as investigative samples. The validation summary reports and data summary tables are included in Attachment C to this document.

2.0 ORGANIC EVALUATION CRITERIA

This section describes the data validation evaluation parameters for organic analysis. Data qualified as unusable and notable findings may be found in Section 4.0 of this document. Details about specific data outliers found during the review process may be found in the validation summary reports included in Attachment C to this document.

SW-846 methods define the QA/QC criteria that the laboratory should meet; however, these methods do not address data evaluation and data usability from a user's perspective. The data were reviewed for method compliance and usability. When the analytical methods did not address data usability, the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, OSWER, February 1994 (EPA-540/4-94/012) (Organic Functional Guidelines) was used. When the QC parameters did not fall within the specific method guidelines, the data evaluator annotated or "flagged" the corresponding compounds. The flags identified in Attachment B were used to annotate data outside QC criteria. Data evaluation for samples collected at NSA Mid-South included the following parameters:

- Holding times
- Gas chromatograph/mass spectrometry (GC/MS) instrument performance checks
- Surrogate spike recoveries
- Instrument calibration
- Matrix spike/matrix spike duplicate (MS/MSD)
- Laboratory control samples (LCS)
- Blank analysis
- Internal standard (IS) areas and retention times
- Field duplicate precision
- Compound quantitation

2.1 Holding Times

Acceptable technical holding times are specified in the analytical methods. The sample holding time depends on the type of analysis and whether the sample was preserved. For water samples, the holding time for preserved VOC and GRO analyses is 14 days from the collection date. SVOC, Pest/PCBs, OP pesticides, and chlorinated herbicide water samples should be extracted within seven days (14 days for diesel range organic [DRO] water samples) and analyzed within 40 days of extraction. Total petroleum hydrocarbons [TPH (by USEPA Method 418.1)] water samples have a holding time of 28 days from the collection date.

2.2 GC/MS Mass Calibration (Instrument Performance Checks)

Tuning and performance criteria are established to ensure that the data produced by the instrument may be correctly interpreted according to the requirements of the method being used. These criteria are not sample-specific; conformance is determined using standard materials. Therefore, these criteria should be met in all circumstances. Performance standards for VOCs (bromofluorobenzene [BFB]) and SVOCs (decafluorotriphenylphosphine [DFTPP]) are analyzed to determine if the data produced by the instrument may be correctly interpreted according to the method requirements. Performance standards should be analyzed within 12 hours of sample analysis, and the results should be within the established criteria.

2.3 Surrogate Spike Recoveries

Surrogate compounds are added to samples and laboratory blanks before extraction and sample preparation to evaluate the effect of the sample matrix on extraction and measurement procedures. Surrogates are organic compounds which are chemically similar to analytes of interest but not normally found in environmental samples. Three surrogate compounds are added to samples for VOC analysis, eight are added to samples for SVOC analysis, two are added to pesticide/PCB samples, and one is added to both OP pesticide and chlorinated herbicide

analyses. Percent recovery (%R) of the surrogates is calculated by comparing the amount of the compound recovered by the analysis to the amount added to the sample. According to SW-846, the %Rs for each surrogate should be within the statistically derived QC limits defined by the laboratory.

2.4 Instrument Calibration

Instruments are initially and continually calibrated with standard solutions to verify that they are capable of producing acceptable quantitative data for the compounds.

Initial calibration (GC/MS) — A five-point initial calibration is performed to check the performance of the instrument at the beginning of the analytical run and to establish a linear calibration curve. Two types of calibrations are usually used by laboratories: linear calibration using response factors and linear regression. When initial calibration is verified by calculating the relative response factor (RRF) and the percent relative standard deviation (%RSD) for each compound, an RRF less than 0.05 or a mean %RSD greater than 20% for all analytes is outside the quality control limits for the initial calibration. If the initial calibration is calculated using linear regression, the correlation coefficient should be at least 0.990.

Calibration Verification (GC/MS) — Calibration standard solutions are analyzed periodically to check the daily performance of the instrument. The calibration is verified by calculating the RRF and the percent difference (%D) (% drift) for each compound. An RRF less than 0.05 or a mean %D greater than 15% for all analytes is outside the quality control limits for the calibration verification.

Initial calibration (GC) — For single-component pesticides, two separate standard mixes are used, five-point calibrations are analyzed, and calibration factors are established. The mean %RSD for all single-component pesticides should be less than or equal to 20%.

Prior to analyzing samples, multicomponent pesticide toxaphene and all PCBs (or Aroclors) are initially calibrated using a 5-point standard mixture of Aroclor 1016/1260 and toxaphene and a 1-point calibration for the remaining Aroclors (1221, 1232, 1242, 1248, and 1254). Retention times and calibration factors are determined for three to five primary peaks. The mean %RSD for all multi-component pesticides and PCBs should be less than or equal to 20%.

A five-point initial calibration is analyzed for GRO, DRO, herbicides, OP pesticides, and TPH. Two methods for calibration may be used: response factor or linear regression methods. For the response factor method, the initial calibration may be verified by calculating the RRF and the %RSD for each compound. An RRF less than 0.05 or a mean %RSD greater than 20% for all compounds is outside the QC limits for the initial calibration. If linear regression is used, the correlation coefficient should meet or exceed 0.990 before the samples can be analyzed.

Calibration Verification (GC) — To confirm the calibration and evaluate instrument performance for pesticides, calibration verification consisting of instrument blank, performance evaluation mixtures, and the midpoint concentration of the two standard mixes are analyzed. The mean %D for all compounds should not exceed 15% for the continuing calibration.

PCBs are verified by analyzing a mid-point standard mixture of Aroclor 1016/1260 and the mean %D for all peaks should not exceed 15% for the continuing calibration. For GRO, DRO, herbicides and OP pesticides, the continuing calibration is verified by calculating the RRF and the %D for each compound. An RRF less than 0.05 or a mean %D for all compounds greater than 15% is outside the QC limits for the calibration verification.

2.5 Matrix Spike/Matrix Spike Duplicate/Laboratory Control Sample

An MS is a known quantity of stock solution added to the sample before preparation and analysis to determine analytical accuracy for a given matrix. Evaluating the MS data involves two calculations. First, the %R is calculated by comparing the amount of the compound recovered

by the analysis to the amount added to the sample. Then, the relative percent difference (RPD) between the MS and MSD is calculated and assessed. All MS %R and RPD results should fall within the control limits established by the laboratory. No specific requirements have been established for qualifying MS/MSD data. Instead, *Organic Functional Guidelines* recommends that the reviewer use the MS/MSD results with other QC criteria to determine whether data flag are needed.

The LCS is analyzed in a clean (control) matrix and spiked with the same analytes as the MS and %Rs are calculated. LCS results are used to monitor the overall performance of each step during analysis, including sample preparation.

2.6 Blank Analysis

Laboratory method blanks are used to assess the existence and magnitude of potential contamination introduced during analysis. Additionally, *field blanks* may be collected to assess any contamination introduced while collecting samples as well as ambient field conditions. When chemicals are found both in samples and laboratory blanks analyzed within the same 12-hour period **and/or** field-derived blanks, the usability of the data depends on the reviewer's judgment and the blank's origin. According to Organic Functional Guidelines, a sample result should not be considered positive unless the concentration of the compound in the sample exceeds 10 times the amount in **any** blank for common laboratory contaminants (i.e., methylene chloride, acetone, 2-butanone; and common phthalate esters), or five times the amount for other constituents. These amounts are referred to as *action levels* (ALs). Because blank samples may not be prepared using the same weight, dilution, or volume of sample, these variables should also be considered when using these blank criteria. The specific actions to be taken are as follows:

- If a chemical is found in the blank, but not the sample, no action is taken.

- If the sample concentration is greater than the AL, the concentration may be used unqualified.

- If the sample concentration is less than the practical quantitation limit (PQL) and AL, the PQL is reported.

Example (using 10× rule):

Water Sample		**Diluted Water Sample**	
Blank result	= 2	Blank Result	= 2
Blank AL	= 20	Dilution Factor	= 5
PQL	= 10	Blank AL	= 100
Sample result	= 4J	Diluted PQL	= 50
Final result	= 10U	Sample result	= 20J
		Final result	= 50U

In the first example, note that the sample result is not reported as 4U because it is less than the PQL. In the second example, note that the dilution factor is used to calculate an AL of 100 (2 × 5 × 10).

- If the sample concentration is greater than the PQL, but less than the AL, the concentration is reported as nondetect, "U."

Example (using 10× rule):

Water Sample		**Soil Sample**		**Diluted Soil Sample**	
Blank result	= 6	Blank result	= 6	Blank Result	= 6
Blank AL	= 60	% Solids	= 80	% Solids	= 80
PQL	= 10	Blank AL	= 75	Dilution Factor	= 5
Sample result	= 50	PQL	= 10	Blank AL	= 375
Final result	= 50U	Sample result	= 50	Diluted PQL	= 50
		Final result	= 50U	Sample result	= 250
				Final result	= 250U

In the first example, final results less than 60 (or 10 × 6) would be qualified as not detected. Soil results of less than 75 would be qualified as not detected in the second example because percent solids are used to calculate the AL: [(6 ÷ 0.8) × 10]. In the third example, results less than 375 would be qualified as not detected in the diluted soil sample because dilution factors and percent solids are used to calculate the AL: [(6 ÷ 0.8) × 10 × 5].

Field-Derived Blanks

For this project, three types of field-derived blanks were collected: the *field blank*, the *equipment rinsate blank* (also called a *rinsate blank*), and the *trip blank*. The field blank is a sample of the source water used onsite, primarily to decontaminate equipment. The equipment rinsate blank is a sample of runoff water from one or more pieces of the decontaminated equipment used to collect samples. The trip blank is a 40-milliliter volatile organic analysis vial filled at the laboratory with certifiable water to assess cross-contamination during VOC sample container shipment and handling both before and after the samples are collected.

The frequencies for collecting these QC samples were defined in Section 4 of the *NSA Memphis Comprehensive RFI Work Plan* (E/A&H, October 1994) as follows:

- *Field blanks* — one per source of water per sampling event
- *Rinsate blank* — one per week
- *Trip blank* — one per shipment containing volatile organic analysis samples

For data validation, each trip blank is associated only with the samples from the same shipment/cooler. The field blanks and the rinsate blanks apply to a larger number of samples because only one is collected per sampling event. Because field-derived blanks are used with method blanks to assess potential cross-contamination of field investigative samples, no action is taken if contamination was detected in the method blanks associated with the field-derived blanks.

2.7 Internal Standard Performance

GC/MS internal standards are added to samples to ensure the stability of the instrument's sensitivity and response during each analytical VOC and SVOC run. Internal standard area counts for samples and blanks should not vary more than a factor of two (-50% to +100%) from the associated calibration standard. If an internal standard area is outside this window, data qualifiers should be applied.

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GC/MS internal standards are added to samples to ensure the stability of the instrument's sensitivity and response during each analytical VOC and SVOC run. Internal standard area counts for samples and blanks should not vary more than a factor of two (-50% to +100%) from the associated calibration standard. If an internal standard area is outside this window, data qualifiers should be applied.

2.8 Field Duplicate Precision

One field duplicate was collected at NSA Mid-South for each 20 water samples collected. Field duplicate samples are analyzed to evaluate data precision, which measures the reproducibilty of the analysis.

For the NSA Mid-South RFI, RPDs between the samples and duplicates were calculated during the validation processes for sample results above the PQL. If the results for any compounds did not meet RPD criteria of less than 30% for water and less than 50% for soil or sediment, the positive results for that compound were flagged as estimated for the sample and duplicate only. If one value was nondetected and the other value was above the PQL, the positive result was flagged as estimated "J," and the nondetected result as estimated "UJ."

2.9 Compound Quantitation and Reported Quantitation Limits

For organic analytes, the data evaluator should assess the usability of values when multiple sample results are reported by the laboratory. The following paragraphs describe actions taken by the reviewer in these cases.

2.9.1 Re-analyzed Samples

Organic samples may occasionally require re-analysis because of method requirements or poor QC results such as samples analyzed outside 12-hour tuning periods, low surrogate %Rs, and IS retention times, and/or area counts outside QC limits. In such instances, the laboratory may report results for both the original and re-analyzed sample and the reviewer evaluates the quality of both samples during data evaluation. The sample with the preferable quality should be used for interpretation and is reported as a primary sample in EnSafe's database and analytical tables.

2.9.2 Diluted Samples

When an analyte response exceeds the linear calibration range of the instrument or is off-scale, the laboratory dilutes the sample. If at least one compound is outside the calibration range during an initial analysis, the laboratory flags the analyte "E." When diluted, the sample results are flagged "D." Generally, values from the initial analysis will be used, except when they exceeded the calibration range. In this case, they will be replaced by the diluted value to ensure the most representative data. The "D" flag will remain to alert the data user that a secondary dilution value was used. Compounds obtained from the secondary dilution represent the preferred value. When secondary dilution compounds are replaced, the QC outliers accompanying that value are also used.

2.9.3 GC Column Confirmation

Pesticide, chlorinated herbicides, and OP pesticides analyses uses an electron capture detector (ECD) for quantitation. Pesticides are routinely analyzed using two dissimilar columns with retention time windows as the qualitative indicator. If a peak falls within the retention time windows on both columns, it is reported as a positive hit for the appropriate target analyte. The laboratory quantitated target analytes and surrogates on both columns, but only the lower of the two concentrations was reported because any coeluting interferences are likely to increase the calculated concentration of any target compound. For detected analytes, the %D between the two columns was calculated by the laboratory. If the %D between the calculated concentrations was greater than 25%, the laboratory flagged the value "P," because of potential problems in quantitating the analyte. If there is a significant difference between the quantitated values on the two columns, an interference is likely and the reported results may be false positives. This is particularly true at lower concentrations, where uncertainty may increase due to instrument noise.

During the validation process, the laboratory's "P" flags are assessed. General guidelines are used to assess result %Ds and ascertain the validity of single-component pesticide results:

Result %D	Validation Flag
%D ≤ 40%	Result is accepted unqualified.
40% > %D < 100%	Analyte is estimated and flagged "J."
%D > 100%	Analyte is flagged as undetected "U" if it is less than 10× the practical quantitation limit (PQL) and data review indicates the result may be a false positive. **OR** Analyte is flagged "NJ" if the result is greater than 10× the PQL. "NJ" indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification at an estimated concentration.

2.9.4 Sample Quantitation Limits

Detection limits are described in many different terms, depending on the analysis being performed and the capabilities of the instrument. The following terms are important in describing detection limits for SW-846 analysis:

- Organic Method Detection Limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from the analysis of a sample in a given matrix type containing the analyte. It is the lowest concentration of an analyte a method can reliably detect taking into consideration the reagents and preparation steps applied to a sample.

- Practical Quantitation Limit (PQL) or Method Quantitation Limit (MQL) is used to determine the extent of contaminants in media. The organic PQL/MQL is the lowest non-zero standard concentration in the laboratory's initial calibration curve. Inorganic PQLs were demonstrated during sample analyses by analyzing a PQL standard at the beginning and end of the analytical sequence.

- Sample Quantitation Limit (SQL) is the PQL/MQL adjusted for sample characteristics, sample preparation, dilutions, and/or laboratory adjustment.

If a compound was not detected (i.e., if the compound was **not** positively identified on the chromatogram), all data were reported at the SQL by the laboratory. If a compound was identified and reliably quantified above the MDL, it was reported by the laboratory below the SQL. Positively identified compounds detected below the SQL were estimated and flagged "J" by the laboratory.

3.0 METALS AND GENERAL CHEMISTRY DATA EVALUATION

SW-846 and MCAWW methods define QA/QC criteria that the laboratory should meet; however, this method does not address data evaluation and data usability from a user's perspective. The data were reviewed for method compliance and usability. When the analytical methods did not address data usability, the *USEPA CLP National Functional Guidelines for Inorganic Data Review* (Inorganic Functional Guidelines), February 1994, were used throughout the data evaluation process. When the QC parameters did not fall within the specific method guidelines, the data evaluator annotated or "flagged" the corresponding compounds where deficiencies were found. The flags identified in Attachment B were used to annotate data outside QC criteria during the data evaluation. Data evaluation included a review of the following QC parameters, depending on the level of the laboratory reportables:

- Holding times
- Instrument calibration
- MS/MSD Results
- Laboratory duplicates
- Blank analysis
- Inductively coupled plasma (ICP) interference check samples
- ICP serial dilutions
- LCS results
- Field duplicate precision

3.1 Holding Times

Acceptable technical holding times are specified in the analytical methods. For aqueous samples, the holding time for metals analysis is six months, except for mercury, which is 28 days from the date of collection. Cyanide analysis has a sample holding time of 14 days from the date of collection. General chemistry holding times depend on the test.

3.2 Instrument Calibration

Instruments are initially and continually calibrated with standard solutions to check that they produce acceptable qualitative and quantitative data.

The instrument is initially calibrated to check its performance at the beginning of the analysis and to establish a linear calibration curve. Calibration standard solutions are analyzed periodically to check the instrument's performance and confirm that the initial calibration curve is still valid. Calibrations are verified by calculating the %R and comparing the amount of the analyte recovered by analysis to the known amount of standard. Except for mercury, the %R for elements should be between 90% and 110%. The %R for mercury should fall between 80% and 120%. General chemistry calibration criteria varies depending on the test.

3.3 Blank Analysis

Laboratory method blanks are used to assess the presence and magnitude of potential contamination introduced during analysis. Additionally, *field QC blanks* may be collected to assess the potential contamination introduced during sample collection. When chemicals are present in samples and laboratory blanks, the usability of the data depends on the reviewer's judgment and the blank's origin. According to *Inorganic Functional Guidelines*, a sample result should not be considered positive unless the concentration of the compound in the sample exceeds five times the amount in **any** blank, referred to as *action levels* (ALs). Because blank samples may not be prepared using the same weight, volume of sample, or dilution, these variables should also be considered when using blank criteria. The specific actions to be taken are as follows:

- If a chemical is in the blank, but not the sample, no action is taken.

- If the sample concentration is between the AL and the instrument detection limit (IDL), the concentration is reported as "U."

- If the sample concentration is greater than the AL, the concentration may be used unqualified.

In some instances where elements were detected in blanks, associated samples were not flagged "U" in accordance with *Inorganic Functional Guidelines*. This action would have been based on professional judgment because many elements are naturally occurring or essential minerals and often appear in potable water supplies. Not flagging metals below the action level in the samples represents the most conservative worst-case data.

3.4 ICP Interference Check Samples

The ICP interference check sample (ICS) is used to confirm the laboratory instrument's inter-element and background correction factors. Interference samples should be run at the beginning and end of each sample analysis or at least twice per eight-hour working shift. The ICS consists of two solutions: A and AB. Solution A contains the interferants (aluminum, calcium, iron, and magnesium); solution AB contains the target analytes mixed with the interferants. An ICS analysis consists of analyzing both solutions consecutively, starting with solution A, for all wavelengths used for each analyte reported by ICP.

Only aluminum, calcium, iron, and magnesium should be detected in ICS Solution A. The presence of other analytes could lead to the possibility of false positives or false negatives in the investigative samples. The %Rs for ICS solution AB should be between 80% and 120%.

3.5 Laboratory Control Samples

LCSs are used to monitor the overall performance of steps in the analysis, including sample preparation. All aqueous LCS %R results should be within the control limits of 80% to 120%, except antimony and silver, for which control limits have not been established.

3.6 Matrix Spike Analysis

Samples are spiked with known quantities of analytes to evaluate the effect of the sample matrix on digestion and measurement procedures. The %R should be within 75% to 125%. However, when the sample concentration exceeds the spike concentration by a factor of four or more, spike recovery criteria are not applicable.

3.7 Laboratory Duplicates

Laboratory duplicate samples are analyzed for some general chemistry tests to evaluate data precision, a measure of the reproducibilty of the analysis. The RPD between the sample and the duplicate sample is calculated. A control limit of 20 RPD for aqueous samples should not be exceeded for analyte values greater than the quantitation limit or two times the quantitation limit, respectively.

3.8 ICP Serial Dilutions

ICP serial dilutions assess the absence or presence of matrix interference. One sample from each set of similar matrix type is chosen for the serial dilution (a fivefold dilution). For an analyte concentration which is at least a factor of 10 times above the IDL, the measured concentrations of the undiluted sample and of the diluted sample should agree within 10%.

3.9 Field Duplicate Precision

One field duplicate was collected for each 20 water and/or soil samples collected. Field duplicate samples are analyzed to evaluate data precision, which is a measure of the reproducibilty of the analysis.

For the NSA Mid-South project, RPDs between the samples and duplicates were calculated during the validation processes for sample results above the IDL. If the results for any compounds did not meet RPD criteria of less than 30% for water, the positive results for that compound were flagged as estimated for the sample and duplicate only. If one value was nondetected and the other value was above the IDL, the positive result was flagged as estimated "J," and the nondetected result as estimated "UJ."

4.0 Data Quality Summary

One hundred fifty-one investigative samples, 16 field duplicates pairs, and field QC samples were analyzed in 24 SDGs for SWMU 2. Full validation reports of the SDGs and data tables can be found in Attachment C of this document.

The overall data quality of the analytical work performed for NSA Mid-South at SWMU 2 was satisfactory and usable for site remediation and risk assessment. Results that were outside QA/QC requirements were flagged as estimated "J," alerting the data user to the possibility the data could be biased high or low. Although the data are qualified as estimated, they remain dependable for use in risk assessment and site remediation.

4.1 Unusable Data

The analytical results for several samples were rendered unusable because select analytes grossly exceeded QC parameters. Table 4-1 summarizes the unusable data (flagged "U") and explains the qualification.

Table 4-1
SWMU 2 Unusable Data

Sample ID	Fraction	Analyte	Reason
002G01DA05, 002G01UA05, 002G02DA05, 002G02UA05, 002G034105, 002G034305, 002G034505, 002G034705, 002G034905, 002G03UA05, 002G04UA05, 002G05DA05, 002G05UA05, 002G06DA05, 002G06UA05, 002G07UA05, 002G10DA05, 002G10UA05, 002G11UA05, 002G13DA05, 002G11DA05, 002G13MA05, 002G13UA05, 002G14UA05, 002G15DA05, 002G22DA05, 002G23DA05, 002H04UA05, 002G08DA05, 002G08UA05, 002G09DA05, 002G09UA05, 002G12DA05, 002G16DA05, 002G17DA05, 002G17UC05, 002G19DA05	VOC	Acetone	Initial Calibration RRF < 0.05

4.2 Values Obtained from Secondary Dilutions

For this investigation, diluted samples and results obtained from the secondary dilution are listed in Table 4-2.

Table 4-2
Compounds Used from the Secondary Dilution

Compound	Affected Sample IDs
1,2-Dichloroethene (total)	002G003651, 002G003657, 002G034105, 002G034305, 002G034505, 002G034705, 002G034905, 002G03DA04, 002G03DA06, 002H03DA06
Acetone	002G05UA04, 002H05UA04
Trichloroethene	002G003651, 002G003657, 002G034105, 002G034305, 002G034505, 002G034705, 002G034905, 002G03DA04

Compounds obtained from the secondary dilution represent the preferred value. When secondary dilution compounds are replaced, the QC outliers accompanying that value are also used.

4.3 Analytes Flagged Due to Blank Artifacts

Several analytes detected in the laboratory method and various field blanks were examined to determine the existence and magnitude of contamination resulting from the laboratory and to assess whether or not variability was inherent in the data. Table 4-3 summarizes contaminants flagged as undetected "U" due to blank artifacts.

Table 4-3
Compounds Flagged as Undetected

Analyte	Affected Sample IDs
bis(2-Ethylhexyl)phthalate	002G02DA03, 002G03DA03, 002G03UA03, 002G05UA03, 002G06DA03, 002G06UA03, 002G07UA03, 002G09DA03, 002G09UA03, 002G10DA03, 002G13DA03, 002H02DA03, 002H06DA03, 0GMG01DA03
2-Butanone (MEK)	002G06DA04, 002G08DA04, 002G08UA04, 002G14UA04, 002H12DA04, 0GMG04UA04
Acetone	002G002904, 002G003404, 002G003750, 002G003770, 002G003842, 002G003852, 002G003860, 002G01UA03, 002R001101, 002R001102, 002W000701, 002W000702, 002W000801, 002W000802, 002W000901, 002W000902, 002W001001, 002W001002, 002W001101, 002W001102
Arsenic	002G02DA03, 002G03DA03, 002G09DA03, 002G09UA03, 002H02DA03, 002H06DA03
Beryllium	002G01DA03, 002G01UA03, 002G03UA03, 002G04UA03, 002G05DA03, 002G05UA03, 002G08DA03, 002G10DA03, 002G13DA03, 002G13MA03, 002G14DA03, 002G14UA03, 0GMG02DA03, 0GMG03DA03, 0GMG05DA03
Carbon disulfide	002G003005, 002G003105, 002G003206, 002G003306, 002G003404, 002H003206
Chromium	002G04UA03, 002G05DA03, 002G10DA03, 002G10UA03, 002G11UA03, 002G13DA03, 002G13UA03, 002G14DA03, 0GMG02DA03, 0GMG03DA03
Copper	002G01UA03, 002G02DA03, 002G03DA03, 002G03UA03, 002G04UA03, 002G05DA03, 002G05UA03, 002G07UA03, 002G08DA03, 002G08UA03, 002G09DA03, 002G09UA03, 002G10DA03, 002G10UA03, 002G11DA03, 002G11UA03, 002G12UA03, 002G13DA03, 002G13MA03, 002G13UA03, 002G14UA03, 002H02DA03, 002H02UA03, 0GMG01DA03, 0GMG02DA03
Dicamba	002G03DA03, 002G09UA03
Dieldrin	002G02UA03, 002G09DA03, 002G09UA03, 002G12UA03, 002G14UA03
MCPP	0GMG03DA03
Methoxychlor	002G10UA03, 002G12DA03
Methylene chloride	002G01DA03, 002G05UA03, 002G14UA04, 002H06DA04
Selenium	002G03DA03, 002G06UA03, 002G07UA03, 002G09DA03, 002G09UA03, 002G12DA03, 002G12UA03, 002H02DA03, 0GMG01DA03
Tetrachloroethene	002G17UC00

Table 4-3
Compounds Flagged as Undetected

Analyte	Affected Sample IDs
Toluene	0GMG01DA04
Trichloroethene	002G02DA04, 002G04UA04
Vanadium	002G01UA03, 002G03UA03, 002G04UA03, 002G05DA03, 002G05UA03, 002G08DA03, 002G08UA03, 002G10DA03, 002G10UA03, 002G11UA03, 002G13DA03, 002G13UA03, 002G14UA03
Zinc	002G01DA03, 002G01UA03, 002G02UA03, 002G04UA03, 002G05DA03, 002G06DA03, 002G06UA03, 002G07UA03, 002G08DA03, 002G08UA03, 002G10UA03, 002G11DA03, 002G11UA03, 002G12DA03, 002G12UA03, 002G13UA03, 002G14DA03, 002G14UA03, 002H06DA03, 0GMG01DA03, 0GMG03DA03, 0GMG05DA03

The sample results for the analytes listed above that were attributed to blank contamination were nullified during the data validation process and are not believed to be site-related.

Attachment A

Sample Identifications and Analytical Parameters

Table A-1
Analytical Program

Lab	SDG	SAMPLE_ID	VOC	SVOC	PEST	HERB	OPP	TPH	DRO	GRO	METHANE	METAL	FE & MN	CN	NITRATE	TOC	CL	GEN CHEM
Savannah	MEM08	002G02DA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM08	002G03DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM08	002G06DA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM08	002G09DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM08	002G09UA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM08	002G11DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM08	002H02DA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM08	002H06DA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM14	002G01DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM14	002G01UA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM14	002G02UA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM14	002G03UA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM14	002G04UA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM14	002G05DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM14	002G05UA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM14	002G08DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM14	002G08UA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM14	002G10DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM14	002G10UA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM14	002G11UA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM14	002G13DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM14	002G13MA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM14	002G13UA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM14	002G14DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM14	002G14UA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM14	002H02UA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM14	0GMG02DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM14	0GMG03DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM14	0GMG05DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM15	002G06UA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM15	002G07UA03	X	X	X	X	X	X	X	X		X		X				

Table A-1
Analytical Program

Lab	SDG	SAMPLE_ID	VOC	SVOC	PEST	HERB	OPP	TPH	DRO	GRO	METHANE	METAL	FE & MN	CN	NITRATE	TOC	CL	GEN CHEM
Savannah	MEM15	0GMG01DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM21	002G12DA03	X	X	X	X	X	X	X	X		X		X				
Savannah	MEM21	002G12UA03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Savannah	MEM30	002G002904	X															
Savannah	MEM30	002G003005	X															
Savannah	MEM30	002G003105	X															
Savannah	MEM30	002G003206	X															
Savannah	MEM30	002G003306	X															
Savannah	MEM30	002G003404	X															
Savannah	MEM30	002H003206	X															
Savannah	MEM36	002G10DA04	X															
Savannah	MEM36	002G14DA04	X															
Savannah	MEM37	002G01DA04	X															
Savannah	MEM37	002G02DA04	X								X		X		X	X	X	X
Savannah	MEM37	002G02UA04	X								X		X		X	X	X	X
Savannah	MEM37	002G05DA04	X															
Savannah	MEM37	002G08DA04	X															
Savannah	MEM37	002G13UA04	X								X		X		X	X	X	X
Savannah	MEM38	002G04UA04	X								X		X		X	X	X	X
Savannah	MEM38	002G06DA04	X								X		X		X	X	X	X
Savannah	MEM38	002G08UA04	X								X		X		X	X	X	X
Savannah	MEM38	002G10UA04	X								X		X		X	X	X	X
Savannah	MEM38	002G14UA04	X								X		X		X	X	X	X
Savannah	MEM38	002H06DA04	X								X		X		X	X	X	X
Savannah	MEM40	002G05UA04	X															
Savannah	MEM40	002G06UA04	X															
Savannah	MEM40	002G07UA04	X															
Savannah	MEM40	002G09DA04	X															
Savannah	MEM40	002G09UA04	X															
Savannah	MEM40	002G11DA04	X															
Savannah	MEM40	002G11UA04	X								X		X		X	X	X	X

Table A-1
Analytical Program

Lab	SDG	SAMPLE_ID	VOC	SVOC	PEST	HERB	OPP	TPH	DRO	GRO	METHANE	METAL	FE & MN	CN	NITRATE	TOC	CL	GEN CHEM
Savannah	MEM40	002G12DA04	X															
Savannah	MEM40	002G12UA04	X								X		X		X	X	X	X
Savannah	MEM40	002G13MA04	X															
Savannah	MEM40	002H05UA04	X															
Savannah	MEM40	002H12DA04	X															
Savannah	MEM40	0GMG01DA04	X															
Savannah	MEM40	0GMG04UA04	X															
Savannah	MEM41	002G01UA04	X															
Savannah	MEM41	002G03DA04	X															
Savannah	MEM41	002G03UA04	X															
Savannah	MEM41	002G13DA04	X															
Savannah	MEM55	002G15LA00	X															
Savannah	MEM55	002G16LA00	X															
Savannah	MEM55	002G17LA00	X															
Savannah	MEM55	002G17UC00	X															
Savannah	MEM55	002G18LA00	X															
Savannah	MEM55	002G19LA00	X															
Savannah	MEM55	002G20LA00	X															
Savannah	MEM55	002G22LA00	X															
Savannah	MEM55	002G23LA00	X															
Savannah	MEM55	002H20LA00	X															
Savannah	MEM68	002G02DA05									X							
Savannah	MEM68	002G02UA05									X							
Savannah	MEM68	002G03DA05									X							
Savannah	MEM68	002G04UA05									X							
Savannah	MEM68	002G06DA05									X							
Savannah	MEM68	002G08UA05									X							
Savannah	MEM68	002G10UA05									X							
Savannah	MEM68	002G11UA05									X							
Savannah	MEM68	002G13UA05									X							

Table A-1
Analytical Program

Lab	SDG	SAMPLE_ID	VOC	SVOC	PEST	HERB	OPP	TPH	DRO	GRO	METHANE	METAL	FE & MN	CN	NITRATE	TOC	CL	GEN CHEM
Savannah	MEM68	002G14UA05									X							
Savannah	MEM68	002G15DA05									X							
Savannah	MEM68	002G18DA05									X							
Savannah	MEM69	002G12UA05									X							
Savannah	MEM76	002G001201	X														X	
Savannah	MEM76	002G001301															X	
Savannah	MEM76	002G001401															X	
Savannah	MEM76	002G03DA06	X														X	
Savannah	MEM76	002G05DA06															X	
Savannah	MEM76	002G06DA06															X	
Savannah	MEM76	002G16DA06															X	
Savannah	MEM76	002G18DA06	X														X	
Savannah	MEM76	002H03DA06	X														X	
Laucks	MS003	002G01DA05	X															
Laucks	MS003	002G01UA05	X															
Laucks	MS003	002G02DA05	X															
Laucks	MS003	002G02UA05	X															
Laucks	MS003	002G034105	X															
Laucks	MS003	002G034305	X															
Laucks	MS003	002G034505	X															
Laucks	MS003	002G034705	X															
Laucks	MS003	002G034905	X															
Laucks	MS003	002G03UA05	X															
Laucks	MS003	002G04UA05	X															
Laucks	MS003	002G05DA05	X															
Laucks	MS003	002G05UA05	X															
Laucks	MS003	002G06DA05	X															
Laucks	MS003	002G06UA05	X															
Laucks	MS003	002G07UA05	X															
Laucks	MS003	002G10DA05	X															

Table A-1
Analytical Program

Lab	SDG	SAMPLE_ID	VOC	SVOC	PEST	HERB	OPP	TPH	DRO	GRO	METHANE	METAL	FE & MN	CN	NITRATE	TOC	CL	GEN CHEM
Laucks	MS003	002G10UA05	X															
Laucks	MS003	002G11UA05	X															
Laucks	MS003	002G13DA05	X															
Laucks	MS004	002G11DA05	X															
Laucks	MS004	002G13MA05	X															
Laucks	MS004	002G13UA05	X															
Laucks	MS004	002G14DA05	X															
Laucks	MS004	002G14UA05	X															
Laucks	MS004	002G15DA05	X															
Laucks	MS004	002G22DA05	X															
Laucks	MS004	002G23DA05	X															
Laucks	MS004	002H04UA05	X															
Laucks	MS004	002H14DA05	X															
Laucks	MS005	002G08DA05	X															
Laucks	MS005	002G08UA05	X															
Laucks	MS005	002G09DA05	X															
Laucks	MS005	002G09UA05	X															
Laucks	MS005	002G12DA05	X															
Laucks	MS005	002G12UA05	X															
Laucks	MS005	002G16DA05	X															
Laucks	MS005	002G17DA05	X															
Laucks	MS005	002G17UC05	X															
Laucks	MS005	002G19DA05	X															
Laucks	MS006	002G185005	X															
Laucks	MS006	002G185205	X															
Laucks	MS006	002G185405	X															
Laucks	MS006	002G185605	X															
Laucks	MS006	002G185805	X															
Laucks	MS006	002G20DA05	X															
Laucks	MS006	002H12UA05	X															

Table A-1
Analytical Program

Lab	SDG	SAMPLE_ID	VOC	SVOC	PEST	HERB	OPP	TPH	DRO	GRO	METHANE	METAL	FE & MN	CN	NITRATE	TOC	CL	GEN CHEM
Laucks	MS006	002H16DA05	X															
Laucks	MS007	002G02UA05	X								X				X	X		
Laucks	MS007	002G04UA05	X								X				X	X		
Laucks	MS007	002G08UA05	X								X				X	X		
Laucks	MS007	002G10UA05	X								X				X	X		
Laucks	MS007	002G11UA05	X								X				X	X		
Laucks	MS007	002G13UA05	X								X				X	X		
Laucks	MS007	002G14UA05	X								X				X	X		
Laucks	MS008	002G02DA05	X								X				X	X		
Laucks	MS008	002G03DA05									X				X	X		
Laucks	MS008	002G06DA05	X								X				X	X		
Laucks	MS008	002G15DA05	X								X				X	X		
Laucks	MS008	002G18DA05									X				X	X		
Laucks	MS009	002G12UA05	X								X				X	X		
Laucks	MS029	002G003540	X															
Laucks	MS029	002G003547	X															
Laucks	MS029	002G003552	X															
Laucks	MS029	002G003644	X															
Laucks	MS029	002G003651	X															
Laucks	MS029	002G003657	X															
Laucks	MS029	002G003747	X															
Laucks	MS029	002H003747	X															
Laucks	MS030	002G003750	X															
Laucks	MS030	002G003770	X															
Laucks	MS030	002G003842	X															
Laucks	MS030	002G003852	X															
Laucks	MS030	002G003860	X															
Laucks	MS031	002R001101	X															
Laucks	MS031	002R001102	X															
Laucks	MS031	002W000701	X															

Table A-1
Analytical Program

Lab	SDG	SAMPLE_ID	VOC	SVOC	PEST	HERB	OPP	TPH	DRO	GRO	METHANE	METAL	FE & MN	CN	NITRATE	TOC	CL	GEN CHEM
Laucks	MS031	002W000702	X															
Laucks	MS031	002W000801	X															
Laucks	MS031	002W000802	X															
Laucks	MS031	002W000901	X															
Laucks	MS031	002W000902	X															
Laucks	MS031	002W001001	X															
Laucks	MS031	002W001002	X															
Laucks	MS031	002W001101	X															
Laucks	MS031	002W001102	X															

Notes:

VOC = Volatile Organic Compounds by SW-846 8260B
SVOC = Semivolatile Organic Compounds by SW-846 8270C
PEST = Pesticides/Polychlorinated Biphenyls by SW-846 8080A
HERB = Chlorinated Herbicides by SW-846 8151A
OPP = Organophosphorus Pesticides by SW-846 8141A
TPH = Total Petroleum Hydrocarbons by MCAWW 418.1
DRO = Diesel Range Organics by SW-846 Modified 8015/TN DRO
GRO = Gasoline Range Organics by SW-846 Modified 8015/TN GRO
Methane = SW-846 Modified 8015
Metal = CFR Part 264 Appendix IX Metal List by SW-846 6010/7470A40
FE MN = Iron and mangenese (only) by SW-846 6010
CN = Cyanide by SW-846 9012
Nitrate = MCAWW 353.2
TOC = Total Organic Carbon by SW-846 9060 / MCAWW 365.4
CL = Chloride by MCAWW 300.0
GEN CHEM = General chemistry parameters: Nitrate and Sulfateby MCAWW 300.0, Alkalinity by MCAWW 310.1, Biochemical Oxygen Demand by MCAWW 405.1, Chemical Oxygen Demand by MCAWW 410.2, Hardness by MCAWW 130.2, Heterotrophic Plate Count by Standard Methods 9215, Total Kjeldahl Nitrogen by MCAWW 351.2, Total Dissolved Solids by MCAWW 160.1, Total Organic Carbon by MCAWW 415.1, Total Phosphorus by MCAWW 365.4, Total Suspended Solids by MCAWW 160.2, Turbidity by MCAWW 180.1

Modified Sample IDs

Each sample, when initially collected, was assigned a 10-digit identification (ID) which indicated the project site, sample matrix, location within the site, and the event (or depth) at which the sample was collected. Many of the original IDs that appeared on the chains of custody (COCs) were modified so that the type of well and sampling event could be more readily identified. Sample IDs which were modified after sample collection are listed below.

Sample ID	Original ID on COC
002G003540	002G003140
002G003547	002G003147
002G003552	002G003152
002G003644	002G003244
002G003651	002G003251
002G003657	002G003257
002G003747	002G003347
002H003747	002H003347
002G003750	002G003350
002G003770	002G003370
002G003842	002G003442
002G003852	002G003452
002G003860	002G003460

Attachment B

Data Qualifiers

Data Qualifiers

U **Undetected** — The parameter was analyzed but not detected by the laboratory or the parameter was deemed to be a false positive and was flagged as undetect during validation

J **Estimated Value** — The parameter was detected below the sample quantitation limit or at least one QC parameter was outside control limits during validation.

UJ **Undetected and Estimated** — The analyte was analyzed, but not detected, at a concentration that exceeded the listed quantitation limit; the quantitation limit was estimated during validation because at least one QC parameter was outside control limits.

D **Diluted Result** — The compound was re-analyzed at a secondary dilution factor. If at least one compound is outside the calibration range during an initial analysis, the laboratory flags the analyte "E." When diluted, the sample results will be flagged "D." Generally, values with the lowest quantitation limits will be used, unless the value exceeded the calibration range. Values exceeding the calibration range in the initial analysis will be replaced by the diluted value to ensure the most representative data. The "D" flag will remain on the value to alert the data user that a secondary dilution value was used.

R/UR **Unusable Data** — At least one QC parameter grossly exceeded control limits.

For metals, the laboratory flags values between the instrument detection limit (IDL) and the practical quantitation limit (PQL) with a "B" qualifier, meaning that the analyte was detected below the PQL and is estimated. During validation, all results between the IDL and PQL were changed to "J" if flagged "B" by the laboratory.

Attachment C

Data Validation Summary Narratives and Data Tables

Data Validation Report

SDG MEM08

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

RECEIVED
JUN 17 1997

Data Validation Report

SDG#:	MEM08
Date:	June 13, 1997
Client Name:	Ensafe/ Allen & Hoshall
Project/Site Name:	NAS Memphis
Date Sampled:	April 16-21, 1997
Number of Samples:	10 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Savannah Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, June 1991 and February, 1994, respectively
QA/QC Level:	EPA DQO Level IV
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volatiles, Semivolatiles, Pesticide/PCB's, Herbicides, Organophosphorus Pesticides, Gasoline Range Organics, Diesel Range Organics, Methane, Total Petroleum Hydrocarbons, APX9 Metals, Cyanide, Iron, Manganese

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user in urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig G. Simpson
Paul B. Humburg, President

6/16/97
Date

4127 Plaza 94 South · St. Charles, MO 63304
(314) 936-1332 · Fax (314) 936-1335

SDG# MEM08

Samples and Fractions Reviewed

Sample Identifications | Analytical Fractions

ENSAFE ID	MATRIX	VOA		SVOA		P/P		HERB		OPP		TPH		GRO		DRO		METH		TAL		CN		FE		MN	
000T042197	WATER	X																									
002G02DA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
002H02DA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
002G03DA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G06DA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
002H06DA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
002G09DA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G09UA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G11DA03	WATER	X		X		X		X		X		X		X		X				X		X					
00EE041897	WATER	X		X		X		X		X		X		X		X				X		X					
Total Billable Samples	(Water/Soil	10	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0	4	0	9	0	9	0	4	0	4	0

VOA = SW846 Volatiles
SVOA = SW846 Semivolatiles
P/P = SW846 Pesticides/PCB's
HERB = SW846 Herbicides
OPP = SW846 Organophosphorus Pesticides
TPH = SW846 Petroleum Hydrocarbons
GRO = SW846 Gasoline Range Organics
DRO = SW846 Diesel Range Organics
METH = SW846 Methane
TAL = SW846 APX9 Metals
CN = SW846 Cyanide
FE = SW846 Iron
MN = SW846 Manganese

DATA ASSESSMENT NARRATIVES

DATA ASSESSMENT NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW-846 Method 8240; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM08

A validation was performed on the Volatile Data from SDG MEM08. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Internal Standard Performance
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

Continuing Calibrations

The continuing calibrations were not acceptable for all compound %Ds. Qualifications were required.

Continuing Calibrations, continued

Specific Findings

The continuing calibration AQ557 contained one (1) compound with a %D greater than 50% but less than 90%. For the samples and non-compliant compound listed below, the positive and non-detect results are qualified as estimated, J/UJ.

002G03DA03 acetone (75.0%)

The continuing calibration AQ569 contained one (1) compound with a %D greater than 50% but less than 90%. For the samples and non-compliant compound listed below, the positive and non-detect results are qualified as estimated, J/UJ.

002G11DA03 acetone (66.7%)

The continuing calibration AQ572 contained one (1) compound with a %D greater than 50% but less than 90%. For the samples and non-compliant compound listed below, the positive and non-detect results are qualified as estimated, J/UJ.

002G02DA03 acetone (58.3%)
002G06DA03
002H02DA03
002H06DA03

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
002G03DA03	acetone	+/-	J/UJ
002G11DA03	acetone	+/-	J/UJ
002G02DA03 002G06DA03 002H02DA03 002H06DA03	acetone	+/-	J/UJ

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

SEMIVOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW-846 Method 8270; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM08

A validation was performed on the Semivolatile Data from SDG MEM08. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibration
	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Internal Standard Performance
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

Continuing Calibrations

The continuing calibrations were not acceptable for all compound %Ds. Qualifications were required.

Continuing Calibrations, continued

Specific Findings

The continuing calibration EQ401 contained two (2) compounds with %Ds greater than 50% but less than 90%. For the samples and non-compliant compounds listed below, the positive results and non-detect results are qualified as estimated, J/UJ.

002G09DA03	bis(2-chloroisopropyl)ether (58.2%)
002G09UA03	hexachlorocyclopentadiene (52.8%)
002G03DA03	4-nitroaniline (60.0%)
002G11DA03	
002G02DA03	
002G06DA03	
002H02DA03	
002H06DA03	

Field QC Blanks

One (1) of the field QC blanks associated with these samples exhibited contamination. The samples required qualification. The end-user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moisture as associated samples. These factors must be taken into consideration when applying the 5X or 10X criteria to field samples.

Specific Finding

Associated Blank	Compound	Conc.	Action Level
00EE041897	bis(2-ethylhexyl)phthalate	0.72 μg/L	7.2 μg/L

Samples	Compound	Qualification
002G09DA03	bis(2-ethylhexyl)phthalate	CRQL
002G09UA03		
002G03DA03		
002G02DA03		
002G06DA03		
002H02DA03		
002H06DA03		

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
002G09DA03	bis(2-chloroisopropyl)ether	+/-	J/UJ
002G09UA03	hexachlorocyclopentadiene		
002G03DA03	4-nitroaniline		
002G11DA03			
002G02DA03			
002G06DA03			
002H02DA03			
002H06DA03			
002G09DA03	bis(2-ethylhexyl)phthalate	+	CRQL
002G09UA03			
002G03DA03			
002G02DA03			
002G06DA03			
002H02DA03			
002H06DA03			

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

PESTICIDE/AROCLORS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8080; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM08

A validation was performed on the Pesticide/Aroclor Data from SDG MEM08. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC Performance
*	•	Calibration
	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

Contractual Non-Compliance

The method requires that all target compounds, including the multi-component compounds, be analyzed with a five (5) point calibration curve. The laboratory did not analyze a five (5) point curve for Aroclors 1221, 1232, 1242, 1248, or 1254. No positive results were reported for the compounds analyzed with a single point calibration, therefore the data did not require qualification.

QC Blanks

The associated field blank exhibited contamination for target compounds and required qualifications. The end user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moistures as associated samples. These factors must be taken into consideration when applying the 5X criteria to field samples. The QC blank results were compared to the associated samples.

Blank ID	Compound	Concentration	Action Level
002F042597	Dieldrin	0.0038 J µg/L	0.019 µg/L
	Endrin	0.0046 J µg/L	0.023 µg/L

The following samples have been qualified for blank contamination. The qualifications are for all the blanks.

Sample	Compound	Qualification
002G09DA03	Dieldrin	CRQL
002G09UA03		

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is qualified as presumptively present at an estimated concentration

R = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
002G09DA03	Dieldrin	+	CRQL
002G09UA03			

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE

CHLORINATED HERBICIDES

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8151; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM08

A validation was performed on the Herbicide Data from SDG MEM08. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC Performance
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
	•	Compound Quantitation

* - All criteria were met for this parameter.

Compound Quantitation

Several samples exhibited column quantitation %Ds greater than 40%. The following guidelines were used to qualify the data:

1. No qualifications are required for positive sample results which exhibited column quantitation differences <40%. The "P" flag is removed from the result.

2. The positive sample result which exhibited a column quantitation difference >40%, but ≤100% is qualified as estimated, J.

Compound Quantitation, Continued

3. The positive sample result which exhibited a column quantitation difference >100% and is <10X the respective compound CRQL, is qualified as non-detect, U.

4. The positive sample result which exhibited a column quantitation difference >100% and >10X the respective compound CRQL, is qualified as presumptively present at an estimated concentration, NJ.

The following samples and compounds have been qualified for high column quantitation %Ds.

Sample ID	Compound	%D	Lab Qual.	HESI Qual.	Ref. #
002G09DA03	MCPA	31.0%	P		1
002G09UA03	Dicamba	116.2%	P	U	3
002G03DA03	Dicamba	110.5%	P	U	3

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
002G09DA03	MCPA	+	
002G09UA03	Dicamba	+	U
002G03DA03	Dicamba	+	U

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE

ORGANOPHOSPHORUS PESTICIDES

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8141; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM08

A validation was performed on the Organophosphorus Pesticide Data from SDG MEM08. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC Performance
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is considered presumptively present at an estimated concentration

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE
GASOLINE RANGE ORGANICS ANALYSIS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the TDEC Method TPH-GRO; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM08

A validation was performed on the Gasoline Range Organics Data from SDG MEM08. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE
DIESEL RANGE ORGANICS ANALYSIS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the TDEC Method THP-DRO; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM08

A validation was performed on the Diesel Range Organics Data from SDG MEM08. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

METHANE

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Savannah Laboratories' SOP (AR30:08.11.94); the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM08

A validation was performed on the Methane Data from SDG MEM08. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC Performance
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is considered presumptively present at an estimated concentration

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE
METALS, TPH AND CYANIDE

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Methods; the Functional Guidelines for Inorganic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM08

A validation was performed on the Metals, TPH and Cyanide Data from SDG MEM08. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	Calibrations
	•	Blanks
*	•	Interferences
*	•	Matrix Spike Recovery
*	•	Matrix Duplicates
	•	Field Duplicates
*	•	Laboratory Control Samples
*	•	Serial Dilutions
	•	Post Digestion Spiking

* - All criteria were met for this parameter.

Preparation and Field Blanks

Specific Finding

The preparation blank exhibited contamination for the following elements.

Elements	Conc.	Samples affected
Arsenic	1.51 ug/l	all water samples below 7.55 ug/l
Copper	2.88 ug/l	all water samples below 14.4 ug/l
Manganese	0.98 ug/l	no impact
Selenium	2.2 ug/l	all water samples below 11.0 ug/l
Zinc	2.56 ug/l	all water samples below 12.8 ug/l

The USEPA requires that all sample values below five times the preparation, field, or DI or calibration blank contamination be qualified as non-detect, "U". The field or DI water blanks exhibited contamination but had no impact on the data.

The preparation blank exhibited negative bias for the following elements.

Elements	Conc.	Samples affected
Barium	-1.17 ug/l	no impact

This reviewer qualifies all samples results below ten times the negative bias as estimated, "J" or "UJ".

Duplicate Analysis

Specific Finding

The Field Duplicate analyses for waters for sample (002G02DA03 and 002H02DA03) for Chromium (39%) and Zinc (116%) were greater than 35%. All positive and non-detect results are qualified as estimated, "J" or "UJ".

Post Digestion Spiking

Specific Finding

The post digestion spike recovery for GFAA was below the lower control limits (>10% but <85%). All positive and non-detect results for the listed samples below are qualified as estimated, "J" or "UJ".

Element	Sample IDs	% recoveries
Lead	002G11DA03	78
Thallium	002G11DA03	82
Thallium	002H06DA03	84
Selenium	002G11DA03	84
Selenium	002G09UA03	52
Selenium	002G09DA03	41
Selenium	002G03DA03	70
Selenium	002G02DA03	50
Selenium	002G06DA03	60
Selenium	002H02DA03	50
Selenium	002H06DA03	70

Specific Finding

All sample results left with a "B" qualifier after all other qualifications, will be qualified with a "J" qualifier in place of the "B" per Ensafe's request.

SUMMARY OF DATA QUALIFICATIONS

Sample ID	Analyte	DL	QL
All water samples below 7.55 ug/l	As.	+	U
All water samples below 14.4 ug/l	Cu.		
All water samples below 11.0 ug/l	Se.		
All water samples below 12.8 ug/l	Zn.		
002G02DA03 and 002H02DA03	Cr and Zn.	+/U	J/UJ
002G11DA03.	Pb.	+/U	J/UJ
002G11DA03 and 002H06DA03	Tl.		
002G11DA03, 002G09DA03, 002G09UA03, 002G03DA03, 002G02DA03, 002G06DA03, 002H02DA03 and 002H06DA03.	Se.		
All "B" results	all analytes	B	J

ENSAFE VALIDATION SUMMARY REPORT

Site Name: Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.: 0106-001-04-730-00
Laboratory: Savannah Laboratories, Savannah, Georgia
Sample Delivery Groups: MEM08
Matrix: Water
DQO Level: III
Analysis:

Alkalinity (EPA 310.1)	Biochemical Oxygen Demand (EPA 405.1)	Chloride (EPA 300.0)
Chemical Oxygen Demand (EPA 410.2)	Hardness (EPA 130.2)	Heterotrophic Plate Count (SM 9215B)
Kjeldahl Nitrogen (EPA 351.2)	Nitrate (EPA 353.2)	Sulfate (EPA 300.0)
Total Dissolved Solids (EPA 160.1)	Total Organic Carbon (EPA 415.1)	Total Phosphorus (EPA 365.4)
Total Suspended Solids (EPA 160.2)	Turbidity (EPA 180.1)	

SDG MEM08 Sample IDs

002G02DA03	002H06DA03 (Dup of 002H06DA03)
002H02DA03 (Dup of 002G02DA03)	002G09DA03
002G03DA03	002G09UA03
002G06DA03	002G11DA03

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

General Chemistry Evaluation

1. All holding times, calibration verification, blank analysis, and laboratory control samples were acceptable. A matrix spike/matrix spike duplicate was not analyzed with this SDG.

2. Samples 002G2DA03 and 002H02DA03 were field duplicates. The relative percent difference was calculated and the following parameters were outside the QC limit of <30%: heterotrophic plate count, nitrate, turbidity, and total suspended solids. Results for these parameters were estimated ("J" flagged), for the sample and duplicate only.

Data Validation Report

SDG MEM14

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

RECEIVED
JUL 1 1997

Data Validation Report

SDG#:	MEM14
Date:	June 27, 1997
Client Name:	Ensafe/ Allen & Hoshall
Project/Site Name:	NSA Memphis
Date Sampled:	April 22-25, 1997
Number of Samples:	27 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Savannah Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, June 1991 and February, 1994, respectively
QA/QC Level:	EPA DQO Level IV
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volatiles, Semivolatiles, Pesticide/PCB's, Herbicides, Organophosphorus Pesticides, Petroleum Hydrocarbons, Gasoline Range Organics, Diesel Range Organics, Methane, APX9 Metals, Cyanide, Iron, Manganese

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user in urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig H. Sexton
Paul B. Humburg, President

6/30/97
Date

4127 Plaza 94 South · St. Charles, MO 63304
(314) 936-1332 · Fax (314) 936-1335

SDG# MEM14

Samples and Fractions Reviewed

Sample Identifications — Analytical Fractions

ENSAFE ID	MATRIX	VOA		SVOA		P/P		HERB		OPP		TPH		GRO		DRO		METH		TAL		CN		FE		MN	
000T042297	WATER	X																									
000T042397	WATER	X																									
000T042497	WATER	X																									
000T042597	WATER	X																									
002G01DA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G01UA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G02UA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
002H02UA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
002G03UA03	WATER	X		X		X		X		X		X		X		X				X		X					
002F042597	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
002G04UA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
002G05DA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G05UA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G08DA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G08UA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
002G10DA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G10UA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
00BT042597	WATER	X																									
002G11UA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
002G13DA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G13MA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G13UA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
002G14DA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G14UA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
0GMG02DA03	WATER	X		X		X		X		X		X		X		X				X		X					
0GMG03DA03	WATER	X		X		X		X		X		X		X		X				X		X					
0GMG05DA03	WATER	X		X		X		X		X		X		X		X				X		X					
Total Billable Samples	(Water/Soil	27	0	22	0	22	0	22	0	22	0	22	0	22	0	22	0	9	0	22	0	22	0	9	0	9	0

VOA= SW846 Volatiles
SVOA= SW846 Semivolatiles
P/P= SW846 Pesticides/PCB's
HERB= SW846 Herbicides
OPP= SW846 Organophosphorus Pesticides
TPH= SW846 Petroleum Hydrocarbons
GRO= SW846 Gasoline Range Organics
DRO= SW846 Diesel Range Organics
METH= SW846 Methane
TAL= SW846 APX9 Metals
CN= SW846 Cyanide
FE= SW846 Iron
MN= SW846 Manganese

DATA ASSESSMENT NARRATIVES

DATA ASSESSMENT NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW-846 Method 8240; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level IV requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM14

A validation was performed on the Volatile Data from SDG MEM14. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibration
	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Internal Standard Performance
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

Continuing Calibrations

The continuing calibration AQ575 contained one (1) compound with a %D greater than 25% but less than 50% for which qualifications were required. For the samples and non-compliant compound listed below, the positive results are qualified as estimated, J.

002G08UA03	acetone (50.0%)

Continuing Calibrations, continued

The continuing calibration AQ585 contained one (1) compound with a %D greater than 25% but less than 50% for which qualifications were required. For the samples and non-compliant compound listed below, the positive results are qualified as estimated, J.

002G10UA03	acetone (50.0%)

The continuing calibration AQ588 contained one (1) compound with a %D greater than 25% but less than 50% for which qualifications were required. For the samples and non-compliant compound listed below, the positive results are qualified as estimated, J.

002G03UA03	acetone (50.0%)

The continuing calibration AQ593 contained one (1) compound with a %D greater than 50% but less than 90%. For the samples and non-compliant compound listed below, the positive results are qualified as estimated, J, and the non-detect results are qualified as estimated, UJ.

002G01DA03	acetone (66.7%)
002G01UA03	
002G05UA03	
002G08DA03	
002G10DA03	
002G14DA03	
OGMG02DA03	
OGMG05DA03	

Method Blanks

The method blanks associated with these samples exhibited contamination. The samples required qualification. The end-user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moisture as associated samples. These factors must be taken into consideration when applying the 5X or 10X criteria to field samples.

Associated Blank	Compound	Conc.	Action Level
2A0429MB	acetone	24 μg/L	240 μg/L
	methylene chloride	0.82 μg/L	8.2 μg/L

Method Blanks, continued

Samples	Compound	Qualification
002G01DA03 002G05UA03	methylene chloride	CRQL
002G01UA03	acetone	U

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
002G08UA03	acetone	+	J
002G10UA03	acetone	+	J
002G03UA03	acetone	+	J
002G01DA03 002G01UA03 002G05UA03 002G08DA03 002G10DA03 002G14DA03 OGMG02DA03 OGMG05DA03	acetone	+/-	J/UJ
002G01DA03 002G05UA03	methylene chloride	+B	CRQL
002G01UA03	acetone	+B	U

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non detect result

DATA ASSESSMENT AND NARRATIVE

SEMIVOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the U.S. EPA SW846 8270; National Functional Guidelines for Organic Data Review, and DQO Level IV. All comments made within this report should be considered when examining the analytical results (Form I's).

SDG # MEM14

A validation was performed on the Semivolatile Data from SDG MEM14. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
	•	Blanks
*	•	Surrogate Recoveries
*	•	Laboratory Control Sample
*	•	Field Duplicates
*	•	Compound Identification /Quantitation

* - All criteria were met for this parameter

Blanks

The end user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moisture as associated samples. These factors must be taken into consideration when applying the 5X and 10X criteria to field samples.

Method Blanks

Associated blank	Compound	Concentration	Action Level
0429A-GMB	bis(2-ethylhexyl)phthalate	0.87 ug/L	8.7 ug/L
0430B-JMB	bis(2-ethylhexyl)phthalate	1.1 ug/L	11 ug/L

Samples	Compound	Qualification
002G03UA03 002G13DA03 002G05UA03 002G10DA03	bis(2-ethylhexyl)phthalate	CRQL

System Performance and Overall Assessment

The laboratory did not encounter any large problems. The data as presented requires qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
002G03UA03	bis(2-ethylhexyl)phthalate	+	CRQL
002G13DA03			
002G05UA03			
002G10DA03			

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

PESTICIDE/AROCLORS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8080; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level IV requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM14

A validation was performed on the Pesticide/Aroclor Data from SDG MEM14. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC Performance
*	•	Calibration
	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
	•	Compound Quantitation

* - All criteria were met for this parameter.

Contractual Non-Compliance

The method requires that all target compounds, including the multi-component compounds, be analyzed with a five (5) point calibration curve. The laboratory analyzed a single point curve for the Aroclors 1221, 1232, 1242, 1248, and 1254. No positive results were reported for the compounds analyzed with a single point calibration, therefore the data did not require qualification.

QC Blanks

The associated field blank exhibited contamination for target compounds and qualifications were required. The end user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moistures as associated samples. These factors must be taken into consideration when applying the 5X criteria to field samples. The QC blank results were compared to the associated samples.

Blank ID	Compound	Concentration	Action Level
002F042597	Dieldrin	0.0038 J μg/L	0.019 μg/L
	Endrin	0.0046 J μg/L	0.023 μg/L

The following samples have been qualified for blank contamination.

Sample	Compound	Qualification
002G02UA03	Dieldrin	CRQL
002G14UA03		

Compound Identification/Quantitation

Several samples exhibited column quantitation %Ds greater than 25%. The following guidelines were used to qualify the data:

1. No qualifications are required for positive sample results which exhibited column quantitation differences $<40\%$. The "P" flag is removed from the result.

2. The positive sample result which exhibited a column quantitation difference $>40\%$, but $\leq 100\%$ is qualified as estimated, J.

3. The positive single component pesticide sample result which exhibited a column quantitation difference $>100\%$ and is $<10X$ the respective compound CRQL, is qualified as non-detect, U. (All multi-component results are exempt from this rule.)

Compound Identification/Quantitation

4. The positive single component pesticide sample result which exhibited a column quantitation difference >100% and >10X the respective compound CRQL, is qualified as presumptively present at an estimated concentration, NJ. (All multi-component results are exempt from this rule.)

5. The positive multi-component pesticide sample result which exhibited a column quantitation difference >100% and <10X the respective multi-component CRQL is qualified as presumptively present at an estimated concentration, NJ.

The following samples and compounds have been qualified for high column quantitation %Ds.

Sample ID	Compound	%D	Lab Qual.	HESI Qual.	Ref. #
002G02UA03	Dieldrin	70.0%	P	J	2
002G10UA03	Methoxychlor	243.5%	P	U	3

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is considered presumptively present at an estimated concentration

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
002G02UA03 002G14UA03	Dieldrin	+	CRQL
ALL	All P < 40%	+	
ALL	All P > 40% But ≤ 100%	+	J
ALL	single component pests All P > 100% And < 10X CRQL	+	U
ALL	single component pests All P > 100% And > 10X CRQL	+	NJ
ALL	multi-component pests All P> 100% And < 10X CRQL	+	NJ

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE

CHLORINATED HERBICIDES

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8151; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level IV requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM14

A validation was performed on the Herbicide Data from SDG MEM14. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC Performance
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
	•	Compound Quantitation

* - All criteria were met for this parameter.

Compound Quantitation

One (1) sample was re-extracted due to low surrogate recoveries. For the following sample, the results from the original analysis are not used in favor of the results reported from the RE analysis.

002G03UA03

Compound Quantitation, Continued

Several samples exhibited column quantitation %Ds greater than 25%. The following guidelines were used to qualify the data:

1. No qualifications are required for positive sample results which exhibited column quantitation differences <40%. The "P" flag is removed from the result.

2. The positive sample result which exhibited a column quantitation difference >40%, but ≤100% is qualified as estimated, J.

3. The positive sample result which exhibited a column quantitation difference >100% and is <10X the respective compound CRQL, is qualified as non-detect, U.

4. The positive sample result which exhibited a column quantitation difference >100% and >10X the respective compound CRQL, is qualified as presumptively present at an estimated concentration, NJ.

The following samples and compounds have been qualified for high column quantitation %Ds.

Sample ID	Compound	%D	Lab Qual.	HESI Qual.	Ref. #
002G04UA03	Dicamba	38.7%	P		1
OGMG02DA03	Dicamba	85.7%	P	J	2
OGMG03DA03	MCPP	328.6%	P	U	3

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
002G03UA03	ALL	+/-	Not Used
ALL	All P < 40%	+	
ALL	All P > 40% But ≤ 100%	+	J
ALL	All P > 100% And < 10X CRQL	+	U
ALL	All P > 100% And > 10X CRQL	+	NJ

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE

ORGANOPHOSPHORUS PESTICIDES

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8141; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level IV requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM14

A validation was performed on the Organophosphorus Pesticide Data from SDG MEM14. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • GC Performance
* • Calibration
* • Blanks
* • Surrogate Recoveries
* • Matrix Spike/Matrix Spike Duplicates
* • Field Duplicates
* • Compound Identification
* • Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is considered presumptively present at an estimated concentration

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE
GASOLINE RANGE ORGANICS ANALYSIS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the TDEC Method TPH-GRO; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM14

A validation was performed on the Gasoline Range Organics Data from SDG MEM14. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE
DIESEL RANGE ORGANICS ANALYSIS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the TDEC Method THP-DRO; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM14

A validation was performed on the Diesel Range Organics Data from SDG MEM14. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

METHANE

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Savannah Laboratories' SOP (AR30:08.11.94); the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level IV requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM14

A validation was performed on the Methane Data from SDG MEM14. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC Performance
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is considered presumptively present at an estimated concentration

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE
METALS, TPH AND CYANIDE

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Methods; the Functional Guidelines for Inorganic Data Validation, February 1994, and DQO Level IV requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM14

A validation was performed on the Metals, TPH and Cyanide Data from SDG MEM14. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	Calibrations
	•	Blanks
*	•	Interferences
	•	Matrix Spike Recovery
*	•	Matrix Duplicates
*	•	Field Duplicates
*	•	Laboratory Control Samples
*	•	Serial Dilutions
	•	Post Digestion Spiking

* - All criteria were met for this parameter.

Preparation and Field Blanks

The preparation blank exhibited contamination for the following elements.

Elements	Conc.	Samples affected
Barium	1.27 ug/l	no impact
Beryllium	0.48 ug/l	all water samples below 2.4 ug/l
Copper	3.99 ug/l	all water samples below 20.0 ug/l
Iron	9.38 ug/l	no impact
Manganese	2.59 ug/l	no impact
Zinc	1.32 ug/l	all water samples below 6.6 ug/l

The calibration blanks exhibited contamination for the following elements.

Elements	Conc.	Samples affected
Chromium	3.8 ug/l	all water samples below 19.0 ug/l
Vanadium	3.6 ug/l	all water samples below 18.0 ug/l
Zinc	3.1 ug/l	all water samples below 15.5 ug/l

The USEPA requires that all sample values below five times the preparation or calibration blank contamination be qualified as non-detect, "U". The field or DI water blanks exhibited contamination but had no impact on the data.

The preparation blank exhibited negative bias for the following elements.

Elements	Conc.	Samples affected
Silver	-2.02 ug/l	all water samples below 20.2 ug/l

This reviewer qualifies all samples results below ten times the negative bias as estimated, "J" or "UJ".

Matrix Spike Analysis

The Matrix Spike recovery for waters for Selenium (59%) was below the lower control limits (>10% but <75%). All positive and non-detect results are qualified as estimated, "J" or "UJ".

Post Digestion Spiking

The post digestion spike recovery for GFAA was below the lower control limits (>10% but <85%). All positive and non-detect results for the listed samples below are qualified as estimated, "J" or "UJ".

Element	Sample IDs	% recoveries
Thallium	002G08UA03	57
Selenium	002G01DA03	59
Selenium	002G01UA03	56
Selenium	002G02UA03	65
Selenium	002H02UA03	70
Selenium	002G03UA03	46
Selenium	002G04UA03	49
Selenium	002G05DA03	64
Selenium	002G05UA03	52
Selenium	002G08DA03	53
Selenium	002G08UA03	60
Selenium	002G10DA03	42
Selenium	002G10UA03	47

ENSAFE VALIDATION SUMMARY REPORT

Site Name: Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.: 0106-001-04-730-00
Laboratory: Savannah Laboratories, Savannah, Georgia
Sample Delivery Groups: MEM14
Matrix: Water
DQO Level: III
Analysis:

Alkalinity (EPA 310.1)	Biochemical Oxygen Demand (EPA 405.1)	Chloride (EPA 300.0)
Chemical Oxygen Demand (EPA 410.2)	Hardness (EPA 130.2)	Heterotrophic Plate Count (SM 9215B)
Kjeldahl Nitrogen (EPA 351.2)	Nitrate (EPA 353.2)	Sulfate (EPA 300.0)
Total Dissolved Solids (EPA 160.1)	Total Organic Carbon (EPA 415.1)	Total Phosphorus (EPA 365.4)
Total Suspended Solids (EPA 160.2)	Turbidity (EPA 180.1)	

SDG MEM14 Sample IDs

002G01DA03	002G05UA03	002G13MA03
002G01UA03	002G08DA03	002G13UA03
002G02UA03	002G08UA03	002G14DA03
002H02UA03 (Dup of 002G02UA03)	002G10DA03	002G14UA03
002G03UA03	002G10UA03	0GMG02DA03
002G04UA03	002G11UA03	0GMG03DA03
002G05DA03	002G13DA03	0GMG05DA03

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

General Chemistry Evaluation

1. All holding times, calibration verification, blank analysis, and laboratory control samples were acceptable. A matrix spike/matrix spike duplicate was not analyzed with this SDG.

2. Samples 002G02UA03 and 002H02UA03 were field duplicates. The relative percent difference was calculated and the following parameters were outside the QC limit of <30%: heterotrophic plate count, kjeldahl nirtogen, turbidity, and total suspended solids. Results for these parameters were estimated ("J" flagged), for the sample and duplicate only.

Selenium	002G11UA03	62
Selenium	002G13DA03	42
Selenium	002G13MA03	49
Selenium	002G13UA03	71
Selenium	002G14DA03	47
Selenium	002G14UA03	47
Selenium	0GMG02DA03	65
Selenium	0GMG03DA03	73
Selenium	0GMG05DA03	61

The post digestion spike recovery for GFAA was above the upper control limits (>115%). All positive results for the listed samples below are qualified as estimated, "J".

Element	Sample IDs	% recoveries
Arsenic	002H02UA03	118

"B" qualifier

All sample results left with a "B" qualifier after all other qualifications, will be qualified with a "J" qualifier in place of the "B" per Ensafe's request.

Data Validation Report

SDG MEM15

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

JUL 1

Data Validation Report

SDG#:	MEM15
Date:	June 27, 1997
Client Name:	Ensafe/ Allen & Hoshall
Project/Site Name:	NSA Memphis
Date Sampled:	April 28-30, 1997
Number of Samples:	28 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Savannah Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, June 1991 and February, 1994, respectively
QA/QC Level:	EPA DQO Level III
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volatiles, Semivolatiles, Pesticide/PCB's, Herbicides, Organophosphorus Pesticides, Petroleum Hydrocarbons, Gasoline Range Organics, Diesel Range Organics, Methane, APX9 Metals, Cyanide, Iron, Manganese

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user in urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig B. Searcy for Paul B. Humburg, President

6/30/97
Date

4127 Plaza 94 South · St. Charles, MO 63304
(314) 936-1332 · Fax (314) 936-1335

SDG# MEM15

Samples and Fractions Reviewed

Sample Identifications — Analytical Fractions

ENSAFE ID	MATRIX	VOA		SVOA		P/P		HERB		OPP		TPH		GRO		DRO		METH		TAL		CN		FE		MN	
000T042897	WATER	X																									
000T042997	WATER	X																									
000T043097	WATER	X																									
002G06UA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G07UA03	WATER	X		X		X		X		X		X		X		X				X		X					
009G01DA03	WATER	X										X		X		X		X						X		X	
009H01DA03	WATER	X										X		X		X		X						X		X	
009G02DA03	WATER	X										X		X		X		X						X		X	
009G03DA03	WATER	X										X		X		X		X						X		X	
009F043097	WATER	X										X		X		X		X						X		X	
009G04DA03	WATER	X										X		X		X											
00BT042997	WATER	X																									
00EE042997	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
014G01LS03	WATER	X										X		X		X											
059G02LS03	WATER	X				X												X						X		X	
059H02LS03	WATER	X				X												X						X		X	
059G03LS03	WATER	X				X												X						X		X	
059G03UF03	WATER	X				X												X						X		X	
059F042997	WATER	X				X												X						X		X	
065G01UA03	WATER	X										X		X		X		X						X		X	
065G02UA03	WATER	X										X		X		X											
065G03UA03	WATER	X										X		X		X											
065F042997	WATER	X										X		X		X		X						X		X	
065G04UA03	WATER	X										X		X		X											
065G05UA03	WATER	X										X		X		X		X						X		X	
065G06DA03	WATER	X										X		X		X		X						X		X	
065G06UA03	WATER	X										X		X		X											
0GMG01DA03	WATER	X		X		X		X		X		X		X		X				X		X					
Total Billable Samples	(Water/Soil	28	0	4	0	9	0	4	0	4	0	19	0	19	0	19	0	15	0	4	0	4	0	15	0	15	0

VOA= SW846 Volatiles
SVOA= SW846 Semivolatiles
P/P= SW846 Pesticides/PCB's
HERB= SW846 Herbicides
OPP= SW846 Organophosphorus Pesticides
TPH= SW846 Petroleum Hydrocarbons
GRO= SW846 Gasoline Range Organics

DRO= SW846 Diesel Range Organics
METH= SW846 Methane
TAL= SW846 APX9 Metals
CN= SW846 Cyanide
FE= SW846 Iron
MN= SW846 Manganese

DATA ASSESSMENT NARRATIVES

DATA ASSESSMENT NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW-846 Method 8240; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM15

A validation was performed on the Volatile Data from SDG MEM15. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibration
	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Internal Standard Performance
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

Field QC Blanks

Qualifications were required due to contamination in one (1) of the trip blanks associated with the samples in this SDG. The end-user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moisture as associated samples. These factors must be taken into consideration when applying the 5X or 10X criteria to field samples.

Field QC Blanks, continued

Associated Blank	Compound	Conc.	Action Level
000T042997	toluene	3.8 μg/L	19 μg/L

Samples	Compound	Qualification
065G03UA03	toluene	CRQL

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
065G03UA03	toluene	+	CRQL

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non detect result

DATA ASSESSMENT AND NARRATIVE

SEMIVOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the U.S. EPA SW846 8270; National Functional Guidelines for Organic Data Review, and DQO Level III. All comments made within this report should be considered when examining the analytical results (Form I's).

SDG # MEM15

A validation was performed on the Semivolatile Data from SDG MEM15. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibrations
*	•	Internal Standard Performance
	•	Blanks
*	•	Surrogate Recoveries
*	•	Laboratory Control Sample
*	•	Field Duplicates
*	•	Compound Identification /Quantitation

* - All criteria were met for this parameter

Continuing calibrations

The continuing calibrations that were analyzed with this data package exhibited %Ds that were not within %D continuing calibration criteria. All average RRFs were within calibration criteria. Qualifications are required.

Continuing calibrations (continued)

The continuing calibration, GQ256, contained compounds with %Ds greater than 50% but less than 90%. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J) and all non detects as estimated (UJ).

0GMG01DA03	bis(2-chloroisopropyl)ether (84.4%)
002G06UA03	n-nitroso-di-n-propylamine (57.5%)
002G07UA03	3&4 methylphenol (51.9%)

Blanks

The end user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moisture as associated samples. These factors must be taken into consideration when applying the 5X and 10X criteria to field samples.

Method Blanks

Associated blank	Compound	Concentration	Action Level
0502D-GMB	bis(2-ethylhexyl)phthalate	1.7 ug/L	17 ug/L

Samples	Compound	Qualification
0GMG01DA03	bis(2-ethylhexyl)phthalate	CRQL
002G06UA03		
002G07UA03		

System Performance and Overall Assessment

The laboratory did not encounter any large problems. The data as presented requires qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
0GMG01DA03	bis(2-chloroisopropyl)ether	+/-	J/UJ
002G06UA03	n-nitroso-di-n-propylamine		
002G07UA03	3&4 methylphenol		
0GMG01DA03	bis(2-ethylhexyl)phthalate	+	CRQL
002G06UA03			
002G07UA03			

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

PESTICIDE/AROCLORS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8080; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM15

A validation was performed on the Pesticide/Aroclor Data from SDG MEM15. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC Performance
*	•	Calibration
*	•	Blanks
	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
	•	Compound Quantitation

* - All criteria were met for this parameter.

Contractual Non-Compliance

The method requires that all target compounds, including the multi-component compounds, be analyzed with a five (5) point calibration curve. The laboratory did not analyze a five (5) point curve for Aroclors 1221, 1232, 1242, 1248, or 1254. No positive results were reported for the compounds analyzed with a single point calibration, therefore the data did not require qualification.

Surrogate Recoveries

The sample listed below exhibited a high TCX recovery. The positive results are qualified as estimated, J.

Sample ID	Surrogate	% Recovery
059H02LS03	TCX-1	141%

Compound Identification/Quantitation

Due to coeluting matrix interferences, Heptachlor Epoxide did not confirm in two (2) samples and was flagged X by the laboratory. The sample concentrations were too low for GC/MS confirmation. It is the professional opinion of the data validator that these results be considered presumptively present at an estimated concentration. For the following samples and compound, the positive results which did not meet the confirmation criteria are qualified as presumptively present at an estimated concentration, NJ.

059G02LS03	Heptachlor Epoxide
059H02LS03	

Several samples exhibited column quantitation %Ds greater than 40%. The following guidelines were used to qualify the data:

1. No qualifications are required for positive sample results which exhibited column quantitation differences <40%. The "P" flag is removed from the result.

2. The positive sample result which exhibited a column quantitation difference >40%, but ≤100% is qualified as estimated, J.

3. The positive single component pesticide sample result which exhibited a column quantitation difference >100% and is <10X the respective compound CRQL, is qualified as non-detect, U. (All multi-component results are exempt from this rule.)

4. The positive single component pesticide sample result which exhibited a column quantitation difference >100% and >10X the respective compound CRQL, is qualified as presumptively present at an estimated concentration, NJ. (All multi-component results are exempt from this rule.)

Compound Identification/Quantitation, Continued

5. The positive multi-component pesticide sample result which exhibited a column quantitation difference >100% is qualified as presumptively present at an estimated concentration, NJ.

The following samples and compounds have been qualified for high column quantitation %Ds.

Sample ID	Compound	%D	Lab Qual.	HESI Qual.	Ref. #
059H02LS03	Dieldrin	100.0%	P	J	2

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is considered presumptively present at an estimated concentration

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
059H02LS03	ALL	+	J
059G02LS03 059H02LS03	Heptachlor Epoxide	+X	NJ
ALL	All P < 40%	+	
ALL	All P > 40% But ≤ 100%	+	J
ALL	single component pests All P > 100% And < 10X CRQL	+	U
ALL	single component pests All P > 100% And > 10X CRQL	+	NJ
ALL	multi-component pests All P> 100% And < 10X CRQL	+	NJ

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

SUMMARY OF DATA QUALIFICATIONS

Sample ID	Analyte	DL	QL
All water samples below 2.4 ug/l	Be.	+	U
All water samples below 20.0 ug/l	Cu.		
All water samples below 19.0 ug/l	Cr.		
All water samples below 18.0 ug/l	V.		
All water samples below 15.5 ug/l	Zn.		
All water samples below 20.2 ug/l	Ag.	+/U	J/UJ
All water samples	Se.	+/U	J/UJ
002G08UA03.	Tl.	+/U	J/UJ
002G01DA03, 002G01UA03, 002G02UA03, 002H02UA03, 002G03UA03, 002G04UA03, 002G05DA03, 002G05UA03, 002G08DA03, 002G08UA03, 002G10DA03, 002G10UA03, 002G11UA03, 002G13DA03, 002G13MA03, 002G13UA03, 002G14DA03, 002G14UA03, 0GMG02DA03, 0GMG03DA03 and 0GMG05DA03.	Se.		
002H02UA03.	As.	+	J
All "B" results	all analytes	B	J

DATA ASSESSMENT NARRATIVE

CHLORINATED HERBICIDES

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8151; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM15

A validation was performed on the Herbicide Data from SDG MEM15. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • GC Performance
* • Calibration
* • Blanks
* • Surrogate Recoveries
* • Matrix Spike/Matrix Spike Duplicates
* • Field Duplicates
* • Compound Identification
* • Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE

ORGANOPHOSPHORUS PESTICIDES

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8141; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM15

A validation was performed on the Organophosphorus Pesticide Data from SDG MEM15. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • GC Performance
* • Calibration
* • Blanks
* • Surrogate Recoveries
* • Matrix Spike/Matrix Spike Duplicates
* • Field Duplicates
* • Compound Identification
* • Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is considered presumptively present at an estimated concentration

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE
GASOLINE RANGE ORGANICS ANALYSIS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the TDEC Method TPH-GRO; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM15

A validation was performed on the Gasoline Range Organics Data from SDG MEM15. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE
DIESEL RANGE ORGANICS ANALYSIS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the TDEC Method THP-DRO; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM15

A validation was performed on the Diesel Range Organics Data from SDG MEM15. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

METHANE

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Savannah Laboratories' SOP (AR30:08.11.94); the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM15

A validation was performed on the Methane Data from SDG MEM15. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC Performance
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
	•	Compound Quantitation

* - All criteria were met for this parameter.

Compound Identification/Quantitation

Several samples required dilution to accurately quantitate target compounds. For the following samples, the original analysis are not used in favor of the results reported from the dilution analysis.

009G01DA03
009H01DA03

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is considered presumptively present at an estimated concentration

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
009G01DA03	ALL	+/-	Not Used
009H01DA03			

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE
METALS, TPH AND CYANIDE

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Methods; the Functional Guidelines for Inorganic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM15

A validation was performed on the Metals, TPH and Cyanide Data from SDG MEM15. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	Calibrations
	•	Blanks
*	•	Interferences
*	•	Matrix Spike Recovery
*	•	Matrix Duplicates
*	•	Field Duplicates
*	•	Laboratory Control Samples
*	•	Serial Dilutions
	•	Post Digestion Spiking

* - All criteria were met for this parameter.

Preparation and Field Blanks

The preparation blank exhibited contamination for the following elements.

Elements	Conc.	Samples affected
Selenium	2.73 ug/l	all water samples below 13.7 ug/l

The calibration blanks exhibited contamination for the following elements.

Elements	Conc.	Samples affected
Barium	2.4 ug/l	no impact
Cobalt	2.4 ug/l	no impact

Copper	2.9 ug/l	all water samples below 14.5 ug/l
Iron	27.6 ug/l	no impact
Manganese	3.7 ug/l	no impact
Zinc	3.5 ug/l	all water samples below 17.5 ug/l

The USEPA requires that all sample values below five times the preparation or calibration blank contamination be qualified as non-detect, "U". The field or DI water blanks exhibited contamination but had no impact on the data.

The preparation blank exhibited negative bias for the following elements.

Elements	Conc.	Samples affected
Barium	-1.1 ug/l	no impact
Beryllium	-0.41 ug/l	all water samples below 4.1 ug/l
Manganese	-1.78 ug/l	no impact

This reviewer qualifies all samples results below ten times the negative bias as estimated, "J" or "UJ".

Post Digestion Spiking

The post digestion spike recovery for GFAA was below the lower control limits (>10% but <85%). All positive and non-detect results for the listed samples below are qualified as estimated, "J" or "UJ".

Element	Sample IDs	% recoveries
Selenium	OGMG01DA03	65
Selenium	002G06UA03	64
Selenium	002G07UA03	73
Thallium	OGMG01DA03	82
Thallium	002G07UA03	80

The post digestion spike recovery for GFAA was above the upper control limits (>115%). All positive results for the listed samples below are qualified as estimated, "J".

Element	Sample IDs	% recoveries
Arsenic	002G06UA03	117

"B" qualifier

All sample results left with a "B" qualifier after all other qualifications, will be qualified with a "J" qualifier in place of the "B" per Ensafe's request.

SUMMARY OF DATA QUALIFICATIONS

Sample ID	Analyte	DL	QL
All water samples below 13.7 ug/l	Se.	+	U
All water samples below 14.5 ug/l	Cu.		
All water samples below 17.5 ug/l	Zn.		
All water samples below 4.1 ug/l	Be.	+/U	J/UJ
002G06UA03, 002G07UA03 and OGMG01DA03.	Se.	+/U	J/UJ
OGMG01DA03 and 002G07UA03.	Tl.		
002G06UA03.	As.	+	J
All "B" results	all analytes	B	J

Data Validation Report

SDG MEM21

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

Data Validation Report

SDG#:	MEM21
Date:	June 27, 1997
Client Name:	Ensafe/ Allen & Hoshall
Project/Site Name:	NSA Memphis
Date Sampled:	May 7-8, 1997
Number of Samples:	4 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Savannah Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, June 1991 and February, 1994, respectively
QA/QC Level:	EPA DQO Level III
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volatiles, Semivolatiles, Pesticide/PCB's, Herbicides, Organophosphorus Pesticides, Petroleum Hydrocarbons, Gasoline Range Organics, Diesel Range Organics, Methane, APX9 Metals, Cyanide, Iron, Manganese

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user in urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig B. Searfoss
Paul B. Humburg, President

6/30/97
Date

4127 Plaza 94 South · St. Charles, MO 63304
(314) 936-1332 · Fax (314) 936-1335

SDG# MEM21

Samples and Fractions Reviewed

Sample Identifications — Analytical Fractions

ENSAFE ID	MATRIX	VOA		SVOA		P/P		HERB		OPP		TPH		GRO		DRO		METH		TAL		CN		FE		MN	
002G12DA03	WATER	X		X		X		X		X		X		X		X				X		X					
002G12UA03	WATER	X		X		X		X		X		X		X		X		X		X		X		X		X	
065G07UA03	WATER	X										X		X		X		X						X		X	
065H07UA03	WATER	X										X		X		X		X						X		X	
Total Billable Samples	(Water/Soil)	4	0	2	0	2	0	2	0	2	0	4	0	4	0	4	0	3	0	2	0	2	0	3	0	3	0

VOA = SW846 Volatiles
SVOA = SW846 Semivolatiles
P/P = SW846 Pesticides/PCB's
HERB = SW846 Herbicides
OPP = SW846 Organophosphorus Pesticides
TPH = SW846 Petroleum Hydrocarbons
GRO = SW846 Gasoline Range Organics
DRO = SW846 Diesel Range Organics
METH = SW846 Methane
TAL = SW846 APX9 Metals
CN = SW846 Cyanide
FE = SW846 Iron
MN = SW846 Manganese

DATA ASSESSMENT NARRATIVES

DATA ASSESSMENT NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW-846 Method 8240; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM21

A validation was performed on the Volatile Data from SDG MEM21. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Internal Standard Performance
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

Continuing Calibrations

The continuing calibration IQ467 contained one (1) compound with a %D greater than 90% . For the samples and non-compliant compound listed below, the positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

065G07UA03	4-methyl-2-pentanone (91.8%)
065H07UA03	

Continuing Calibrations, continued

The continuing calibration IQ467 contained one (1) compound with a %D greater than 50% but less than 90%. For the samples and non-compliant compound listed below, the positive results are qualified as estimated, J, and the non-detect results are qualified as estimated, UJ.

065G07UA03	acetone (88.0%)
065H07UA03	

The continuing calibration IQ471 contained one (1) compound with a %D greater than 50% but less than 90%. For the samples and non-compliant compound listed below, the positive results are qualified as estimated, J, and the non-detect results are qualified as estimated, UJ.

002G12DA03	bromomethane (65.2%)
002G12UA03	

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
065G07UA03 065H07UA03	4-methyl-2-pentanone	+/-	J/UR
065G07UA03 065H07UA03	acetone	+/-	J/UJ
002G12DA03 002G12UA03	bromomethane	+/-	J/UJ

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non detect result

DATA ASSESSMENT AND NARRATIVE

SEMIVOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the U.S. EPA SW846 8270; National Functional Guidelines for Organic Data Review, and DQO Level III. All comments made within this report should be considered when examining the analytical results (Form I's).

SDG # MEM21

A validation was performed on the Semivolatile Data from SDG MEM21. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Laboratory Control Sample
*	•	Field Duplicates
*	•	Compound Identification /Quantitation

* - All criteria were met for this parameter

System Performance and Overall Assessment

The laboratory did not encounter any large problems. The data as presented requires no qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	ANALYTE ID	DL	QL

No qualifications are required.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

PESTICIDE/AROCLORS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8080; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM21

A validation was performed on the Pesticide/Aroclor Data from SDG MEM21. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC Performance
*	•	Calibration
	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

Contractual Non-Compliance

The method requires that all target compounds, including the multi-component compounds, be analyzed with a five (5) point calibration curve. The laboratory analyzed a single point curve for the Aroclors 1221, 1232, 1242, 1248, and 1254. No positive results were reported for the compounds analyzed with a single point calibration, therefore the data did not require qualification.

Method Blanks

The associated method blank exhibited contamination for Methoxychlor and qualifications were required. The end user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moistures as associated samples. These factors must be taken into consideration when applying the 5X criteria to field samples. The method blank results were compared to the associated samples.

Blank ID	Compound	Concentration	Action Level
0514P-KMB	Methoxychlor	0.0031 JP µg/L	0.155 µg/L

The following samples have been qualified for method blank contamination.

Sample	Compound	Qualification
002G12DA03	Methoxychlor	CRQL

QC Blanks

The associated field blank exhibited contamination for target compounds and qualifications were required. The end user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moistures as associated samples. These factors must be taken into consideration when applying the 5X criteria to field samples. The QC blank results were compared to the associated samples.

Blank ID	Compound	Concentration	Action Level
002F042597	Dieldrin	0.0038 J µg/L	0.019 µg/L
	Endrin	0.0046 J µg/L	0.023 µg/L

The following samples have been qualified for QC blank contamination.

Sample	Compound	Qualification
002G12UA03	Dieldrin	CRQL

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is considered presumptively present at an estimated concentration

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
002G12DA03	Methoxychlor	+	CRQL
002G12UA03	Dieldrin	+	CRQL

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE

CHLORINATED HERBICIDES

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8151; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM21

A validation was performed on the Herbicide Data from SDG MEM21. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • GC Performance
* • Calibration
* • Blanks
* • Surrogate Recoveries
* • Matrix Spike/Matrix Spike Duplicates
* • Field Duplicates
* • Compound Identification
* • Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE

ORGANOPHOSPHORUS PESTICIDES

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8141; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM21

A validation was performed on the Organophosphorus Pesticide Data from SDG MEM21. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • GC Performance
* • Calibration
* • Blanks
* • Surrogate Recoveries
* • Matrix Spike/Matrix Spike Duplicates
* • Field Duplicates
* • Compound Identification
* • Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is considered presumptively present at an estimated concentration

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE
GASOLINE RANGE ORGANICS ANALYSIS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the TDEC Method TPH-GRO; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM21

A validation was performed on the Gasoline Range Organics Data from SDG MEM21. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Calibration
* • Blanks
* • Surrogate Recoveries
* • Matrix Spike/Matrix Spike Duplicates
* • Field Duplicates
* • Compound Identification
* • Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE
DIESEL RANGE ORGANICS ANALYSIS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the TDEC Method THP-DRO; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM21

A validation was performed on the Diesel Range Organics Data from SDG MEM21. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

METHANE

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Savannah Laboratories' SOP (AR30:08.11.94); the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM21

A validation was performed on the Methane Data from SDG MEM21. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC Performance
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

System Performance and Overall Assessment

The data did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is considered presumptively present at an estimated concentration

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED.

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE
METALS, TPH AND CYANIDE

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Methods; the Functional Guidelines for Inorganic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM21

A validation was performed on the Metals, TPH and Cyanide Data from SDG MEM21. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	Calibrations
	•	Blanks
*	•	Interferences
*	•	Matrix Spike Recovery
*	•	Matrix Duplicates
*	•	Field Duplicates
*	•	Laboratory Control Samples
*	•	Serial Dilutions
	•	Post Digestion Spiking

* - All criteria were met for this parameter.

Preparation and Field Blanks

The preparation blank exhibited contamination for the following elements.

Elements	Conc.	Samples affected
Barium	2.21 ug/l	no impact
Copper	2.96 ug/l	all water samples below 14.8 ug/l
Iron	48.2 ug/l	no impact
Selenium	2.75 ug/l	all water samples below 13.8 ug/l
Zinc	2.1 ug/l	all water samples below 10.5 ug/l

The calibration blanks exhibited contamination for the following elements.

Elements	Conc.	Samples affected
Tin	13.0 ug/l	no impact

The USEPA requires that all sample values below five times the preparation or calibration blank contamination be qualified as non-detect, "U". The field or DI water blanks exhibited contamination but had no impact on the data.

The preparation blank exhibited negative bias for the following elements.

Elements	Conc.	Samples affected
Beryllium	-0.71 ug/l	all water samples below 7.1 ug/l

This reviewer qualifies all samples results below ten times the negative bias as estimated, "J" or "UJ".

Post Digestion Spiking

The post digestion spike recovery for GFAA was below the lower control limits (>10% but <85%). All positive and non-detect results for the listed samples below are qualified as estimated, "J" or "UJ".

Element	Sample IDs	% recoveries
Selenium	002G12DA03	59

The post digestion spike recovery for GFAA was above the upper control limits (>115%). All positive results for the listed samples below are qualified as estimated, "J".

Element	Sample IDs	% recoveries
Arsenic	002G12DA03	117

"B" qualifier

All sample results left with a "B" qualifier after all other qualifications, will be qualified with a "J" qualifier in place of the "B" per Ensafe's request.

SUMMARY OF DATA QUALIFICATIONS

Sample ID	Analyte	DL	QL
All water samples below 14.8 ug/l	Cu.	+	U
All water samples below 13.8 ug/l	Se.		
All water samples below 10.5 ug/l	Zn.		
All water samples below 7.1 ug/l	Be.	+/U	J/UJ
002G12DA03.	Se.	+/U	J/UJ
002G12DA03.	As.	+	J
All "B" results	all analytes	B	J

ENSAFE VALIDATION SUMMARY REPORT

Site Name: Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.: 0106-001-04-730-00
Laboratory: Savannah Laboratories, Savannah, Georgia
Sample Delivery Groups: MEM21
Matrix: Water
DQO Level: III
Analysis:

Alkalinity (EPA 310.1)	Biochemical Oxygen Demand (EPA 405.1)	Chloride (EPA 300.0)
Chemical Oxygen Demand (EPA 410.2)	Hardness (EPA 130.2)	Heterotrophic Plate Count (SM 9215B)
Kjeldahl Nitrogen (EPA 351.2)	Nitrate (EPA 353.2)	Sulfate (EPA 300.0)
Total Dissolved Solids (EPA 160.1)	Total Organic Carbon (EPA 415.1)	Total Phosphorus (EPA 365.4)
Total Suspended Solids (EPA 160.2)	Turbidity (EPA 180.1)	

SDG MEM21 Sample ID
002G12UA03

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

General Chemistry Evaluation

1. All holding times, calibration verification, blank analysis, and laboratory control samples were acceptable.

2. The total kjeldahl nitrogen %R (89%) of one check standard was slightly below the control limits of 90% to 110%. The positive total kjeldahl nitrogen result in sample 002G12UA03 was qualified as estimated "J."

3. The total kjeldahl nitrogen matrix spike %R (68%) was slightly below the control limits of 75% - 125%. The positive total kjeldahl nitrogen result in sample 002G12UA03 was qualified as estimated "J."

4. The nitrate %R (86%) of one check standard was slightly below the control limits of 90% to 110%. The positive nitrate result in sample 002G12UA03 was qualified as estimated "J."

5. The total phosphorus %R for one initial calibration point (77%) and two check standards (87%, 82%) were below the control limits of 90% to 110%. The positive total phosphorus result in sample 002G12UA03 was qualified as estimated "J."

Data Validation Report

SDG MEM30

ENSAFE VALIDATION SUMMARY REPORT

Site Name:	Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.:	0106-001-04-730-00
Laboratory:	Savannah Laboratories, Savannah, Georgia
Sample Delivery Groups:	MEM30
Matrix:	Water
DQO Level:	III
Analysis:	Volatile Organic Compounds by SW-846 8260

SDG MEM30 Sample IDs

002G002904	002H003206 (Dup of 002G003206)
002G003005	002G003306
002G003105	002G003404
002G003206	

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

Volatile Organic Compound Evaluation

1. All holding times, GC/MS instrument performance check results, initial calibration results, continuing calibration results, surrogate results, internal standard results, and field duplicate results were acceptable. A matrix spike/matrix spike duplicate was not analyzed with this SDG.

2. Acetone and carbon disulfide were identified in the method blank at concentrations of 8.7 μg/L and 1.3 μg/L, respectively. Carbon disulfide was also identified in trip blanks 002T082097 and 002T083197 at concentrations of 1.6 μg/L and 1.8 μg/L, respectively. Acetone in samples 002G002904 and 002G003404 was qualified as nondetect "U" due to concentrations less than the action level of 87 μg/L. Carbon disulfide was qualified as nondetect "U" due to concentrations less than action levels of 6.5 μg/L, 8 μg/L, and 9 μg/L in all samples except 002G002904, which was already reported as nondetect.

Data Validation Report

SDG MEM36

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

Data Validation Report

SDG#:	MEM36
Date:	February 10, 1998
Client Name:	EnSafe
Project/Site Name:	NSA Memphis
Date Sampled:	November 12-14, 1997
Number of Samples:	19 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Savannah Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, February, 1994
QA/QC Level:	EPA DQO Level III
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volátiles, Methane, Diesel Range Organics, Gasoline Range Organics, Total Petroleum Hydrocarbons, Iron, Manganese

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig G. Simpson
for Paul B. Humburg, President

2/13/98.
Date

4127 Plaza 94 South · St. Charles, MO 63304
(314) 936-1332 · Fax (314) 936-1335

SDG# MEM36

Samples and Fractions Reviewed

Sample Identifications — Analytical Fractions

ENSAFE ID	MATRIX	VOA		MET		DRO		GRO		TPH		FE		MN	
000T111297	WATER	X													
000T111497	WATER	X													
002G10DA04	WATER	X													
002G14DA04	WATER	X													
014G01LF04	WATER	X		X								X		X	
014H01LF04	WATER	X		X								X		X	
014G03LS04	WATER	X		X								X		X	
014G04LF04	WATER	X		X								X		X	
014G06LF04	WATER	X													
014G07LF04	WATER	X													
014F111297	WATER	X		X								X		X	
065G01UA04	WATER	X				X		X		X					
065G04UA04	WATER	X				X		X		X					
065G05UA04	WATER	X		X		X		X		X		X		X	
065H05UA04	WATER	X				X		X		X					
065G06DA04	WATER	X		X		X		X		X		X		X	
065F111497	WATER	X		X		X		X		X		X		X	
214E111497	WATER	X													
365E111497	WATER	X				X		X		X					
Total Billable Samples	(Water/Soil	19	0	8	0	7	0	7	0	7	0	8	0	8	0

VOA = SW846 Volatiles
MET = Methane
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
TPH = Total Petroleum Hydrocarbons
FE = Iron
MN = Manganese

DATA ASSESSMENT AND NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the U.S. EPA SW846, Method 8260 with CLP deliverables; the National Functional Guidelines for Organic Data Review, February 1994, and DQO Level III. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG # MEM36

A validation was performed on the Volatile Data from SDG MEM36. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibrations
*	•	Internal Standard Performance
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification /Quantitation

* - All criteria were met for this parameter

Continuing calibrations

The continuing calibrations that were analyzed with this data package exhibited %Ds that were not within continuing calibration criteria.

Continuing calibrations (continued)

The continuing calibration, HQ993, contained compounds with %Ds greater than 50% D but less than 90% D. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J) and all non detects as estimated (UJ).

065G04UA04	2-hexanone (51.2%)
065G06DA04	

System Performance and Overall Assessment

The laboratory did not encounter any large problems. The data as reported required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

D= result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that analyte is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the analyte value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

The specific findings will be noted in numerical form on the Form Is in this data validation report. These specific finding footnotes will reflect the conclusions found in the data validation process that resulted in the qualification of the data.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	ANALYTE ID	DL	QL
065G04UA04	2-hexanone (51.2%)	+/-	J/UJ
065G06DA04			

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

METHANE

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, calibration results, surrogate and matrix spike recoveries, and GC performance. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Savannah Laboratories' SOP; the National Functional Guidelines for Organic Data Review, where applicable; and EPA DQO Level III requirements. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG# MEM36

A validation was performed on the METHANE data from SDG MEM36. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicate
*	•	Field Duplicates
*	•	Identification/Quantitation

* - All criteria were met for this parameter.

Method Deviations

The laboratory did not spike the samples, standards and blanks with a surrogate compound. No qualifications were required.

Overall Performance

The data did not require qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

TPH - EXTRACTABLES (DRO)

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, calibration results, surrogate and matrix spike recoveries, and GC performance. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Tennessee TPH Method; the National Functional Guidelines for Organic Data Review, where applicable; and EPA DQO Level III requirements. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG# MEM36

A validation was performed on the TPH (DRO) data from SDG MEM36. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicate
*	•	Field Duplicates
*	•	Identification/Quantitation

* - All criteria were met for this parameter.

Overall Performance

The data did not require qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

TPH - PURGEABLE (GRO)

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, calibration results, surrogate and matrix spike recoveries, and GC performance. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Tennessee TPH Method; the National Functional Guidelines for Organic Data Review, where applicable; and EPA DQO Level III requirements. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG# MEM36

A validation was performed on the TPH (GRO) data from SDG MEM36. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicate
*	•	Field Duplicates
*	•	Identification/Quantitation

* - All criteria were met for this parameter.

Overall Performance

The data did not require qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE
IRON, MANGANESE AND TPH

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW 846 Methods; the Functional Guidelines for Inorganic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM36

A validation was performed on the TPH, Iron and Manganese Data from SDG MEM36. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	Calibrations
*	•	Blanks
*	•	Interferences
*	•	Matrix Spike Recovery
*	•	Matrix Duplicates
*	•	Field Duplicates
*	•	Laboratory Control Samples
*	•	Serial Dilutions

* - All criteria were met for this parameter.

"B" Qualifier

All sample results left with a "B" qualifier after all other qualifications, will be qualified with a "J" qualifier in place of the "B" per Ensafe's request.

SUMMARY OF DATA QUALIFICATIONS

Sample ID	Analyte	DL	QL
All "B" results	all analytes	B	J

Data Validation Report

SDG MEM37

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

Data Validation Report

SDG#:	MEM37
Date:	February 10, 1998
Client Name:	EnSafe
Project/Site Name:	NSA Memphis
Date Sampled:	November 13-18, 1997
Number of Samples:	20 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Savannah Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, February, 1994
QA/QC Level:	EPA DQO Level IV
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volatiles, Methane, Diesel Range Organics, Gasoline Range Organics, Petroleum Hydrocarbons, Iron, Manganese

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

for Kimberly S. Shopp — 13 February 1998

Paul B. Humburg, President — Date

4127 Plaza 94 South · St. Charles, MO 63304
(314) 936-1332 · Fax (314) 936-1335

SDG# MEM37

Samples and Fractions Reviewed

Sample Identifications — Analytical Fractions

ENSAFE ID	MATRIX	VOA		MET		TPH		GRO		DRO		FE		MN	
000T111397	WATER	X													
000T111797	WATER	X													
000T111897	WATER	X													
002G01DA04	WATER	X													
002G02DA04	WATER	X		X								X		X	
002G02UA04	WATER	X		X								X		X	
002G05DA04	WATER	X													
002G08DA04	WATER	X													
002G13UA04	WATER	X		X								X		X	
009G02DA04	WATER	X		X		X		X		X		X		X	
009G03DA04	WATER	X		X		X		X		X		X		X	
009G04DA04	WATER	X				X		X		X					
009F111797	WATER	X		X		X		X		X		X		X	
014G01LS04	WATER	X													
014G02LS04	WATER	X		X								X		X	
014G05LS04	WATER	X													
014G08LS04	WATER	X		X								X		X	
065G02UA04	WATER	X				X		X		X					
065G06UA04	WATER	X				X		X		X					
065G07UA04	WATER	X		X		X		X		X		X		X	
Total Billable Samples	(Water/Soil	20	0	9	0	7	0	7	0	7	0	9	0	9	0

VOA = SW846 Volatiles
MET = SW846 Methane
TPH = SW846 Petroleum Hydrocarbons 418.1
GRO = SW846 Gasoline Range Organics
DRO = SW846 Diesel Range Organics
FE = SW846 Iron
MN = SW846 Manganese

DATA ASSESSMENT NARRATIVES

DATA ASSESSMENT AND NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the U.S. EPA SW846, Method 8260 with CLP deliverables; the National Functional Guidelines for Organic Data Review, February 1994, and DQO Level IV. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG # MEM37

A validation was performed on the Volatile Data from SDG MEM37. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibrations
*	•	Internal Standard Performance
	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification /Quantitation

* - All criteria were met for this parameter

Continuing calibrations

The continuing calibration, MQ953, contained compounds with %Ds greater than 25% D but less than 50% D. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J).

014G02LS04	xylene (total) (34.4)
014G01LS04	

Continuing calibrations (continued)

The continuing calibration, MQ967, contained compounds with %Ds greater than 50% D but less than 90% D. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J) and all non detects as estimated (UJ).

065G06UA04	xylene (total) (63.2)
002G08DA04	

The continuing calibration, MQ972, contained compounds with %Ds greater than 50% D but less than 90% D. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J) and all non detects as estimated (UJ).

009G04DA04	acetone (74.2)
002G02DA04	xylene (total) (63.2)
002G02UA04	
002G13UA04	
009G02DA04	
009G03DA04	
002G01DA04	
002G05DA04	

Method Blanks

The blanks associated with these samples exhibited contamination and the samples required qualifications. The end-user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moisture as the associated samples. These factors must be taken into consideration when applying the 5X or 10X criteria to field samples.

Associated blank	Compound	Conc.	Action level
1M1124MB	2-butanone	13J	130
1M1126MB	2-butanone	9.2J	92

Samples	Compound	Qualification
014G02LS04	2-butanone	CRQL
014G08LS04		
065G07UA04		
014G01LS04		
014G05LS04		
002G08DA04		

QC Blanks

The blanks associated with these samples exhibited contamination and the samples required qualifications. The end-user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moisture as the associated samples. These factors must be taken into consideration when applying the 5X or 10X criteria to field samples.

Associated blank	Compound	Conc.	Action level
000T111897	carbon disulfide	1.3J	6.5
102E111997	2-butanone	6.6JB	66
202E112097	2-butanone	5.8J	58
002F111997	trichloroethene	0.53J	5.3

Samples	Compound	Qualification
009G02DA04	carbon disulfide	CRQL
009G03DA04		
014G01LS04		
014G08LS04		
065G02UA04		
002G02DA04	trichloroethene	CRQL

System Performance and Overall Assessment

The laboratory did not encounter any large problems. The data as reported required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

D= result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that analyte is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the analyte value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

The specific findings will be noted in numerical form on the Form Is in this data validation report. These specific finding footnotes will reflect the conclusions found in the data validation process that resulted in the qualification of the data.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	ANALYTE ID	DL	QL
014G02LS04 014G01LS04	xylene (total) (34.4)	+	J
065G06UA04 002G08DA04	xylene (total) (63.2)	+/-	J/UJ
009G04DA04 002G02DA04 002G02UA04 002G13UA04 009G02DA04 009G03DA04 002G01DA04 002G05DA04	acetone (74.2) xylene (total) (63.2)	+/-	J/UJ
014G02LS04 014G08LS04 065G07UA04 014G01LS04 014G05LS04 002G08DA04	2-butanone	+	CRQL
009G02DA04 009G03DA04 014G01LS04 014G08LS04 065G02UA04	carbon disulfide	+	CRQL
002G02DA04	trichloroethene	+	CRQL

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

TPH - PURGEABLE (GRO)

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, calibration results, surrogate and matrix spike recoveries, and GC performance. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Tennessee TPH Method; the National Functional Guidelines for Organic Data Review, where applicable; and EPA DQO Level IV requirements. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG# MEM37

A validation was performed on the TPH (GRO) data from SDG MEM37. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicate
*	•	Field Duplicates
*	•	Identification/Quantitation

* - All criteria were met for this parameter.

Overall Performance

The data did not require qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

TPH - EXTRACTABLES (DRO)

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, calibration results, surrogate and matrix spike recoveries, and GC performance. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Tennessee TPH Method; the National Functional Guidelines for Organic Data Review, where applicable; and EPA DQO Level IV requirements. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG# MEM37

A validation was performed on the TPH (DRO) data from SDG MEM37. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicate
*	•	Field Duplicates
*	•	Identification/Quantitation

* - All criteria were met for this parameter.

Overall Performance

The data did not require qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

METHANE

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, calibration results, surrogate and matrix spike recoveries, and GC performance. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Savannah Laboratories' SOP; the National Functional Guidelines for Organic Data Review, where applicable; and EPA DQO Level IV requirements. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG# MEM37

A validation was performed on the METHANE data from SDG MEM37. The data was evaluated based on the following parameters.

* • Data Completeness
* • Holding Times
* • GC/MS Tuning
* • Calibrations
* • Internal Standard Performance
* • Blanks
* • Surrogate Recoveries
* • Matrix Spike/Matrix Spike Duplicate
* • Field Duplicates
* • Identification/Quantitation

* - All criteria were met for this parameter.

Method Deviations

The laboratory did not spike the samples, standards and blanks with a surrogate compound. No qualifications were required.

Overall Performance

The data did not require qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE
IRON, MANGANESE AND TPH

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW 846 Appendix IX Methods; the Functional Guidelines for Inorganic Data Validation, February 1994, and DQO Level IV requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM37

A validation was performed on the TPH, Iron and Manganese Data from SDG MEM37. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	Calibrations
	•	Blanks
*	•	Interferences
*	•	Matrix Spike Recovery
*	•	Matrix Duplicates
*	•	Field Duplicates
*	•	Laboratory Control Samples
*	•	Serial Dilutions

* - All criteria were met for this parameter.

Preparation and Field Blanks

The preparation blank exhibited contamination for the following elements.

Elements	Conc.	Samples affected
Iron	17.6 ug/l	no impact

The calibration blank exhibited contamination for the following elements.

Elements	Conc.	Samples affected
Iron	19.4 ug/l	no impact
Manganese	1.3 ug/l	no impact

The field QC blanks exhibited some contamination but had no impact on the data.

The USEPA requires that all sample values below five times the preparation, field, DI or calibration blank contamination be qualified as non-detect, "U".

"B" Qualifier

All sample results left with a "B" qualifier after all other qualifications, will be qualified with a "J" qualifier in place of the "B" per Ensafe's request.

SUMMARY OF DATA QUALIFICATIONS

Sample ID	Analyte	DL	QL
All "B" results	all analytes	B	J

Data Validation Report

SDG MEM38

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

Data Validation Report

SDG#:	MEM38
Date:	February 10, 1998
Client Name:	EnSafe
Project/Site Name:	NSA Memphis
Date Sampled:	November 14-19, 1997
Number of Samples:	9 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Savannah Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, February, 1994
QA/QC Level:	EPA DQO Level III
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volatiles, Methane, Diesel Range Organics, Gasoline Range Organics, Petroleum Hydrocarbons, Iron, Manganese

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig G. Seaton
for Paul B. Humburg, President

2/13/98.
Date

4127 Plaza 94 South · St. Charles, MO 63304
(314) 936-1332 · Fax (314) 936-1335

SDG# MEM38

Samples and Fractions Reviewed

Sample Identifications — Analytical Fractions

ENSAFE ID	MATRIX	VOA		MET		TPH		GRO		DRO		FE		MN	
002G04UA04	WATER	X		X								X		X	
002G06DA04	WATER	X		X								X		X	
002H06DA04	WATER	X		X								X		X	
002G08UA04	WATER	X		X								X		X	
002G10UA04	WATER	X		X								X		X	
002F111997	WATER	X		X								X		X	
002G14UA04	WATER	X		X								X		X	
009G01DA04	WATER	X		X		X		X		X		X		X	
102E111997	WATER	X		X								X		X	
Total Billable Samples	(Water/Soil	9	0	9	0	1	0	1	0	1	0	9	0	9	0

VOA = SW846 Volatiles
MET = SW846 Methane
TPH = SW846 Petroleum Hydrocarbons 418.1
GRO = SW846 Gasoline Range Organics
DRO = SW846 Diesel Range Organics
FE = SW846 Iron
MN = SW846 Manganese

DATA ASSESSMENT NARRATIVES

DATA ASSESSMENT AND NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the U.S. EPA SW846, Method 8260 with CLP deliverables; the National Functional Guidelines for Organic Data Review, February 1994, and DQO Level III. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG # MEM38

A validation was performed on the Volatile Data from SDG MEM38. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification /Quantitation

* - All criteria were met for this parameter

Method Blanks

The blanks associated with these samples exhibited contamination and the samples required qualifications. The end-user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moisture as the associated samples. These factors must be taken into consideration when applying the 5X or 10X criteria to field samples.

Associated blank	Compound	Conc.	Action level
1I1126MB	2-butanone	8.6J	86

Samples	Compound	Qualification
002G06DA04	2-butanone	CRQL
002G08UA04		
002G14UA04		

QC Blanks

The blanks associated with these samples exhibited contamination and the samples required qualifications. The end-user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moisture as the associated samples. These factors must be taken into consideration when applying the 5X or 10X criteria to field samples.

Associated blank	Compound	Conc.	Action level
102E111997	methylene chloride	3.3J	33
002F111997	trichloroethene	0.53J	2.65

Samples	Compound	Qualification
002G14UA04	methylene chloride	CRQL
002H06DA04		
002G04UA04	trichloroethene	CRQL

System Performance and Overall Assessment

The laboratory did not encounter any large problems. The data as reported required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

D= result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that analyte is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the analyte value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

The specific findings will be noted in numerical form on the Form Is in this data validation report. These specific finding footnotes will reflect the conclusions found in the data validation process that resulted in the qualification of the data.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	ANALYTE ID	DL	QL
002G06DA04 002G08UA04 002G14UA04	2-butanone	+	CRQL
002G14UA04 002H06DA04	methylene chloride	+	CRQL
002G04UA04	trichloroethene	+	CRQL

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

METHANE

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, calibration results, surrogate and matrix spike recoveries, and GC performance. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Savannah Laboratories' SOP; the National Functional Guidelines for Organic Data Review, where applicable; and EPA DQO Level III requirements. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG# MEM38

A validation was performed on the METHANE data from SDG MEM38. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicate
*	•	Field Duplicates
*	•	Identification/Quantitation

* - All criteria were met for this parameter.

Method Deviations

The laboratory did not spike the samples, standards and blanks with a surrogate compound. No qualifications were required.

Overall Performance

The data did not require qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

TPH - EXTRACTABLES (DRO)

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, calibration results, surrogate and matrix spike recoveries, and GC performance. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Tennessee TPH Method; the National Functional Guidelines for Organic Data Review, where applicable; and EPA DQO Level III requirements. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG# MEM38

A validation was performed on the TPH (DRO) data from SDG MEM38. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicate
*	•	Field Duplicates
*	•	Identification/Quantitation

* - All criteria were met for this parameter.

Overall Performance

The data did not require qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

TPH - PURGEABLE (GRO)

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, calibration results, surrogate and matrix spike recoveries, and GC performance. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Tennessee TPH Method; the National Functional Guidelines for Organic Data Review, where applicable; and EPA DQO Level III requirements. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG# MEM38

A validation was performed on the TPH (GRO) data from SDG MEM38. The data was evaluated based on the following parameters.

* • Data Completeness
* • Holding Times
* • GC/MS Tuning
* • Calibrations
* • Internal Standard Performance
* • Blanks
* • Surrogate Recoveries
* • Matrix Spike/Matrix Spike Duplicate
* • Field Duplicates
* • Identification/Quantitation

* - All criteria were met for this parameter.

Overall Performance

The data did not require qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE
IRON, MANGANESE AND TPH

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW 846 Methods; the Functional Guidelines for Inorganic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM38

A validation was performed on the TPH, Iron, and Manganese Data from SDG SS016D. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	Calibrations
*	•	Blanks
*	•	Interferences
*	•	Matrix Spike Recovery
*	•	Matrix Duplicates
*	•	Field Duplicates
*	•	Laboratory Control Samples
*	•	Serial Dilutions

* - All criteria were met for this parameter.

Preparation and Field Blanks

The calibration and preparation blanks exhibited contamination for the following elements.

Elements	Conc.	Samples affected
Manganese	3.7 ug/l	no impact

The USEPA requires that all sample values below five times the preparation or calibration blank contamination be qualified as non-detect, "U".

The field QC blanks exhibited some contamination but had no impact on the data.

SUMMARY OF DATA QUALIFICATIONS

Sample ID	Analyte	DL	QL
All "B" results	all analytes	B	J

Data Validation Report

SDG MEM40

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

Data Validation Report

SDG#:	MEM40
Date:	February 10, 1998
Client Name:	EnSafe
Project/Site Name:	NSA Memphis
Date Sampled:	November 18-21, 1997
Number of Samples:	26 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Savannah Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, February, 1994
QA/QC Level:	EPA DQO Level IV
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volatiles, Pesticide/PCB's, Methane, Diesel Range Organics, Gasoline Range Organics, Petroleum Hydrocarbons, Iron, Manganese

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

for Kimberly S. Shopp
Paul B. Humburg, President

13 February 1998
Date

4127 Plaza 94 South · St. Charles, MO 63304
(314) 936-1332 · Fax (314) 936-1335

SDG# MEM40

Samples and Fractions Reviewed

Sample Identifications — Analytical Fractions

ENSAFE ID	MATRIX	VOA		P/P		MET		TPH		GRO		DRO		FE		MN	
000T112097	WATER	X															
000T112197	WATER	X															
002G05UA04	WATER	X															
002H05UA04	WATER	X															
002G06UA04	WATER	X															
002G07UA04	WATER	X															
002G09DA04	WATER	X															
002G09UA04	WATER	X															
002G11DA04	WATER	X															
002G11UA04	WATER	X				X								X		X	
002G12DA04	WATER	X															
002H12DA04	WATER	X															
002G12UA04	WATER	X				X								X		X	
002G13MA04	WATER	X															
059G01LS04	WATER	X		X		X								X		X	
059G02LS04	WATER	X		X		X								X		X	
059G03LS04	WATER	X		X		X								X		X	
059G03UF04	WATER	X		X		X								X		X	
059H03UF04	WATER	X		X		X								X		X	
059F112097	WATER	X		X		X								X		X	
065G03UA04	WATER	X						X		X		X					
OGMG01DA04	WATER	X															
OGMG04UA04	WATER	X															
159E112197	WATER	X		X													
202E112097	WATER	X				X		X		X		X		X		X	
302E112097	WATER	X				X								X		X	
Total Billable Samples	(Water/Soil)	26	0	7	0	10	0	2	0	2	0	2	0	10	0	10	0

VOA = SW846 Volatiles
P/P = SW846 Pesticides/PCB's
MET = SW846 Methane
TPH = SW846 Petroleum Hydrocarbons 418.1
GRO = SW846 Gasoline Range Organics
DRO = SW846 Diesel Range Organics
FE = SW846 Iron
MN = SW846 Manganese

DATA ASSESSMENT NARRATIVES

DATA ASSESSMENT AND NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the U.S. EPA SW846, Method 8260 with CLP deliverables; the National Functional Guidelines for Organic Data Review, February 1994, and DQO Level IV. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG # MEM40

A validation was performed on the Volatile Data from SDG MEM40. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibrations
*	•	Internal Standard Performance
	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
	•	Field Duplicates
	•	Compound Identification /Quantitation

* - All criteria were met for this parameter

Continuing calibrations

The continuing calibration, MQ978, contained compounds with %Ds greater than 50% D but less than 90% D. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J) and all non detects as estimated (UJ).

002G11UA04	xylene (total) (56.4)
002G12UA04	

Continuing calibrations (continued)

The continuing calibration, MQ981, contained compounds with %Ds greater than 50% D but less than 90% D. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J) and all non detects as estimated (UJ).

002G05UA04	xylene (total) (58.6)
002H05UA04	
002G06UA04	
002G07UA04	
002G09DA04	
002G09UA04	
002G11DA04	
002G13MA04	
0GMG01DA04	

The continuing calibration, MQ986, contained compounds with %Ds greater than 25% D but less than 50% D. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J).

002G05UA04DL	acetone (38.3)
002H05UA04DL	

The continuing calibration, MQ986, contained compounds with %Ds greater than 50% D but less than 90% D. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J) and all non detects as estimated (UJ).

059G01LS04	xylene (total) (58.6)
059G02LS04	
059G03LS04	
059G03UF04	
059H03UF04	

Continuing calibrations (continued)

The continuing calibration, MQ989, contained compounds with %Ds greater than 50% D but less than 90% D. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J) and all non detects as estimated (UJ).

002G12DA04	xylene (total)
002H12DA04	
0GMG04UA04	
065G03UA04	

QC Blanks

The blanks associated with these samples exhibited contamination and the samples required qualifications. The end-user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moisture as the associated samples. These factors must be taken into consideration when applying the 5X or 10X criteria to field samples.

Associated blank	Compound	Conc.	Action level
102E111997	2-butanone	6.6JB	66
202E112097	2-butanone	5.8J	58
302E112097	toluene	2.1J	10.5
159E112197	toluene	2.9J	14.5
002F111997	trichloroethene	0.53	5.3

Samples	Compound	Qualification
002H12DA04	2-butanone	CRQL
059G01LS04		
0GMG04UA04		
0GMG01DA04	toluene	CRQL
065G03UA04	trichloroethene	CRQL

Field Duplicates

The field duplicate samples 002G05UA04 and 002H05UA04, exhibited a high RPD for acetone (74%). Qualify all positive results for acetone as estimated (J).

Compound Identification/Quantitation

For samples 002G05UA04 and 002H05UA04, do not use E-flagged results in favor of the D-flagged results in the diluted sample. For the diluted samples 002G05UA04DL and 002H05UA04DL, do not use any results except for the D-flagged results with corresponding E-flagged results in the original sample analysis.

System Performance and Overall Assessment

The laboratory did not encounter any large problems. The data as reported did not require qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

D= result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that analyte is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the analyte value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

The specific findings will be noted in numerical form on the Form Is in this data validation report. These specific finding footnotes will reflect the conclusions found in the data validation process that resulted in the qualification of the data.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	ANALYTE ID	DL	QL
002G11UA04 002G12UA04	xylene (total) (56.4)	+/-	J/UJ
002G05UA04 002H05UA04 002G06UA04 002G07UA04 002G09DA04 002G09UA04 002G11DA04 002G13MA04 0GMG01DA04	xylene (total) (58.6)	+/-	J/UJ
002G05UA04DL 002H05UA04DL	acetone (38.3)	+	J
059G01LS04 059G02LS04 059G03LS04 059G03UF04 059H03UF04	xylene (total) (58.6)	+/-	J/UJ
002G12DA04 002H12DA04 0GMG04UA04 065G03UA04	xylene (total)	+/-	J/UJ
002H12DA04 059G01LS04 0GMG04UA04	2-butanone	+	CRQL
0GMG01DA04	toluene	+	CRQL
065G03UA04	trichloroethene	+	CRQL

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

SUMMARY OF DATA QUALIFICATIONS

Page - 2

SAMPLE ID	ANALYTE ID	DL	QL
002G05UA04 002H05UA04	acetone	+	J
002G05UA04 002H05UA04	E-flagged results	+	D
002G05UA04DL 002H05UA04DL	All results except D-flagged results	+/-	Do not use

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

PESTICIDE/AROCLORS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC performance, and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW846 Method 8081; the National Functional Guidelines for Organic Data Validation, February 1994; and DQO Level IV requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM40

A validation was performed on the Pesticide/Aroclor Data from SDG MEM40. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC Performance
*	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Compound Identification
	•	Compound Quantitation

* - All criteria were met for this parameter.

Compound Identification/Quantitation

Several samples exhibited positive results which had been flagged X by the laboratory because the results could not be confirmed due to matrix interference on the second column. The peak shape and retention times on the first column were good. Therefore, because the results could not be confirmed, but there is presumptive evidence to support the result, all X flagged results are qualified as presumptively present at an estimated concentration, NJ.

System Performance and Overall Assessment

The data required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

NJ = Result is considered presumptively present at an estimated concentration

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
ALL	All X Flagged Compounds	+X	NJ

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non-detect result

DATA ASSESSMENT NARRATIVE

METHANE

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, calibration results, surrogate and matrix spike recoveries, and GC performance. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Savannah Laboratories' SOP; the National Functional Guidelines for Organic Data Review, where applicable; and EPA DQO Level IV requirements. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG# MEM40

A validation was performed on the METHANE data from SDG MEM40. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicate
*	•	Field Duplicates
*	•	Identification/Quantitation

* - All criteria were met for this parameter.

Method Deviations

The laboratory did not spike the samples, standards and blanks with a surrogate compound. No qualifications were required.

Overall Performance

The data did not require qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

TPH - PURGEABLE (GRO)

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, calibration results, surrogate and matrix spike recoveries, and GC performance. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Tennessee TPH Method; the National Functional Guidelines for Organic Data Review, where applicable; and EPA DQO Level IV requirements. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG# MEM40

A validation was performed on the TPH (GRO) data from SDG MEM40. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicate
*	•	Field Duplicates
*	•	Identification/Quantitation

* - All criteria were met for this parameter.

Overall Performance

The data did not require qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE

TPH - EXTRACTABLES (DRO)

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, calibration results, surrogate and matrix spike recoveries, and GC performance. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the Tennessee TPH Method; the National Functional Guidelines for Organic Data Review, where applicable; and EPA DQO Level IV requirements. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG# MEM40

A validation was performed on the TPH (DRO) data from SDG MEM40. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
*	•	Calibrations
*	•	Internal Standard Performance
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicate
*	•	Field Duplicates
*	•	Identification/Quantitation

* - All criteria were met for this parameter.

Overall Performance

The data did not require qualification.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL

NO QUALIFICATIONS WERE REQUIRED

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

DATA ASSESSMENT NARRATIVE
TPH, IRON AND MANGANESE

General

The inorganic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, matrix spike and LCS recoveries, matrix duplicates and calibration results. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW 846 Methods; the Functional Guidelines for Inorganic Data Validation, February 1994, and DQO Level IV requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MEM40

A validation was performed on the TPH, Iron and Manganese Data from SDG MEM40. The data was evaluated based on the following parameters.

* • Data Completeness
* • Holding Times
* • Calibrations
* • Blanks
* • Interferences
* • Matrix Spike Recovery
* • Matrix Duplicates
* • Field Duplicates
* • Laboratory Control Samples
* • Serial Dilutions

* - All criteria were met for this parameter.

Preparation and Field Blanks

The calibration and preparation blanks exhibited contamination for the following elements.

Elements	Conc.	Samples affected
Manganese	3.7 ug/l	no impact

The USEPA requires that all sample values below five times the preparation or calibration blank contamination be qualified as non-detect, "U".

The field QC blanks exhibited some contamination but had no impact on the data.

"B" Qualifier

All sample results left with a "B" qualifier after all other qualifications, will be qualified with a "J" qualifier in place of the "B" per Ensafe's request.

SUMMARY OF DATA QUALIFICATIONS

Sample ID	Analyte	DL	QL
All "B" results	all analytes	B	J

Data Validation Report

SDG MEM41

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

Data Validation Report

SDG#:	MEM41
Date:	February 10, 1998
Client Name:	EnSafe
Project/Site Name:	NSA Memphis
Date Sampled:	November 18-19, 1997
Number of Samples:	9 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Savannah Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, February, 1994
QA/QC Level:	EPA DQO Level III
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volatiles

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

for Kimberly S. Shopp
Paul B. Humburg, President

13 February 1998
Date

4127 Plaza 94 South · St. Charles, MO 63304
(314) 936-1332 · Fax (314) 936-1335

SDG# MEM41

Samples and Fractions Reviewed

Sample Identifications Analytical Fractions

ENSAFE ID	MATRIX	VOA	
000T111997	WATER	X	
002G01UA04	WATER	X	
002G03DA04	WATER	X	
002G03UA04	WATER	X	
002G13DA04	WATER	X	
OGMG02DA04	WATER	X	
OGMH02DA04	WATER	X	
OGMG03DA04	WATER	X	
0GMG05DA04	WATER	X	
Total Billable Samples (Water/Soil)		9	0

VOA= SW846 Volatiles

DATA ASSESSMENT AND NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the U.S. EPA SW846, Method 8260 with CLP deliverables; the National Functional Guidelines for Organic Data Review, February 1994, and DQO Level III. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualifications table.

SDG # MEM41

A validation was performed on the Volatile Data from SDG MEM41. The data was evaluated based on the following parameters.

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibrations
*	•	Internal Standard Performance
	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
	•	Compound Identification /Quantitation

* - All criteria were met for this parameter

Continuing calibrations

The continuing calibration, MQ972, contained compounds with %Ds greater than 50% D but less than 90% D. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J) and all non detects as estimated (UJ).

002G13DA04	acetone (74.2)
002G01UA04	

Continuing calibrations (continued)

The continuing calibration, MQ978, contained compounds with %Ds greater than 50% D but less than 90% D. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J) and all non detects as estimated (UJ).

002G03DA04	xylene (total) (56.4)
002G03UA04	
0GMG02DA04	
0GMG03DA04	
0GMH02DA04	

The continuing calibration, MQ986, contained compounds with %Ds greater than 50% D but less than 90% D. For the samples and non compliant compounds listed below, qualify all positive results as estimated (J) and all non detects as estimated (UJ).

002G03DA04DL	xylene (total) (56.4)
0GM05DA04	

QC Blanks

The blanks associated with these samples exhibited contamination and the samples required qualifications. The end-user should note that the action levels indicated for the blank analysis may not involve the same weights, volumes, dilution factors, or percent moisture as the associated samples. These factors must be taken into consideration when applying the 5X or 10X criteria to field samples.

Associated blank	Compound	Conc.	Action level
000T111897	carbon disulfide	1.3J	6.5
102E111997	2-butanone	6.6JB	66
202E112097	2-butanone	5.8J	58

Samples	Compound	Qualification
0GMH02DA04	carbon disulfide	CRQL
0GMH02DA04	2-butanone	CRQL

Compound Identification/Quantitation

For sample 002G03DA04, do not use E-flagged results in favor of the D-flagged results in the diluted sample. For the diluted sample 002G03DA04DL, do not use any results except for the D-flagged results with corresponding E-flagged results in the original sample analysis.

System Performance and Overall Assessment

The laboratory did not encounter any large problems. The data as reported required qualifications.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

D= result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that analyte is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 10X the method blank value. The sample result for the blank contaminant is qualified as non detected at the analyte value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 10X the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

The specific findings will be noted in numerical form on the Form Is in this data validation report. These specific finding footnotes will reflect the conclusions found in the data validation process that resulted in the qualification of the data.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	ANALYTE ID	DL	QL
002G13DA04 002G01UA04	acetone (74.2)	+/-	J/UJ
002G03DA04 002G03UA04 0GMG02DA04 0GMG03DA04 0GMH02DA04	xylene (total) (56.4)	+/-	J/UJ
002G03DA04DL 0GM05DA04	xylene (total) (56.4)	+/-	J/UJ
0GMH02DA04	carbon disulfide	+	CRQL
0GMH02DA04	2-butanone	+	CRQL
002G03DA04	E-flagged results	+	Do not use
002G03DA04DL	All results except D-flagged results	+/-	Do not use

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
+ in the DL column denotes a positive result
- in the DL column denotes a non detect result

Data Validation Report

SDG MEM55

ENSAFE VALIDATION SUMMARY REPORT

Site Name:	Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.:	0106-001-04-730-00
Laboratory:	Savannah Laboratories, Savannah, Georgia
Sample Delivery Groups:	MEM55
Matrix:	Water
DQO Level:	III
Analysis:	Volatile Organic Compounds by SW-846 8260

SDG MEM55 Sample IDs

002G15LA00	002G18LA00	002H20LA00 (Dup of 002G200LA00)
002G16LA00	002G19LA00	002G22LA00
002G17LA00	002G20LA00	002G23LA00
002G17UC00		

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

Volatile Organic Compound Evaluation

1. All holding times, GC/MS instrument performance check results, initial and check calibration results, surrogate results, internal standard results, laboratory method blanks, matrix spike/matrix spike duplicate, and field duplicate results were acceptable. Sample 002G16LA00 was used for the matrix spike/matrix spike duplicate.

2. Tetrachloroethene (PCE) was detected in the trip and field blank associated with the samples at concentrations of 0.85 μg/L and 0.77 μg/L, respectively. PCE in sample 002G17UC00 was flagged as undetected "U" because it was believed to be false positive due to blank contamination.

Data Validation Report

SDG MEM68

ENSAFE VALIDATION SUMMARY REPORT

Site Name:	Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.:	0106-001-04-730-00
Laboratory:	Savannah Laboratories, Savannah, Georgia
Sample Delivery Groups:	MEM68
Matrix:	Water
DQO Level:	III
Analysis:	Methane by SW-846 8015 (modified) / RSK-175

SDG MEM68 Sample IDs

002G02DA05	002G06DA05	002G13UA05
002G02UA05	002G08UA05	002G14UA05
002G03DA05	002G10UA05	002G15DA05
002G04UA05	002G11UA05	002G18DA05

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

Methane Evaluation

1. All holding times, initial and check calibration results, laboratory method blanks, and field duplicate results were acceptable. Because all quality assurance/quality control data were within criteria, no data qualification were necessary.

Data Validation Report

SDG MEM69

ENSAFE VALIDATION SUMMARY REPORT

Site Name:	Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.:	0106-001-04-730-00
Laboratory:	Savannah Laboratories, Savannah, Georgia
Sample Delivery Groups:	MEM69
Matrix:	Water
DQO Level:	III
Analysis:	Methane by SW-846 8015 (modified) / RSK-175

SDG MEM69 Sample IDs
002G12UA05

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

Methane Evaluation

1. All holding times, initial and check calibration results, laboratory method blanks, and field duplicate results were acceptable. Because all quality assurance/quality control data were within criteria, no data qualification were necessary.

Data Validation Report

SDG MEM76

ENSAFE VALIDATION SUMMARY REPORT

Site Name:	Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.:	0106-001-04-730-00
Laboratory:	Savannah Laboratories, Savannah, Georgia
Sample Delivery Groups:	MEM76
Matrix:	Water
DQO Level:	II
Analysis:	Volatile Organic Compounds by SW-846 8260 and Chloride by EPA 300.0

SDG MEM76 Sample IDs and Analyses

Sample ID	Volatiles	Chloride
002G001201	X	X
002G001301		X
002G001401		X
002G03DA06	X	X
002H03DA06 (Dup of 002G03DA06)	X	X
002G05DA06		X
002G06DA06		X
002G16DA06		X
002G18DA06	X	X

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

Volatile Organic Compound and Chloride Evaluation

1. All holding times, laboratory method blanks, surrogate results, and field duplicate results were acceptable. A matrix spike/matrix spike duplicate was not analyzed with this SDG.

2. 1,2-Dichloroethene was detected outside of the calibration range in samples 002G03DA06 and 002H03DA06. Both samples were diluted and 1,2-dichloroethene results from the secondary dilution was substituted for the original sample results. 1,2-Dichloroethene in these two samples were qualified "D" to indicate that the results were taken from the secondary dilution.

Data Validation Report

SDG MS003

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

Data Validation Report

SDG#:	MS003
Date:	March 30, 1999
Client Name:	Ensafe
Project/Site Name:	NSA Mid-South
Date Sampled:	February 15, 1999
Number of Samples:	20 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Laucks Testing Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, February, 1994
QA/QC Level:	DQO Level IV
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volatiles

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig G. Scrafton
for Paul B. Humburg, President

3-31-99.
Date

4127 Plaza 94 South • St. Charles, MO 63304
(314) 936-1332 • Fax (314) 936-1335

SDG# MS003

Samples and Fractions Reviewed

Sample Identifications

ENSAFE ID	MATRIX	VOA	
002G01DA05	WATER	X	
002G01UA05	WATER	X	
002G02DA05	WATER	X	
002G02UA05	WATER	X	
002G034105	WATER	X	
002G034305	WATER	X	
002G034505	WATER	X	
002G034705	WATER	X	
002G034905	WATER	X	
002G03UA05	WATER	X	
002G04UA05	WATER	X	
002G05DA05	WATER	X	
002G05UA05	WATER	X	
002G06DA05	WATER	X	
002G06UA05	WATER	X	
002G07UA05	WATER	X	
002G10DA05	WATER	X	
002G10UA05	WATER	X	
002G11UA05	WATER	X	
002G13DA05	WATER	X	
Total Billable Samples (Water/Soil)		20	0

VOA= Volatiles

DATA ASSESSMENT NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW-846 Method 8260B; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level IV requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MS003

A validation was performed on the Volatile Data from SDG MS003. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Internal Standard Performance
*	•	Compound Identification
	•	Compound Quantitation

* - All criteria were met for this parameter.

Calibrations

The initial calibration analyzed 02/04/99 on instrument Flipper exhibited one (1) compound with a RRF less than 0.05. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

All Samples	acetone (0.030)

Calibrations (continued)

The continuing calibration standard F0216004.D exhibited one (1) compound with a RRF less than 0.05. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

002G04UA05	acetone (0.038)
002G01DA05	
002G01UA05	
002G02DA05	
002G02UA05	
002G034105	
002G034305	
002G034505	
002G034705	
002G034905	
002G06UA05	
002G07UA05	
002G10DA05	
002G10UA05	
002G13DA05	
002G05UA05	

The continuing calibration standard F217004.D exhibited one (1) compound with a RRF less than 0.05. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

002G03UA05	acetone (0.038)
002G05DA05	
002G06DA05	

The continuing calibration standard F218009.D exhibited one (1) compound with a RRF less than 0.05. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

002G11UA05	acetone (0.039)

Compound Quantitation

For the following samples, do not use the E flagged results in favor of the corresponding D flagged results reported in the dilution analysis. All other results from the dilution analysis are not used in favor of the results from the undiluted analysis.

002G034105
002G034305
002G034505
002G034705
002G034905

System Performance and Overall Assessment

The data required qualifications/rejections.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
All Samples	acetone (0.030)	+/-	J/UR
002G04UA05 002G01DA05 002G01UA05 002G02DA05 002G02UA05 002G034105 002G034305 002G034505 002G034705 002G034905 002G06UA05 002G07UA05 002G10DA05 002G10UA05 002G13DA05 002G05UA05	acetone (0.038)	+/-	J/UR
002G03UA05 002G05DA05 002G06DA05	acetone (0.038)	+/-	J/UR
002G11UA05	acetone (0.039)	+/-	J/UR
002G034105 002G034305 002G034505 002G034705 002G034905	All E flagged results	+E	Do Not Use

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
002G034105DL 002G034305DL 002G034505DL 002G034705DL 002G034905DL	All except corresponding D flagged results	+/-	Do Not Use

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non detect result

Data Validation Report

SDG MS004

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

Data Validation Report

SDG#:	MS004
Date:	March 30, 1999
Client Name:	Ensafe
Project/Site Name:	NSA Mid-South
Date Sampled:	February 15, 1999
Number of Samples:	20 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Laucks Testing Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, February, 1994
QA/QC Level:	DQO Level III
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volatiles

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig G. Searson — 3-31-99.

for Paul B. Humburg, President — Date

4127 Plaza 94 South • St. Charles, MO 63304
(314) 936-1332 • Fax (314) 936-1335

SDG# MS004

Samples and Fractions Reviewed

Sample Identifications

ENSAFE ID	MATRIX	VOA	
002H04UA05	WATER	X	
002G11DA05	WATER	X	
002G13MA05	WATER	X	
002G13UA05	WATER	X	
002G14DA05	WATER	X	
002H14DA05	WATER	X	
002G14UA05	WATER	X	
002G15DA05	WATER	X	
002G22DA05	WATER	X	
002G23DA05	WATER	X	
00AT021599	WATER	X	
014G01LS05	WATER	X	
014G02LS05	WATER	X	
014G03LS05	WATER	X	
014G04LF05	WATER	X	
014G05LS05	WATER	X	
014G06LF05	WATER	X	
014G07LF05	WATER	X	
014G08LS05	WATER	X	
014G01LF05	WATER	X	
Total Billable Samples (Water/Soil)		20	0

VOA= Volatiles

DATA ASSESSMENT NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW-846 Method 8260B; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MS004

A validation was performed on the Volatile Data from SDG MS004. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
	•	Field Duplicates
*	•	Internal Standard Performance
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

Calibrations

The initial calibration analyzed 02/04/99 on instrument Flipper exhibited one (1) compound with a RRF less than 0.05. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

All Samples	acetone (0.030)

Calibrations (continued)

The continuing calibration standard F0217004.D exhibited one (1) compound with a RRF less than 0.05. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

002G11DA05	acetone (0.038)
002G13MA05	
002G13UA05	
002G14DA05	
002G14UA05	
002G15DA05	
002G22DA05	
002G23DA05	
002H04UA05	

The continuing calibration standard F0218009.D exhibited one (1) compound with a %D greater than 20% but less than 50% for which qualifications were required. For the following samples and compound, the reported positive results are qualified as estimated, J.

002H14DA05	2-butanone (32.8%)

The continuing calibration standard F0218009.D exhibited one (1) compound with a RRF less than 0.05. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

002H14DA05	acetone (0.039)
014G01LF05	
014G01LS05	
014G02LS05	
014G03LS05	
014G04LF05	
014G05LS05	
014G06LF05	
014G07LF05	
014G08LS05	

Field Duplicates

The field duplicate pair of the following samples exhibited a non-compliant %RPD (200%). The reported positive result is qualified as estimated, J, and the non-detect results is qualified as estimated, UJ.

002G14DA05	2-butanone
002H14DA05	

System Performance and Overall Assessment

The data required qualifications/rejections.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
All Samples	acetone (0.030)	+/-	J/UR
002G11DA05 002G13MA05 002G13UA05 002G14DA05 002G14UA05 002G15DA05 002G22DA05 002G23DA05 002H04UA05	acetone (0.038)	+/-	J/UR
002H14DA05	2-butanone (32.8%)	+	J
002H14DA05 014G01LF05 014G01LS05 014G02LS05 014G03LS05 014G04LF05 014G05LS05 014G06LF05 014G07LF05 014G08LS05	acetone (0.039)	+/-	J/UR
002G14DA05 002H14DA05	2-butanone	+/-	J/UJ

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non detect result

Data Validation Report

SDG MS005

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

Data Validation Report

SDG#:	MS005
Date:	March 30, 1999
Client Name:	Ensafe
Project/Site Name:	NSA Mid-South
Date Sampled:	February 15-16, 1999
Number of Samples:	20 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Laucks Testing Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, February, 1994
QA/QC Level:	DQO Level III
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volatiles

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig G. Scarfoss
for Paul B. Humburg, President

3-31-99.
Date

4127 Plaza 94 South • St. Charles, MO 63304
(314) 936-1332 • Fax (314) 936-1335

SDG# MS005

Samples and Fractions Reviewed

Sample Identifications

ENSAFE ID	MATRIX	VOA	
002G08DA05	WATER	X	
002G08UA05	WATER	X	
002G09DA05	WATER	X	
002G09UA05	WATER	X	
002G12DA05	WATER	X	
002G12UA05	WATER	X	
002G16DA05	WATER	X	
002G17DA05	WATER	X	
002G17UC05	WATER	X	
002G19DA05	WATER	X	
059G01LS05	WATER	X	
059H01LS05	WATER	X	
059G03LS05	WATER	X	
059G03UF05	WATER	X	
065G06DA05	WATER	X	
OBGG14MF06	WATER	X	
OGMG02DA05	WATER	X	
OGMG03DA05	WATER	X	
OGMG04UA05	WATER	X	
OGMG05DA05	WATER	X	
Total Billable Samples (Water/Soil)		20	0

VOA= Volatiles

DATA ASSESSMENT NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW-846 Method 8260B; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MS005

A validation was performed on the Volatile Data from SDG MS005. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Internal Standard Performance
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

Calibrations

The initial calibration analyzed 02/04/99 on instrument Flipper exhibited one (1) compound with a RRF less than 0.05. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

All Samples	acetone (0.030)

Calibrations (continued)

The continuing calibration standard F0218008.D exhibited one (1) compound with a RRF less than 0.05. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

059G01LS05	acetone (0.039)
059G03LS05	
059G03UF05	
059H01LS05	
002G08DA05	
002G08UA05	
002G09DA05	
002G09UA05	
002G12DA05	

The continuing calibration standard F219008.D exhibited one (1) compound with a RRF less than 0.05. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

002G12UA05	acetone (0.040)
002G16DA05	
002G17DA05	
002G17UC05	
002G19DA05	
OGMG02DA05	
OGMG03DA05	
OGMG04UA05	
OGMG05DA05	
OBGG14MF06	
065G06DA05	

System Performance and Overall Assessment

The data required qualifications/rejections.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
All Samples	acetone (0.030)	+/-	J/UR
059G01LS05	acetone (0.039)	+/-	J/UR
059G03LS05			
059G03UF05			
059H01LS05			
002G08DA05			
002G08UA05			
002G09DA05			
002G09UA05			
002G12DA05			
002G12UA05	acetone (0.040)	+/-	J/UR
002G16DA05			
002G17DA05			
002G17UC05			
002G19DA05			
OGMG02DA05			
OGMG03DA05			
OGMG04UA05			
OGMG05DA05			
OBGG14MF06			
065G06DA05			

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non detect result

Data Validation Report

SDG MS006

HEARTLAND
ENVIRONMENTAL SERVICES, INC.

Data Validation Report

SDG#:	MS006
Date:	March 30, 1999
Client Name:	Ensafe
Project/Site Name:	NSA Mid-South
Date Sampled:	February 16, 1999
Number of Samples:	21 Aqueous Sample(s) with 0 MS/MSD(s)
Laboratory:	Laucks Testing Laboratories
Validation Guidance:	National Functional Guidelines for Organic and Inorganic Data, February, 1994
QA/QC Level:	DQO Level III
Method(s) Utilized:	SW846 Third Edition
Analytical Fractions:	Volatiles

Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation. All instrument output, i.e. spectra, chromatograms, etc., for each sample have been carefully reviewed. The end-user is urged to review the Specific Findings and associated Data Qualifications presented in this report. Annotated Form 1s or spreadsheets for all samples reviewed are included after the Data Assessment Narratives. Form 1s for MS/MSD samples or spreadsheets are not annotated.

The release of this Data Validation Report is authorized by the following signature:

Craig G. Searfoss — 3-31-99.

for Paul B. Humburg, President — Date

4127 Plaza 94 South • St. Charles, MO 63304
(314) 936-1332 • Fax (314) 936-1335

SDG# MS006

Samples and Fractions Reviewed

Sample Identifications

ENSAFE ID	MATRIX	VOA	
002H12UA05	WATER	X	
002H16DA05	WATER	X	
002G185005	WATER	X	
002G185205	WATER	X	
002G185405	WATER	X	
002G185605	WATER	X	
002G185805	WATER	X	
002G20DA05	WATER	X	
009G01DA05	WATER	X	
009G02DA05	WATER	X	
009G03DA05	WATER	X	
009H03DA05	WATER	X	
009G04DA05	WATER	X	
00AT021699	WATER	X	
065G01UA05	WATER	X	
065G02UA05	WATER	X	
065G03UA05	WATER	X	
065G04UA05	WATER	X	
065G06UA05	WATER	X	
065G07UA05	WATER	X	
065H06DA05	WATER	X	
Total Billable Samples (Water/Soil)		21	0

VOA= Volatiles

DATA ASSESSMENT NARRATIVE

VOLATILE ORGANICS

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the SW-846 Method 8260B; the National Functional Guidelines for Organic Data Validation, February 1994, and DQO Level III requirements. All comments made within this report should be considered when examining the analytical results. Please refer the specific findings found in each category to the Summary of Data Qualification table.

SDG # MS006

A validation was performed on the Volatile Data from SDG MS006. The data was evaluated based on the following parameters:

*	•	Data Completeness
*	•	Holding Times
*	•	GC/MS Tuning
	•	Calibration
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicates
*	•	Field Duplicates
*	•	Internal Standard Performance
*	•	Compound Identification
*	•	Compound Quantitation

* - All criteria were met for this parameter.

Calibrations

The continuing calibration standard U0219008.D exhibited one (1) compound with a %D greater than 50% but less than 90%. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are qualified as estimated, UJ.

002G185005	carbon tetrachloride (54.1%)
002G185205	bromoform (89.3%)
002G185405	
002G185605	
002G185805	
002G20DA05	
002H12UA05	
002H16DA05	
009G01DA05	
009G02DA05	
009G03DA05	
009G04DA05	
009H03DA05	

The initial calibration analyzed 02/04/99 on instrument Flipper exhibited one (1) compound with a RRF less than 0.05. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

065G01UA05	acetone (0.030)
065G02UA05	
065G03UA05	
065G04UA05	
065G06UA05	
065G07UA05	
065H06DA05	

Calibrations (continued)

The continuing calibration standard F223006.D exhibited one (1) compound with a RRF less than 0.05. For the following samples and compound, the reported positive results are qualified as estimated, J, and the non-detect results are rejected, UR.

065G01UA05	acetone (0.038)
065G02UA05	
065G03UA05	
065G04UA05	
065G06UA05	
065G07UA05	
065H06DA05	

System Performance and Overall Assessment

The data required qualifications/rejections.

GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported Quantitation limit is qualified as estimated

UR = Result is rejected and unusable

D = Result value is based on dilution analysis

METHOD BLANK QUALIFICATION CODES

CRQL = The sample result for the blank contaminant is less than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is rejected and the CRQL for that compound is reported.

U = The sample result for the blank contaminant is greater than the sample CRQL and is less than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is qualified as non detected at the compound value reported.

No Action = The sample result for the blank contaminant is greater than the sample CRQL and is greater than 5X (10X for common laboratory contaminants) the method blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	COMPOUND ID	DL	QL
002G185005	carbon tetrachloride (54.1%)	+/-	J/UJ
002G185205	bromoform (89.3%)		
002G185405			
002G185605			
002G185805			
002G20DA05			
002H12UA05			
002H16DA05			
009G01DA05			
009G02DA05			
009G03DA05			
009G04DA05			
009H03DA05			
065G01UA05	acetone (0.030)	+/-	J/UR
065G02UA05			
065G03UA05			
065G04UA05			
065G06UA05			
065G07UA05			
065H06DA05			
065G01UA05	acetone (0.038)	+/-	J/UR
065G02UA05			
065G03UA05			
065G04UA05			
065G06UA05			
065G07UA05			
065H06DA05			

* DL denotes the Form I qualifier supplied by the laboratory
QL denotes the qualifier used by the data validation firm
\+ in the DL column denotes a positive result
\- in the DL column denotes a non detect result

Data Validation Report

SDG MS007

ENSAFE VALIDATION SUMMARY REPORT

Site Name:	Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.:	0106-001-04-730-00
Laboratory:	Laucks Testing Laboratories, Inc. Seattle, Washington
Sample Delivery Groups:	MS007
Matrix:	Water
DQO Level:	III
Analysis:	Nitrate by EPA 300.0 and Total Organic Carbon by SW-846 9060

SDG MS007 Sample IDs

002G02UA05	002G11UA05
002G04UA05	002G13UA05
002G08UA05	002G14UA05
002G10UA05	

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

Nitrate and Total Organic Carbon Evaluation

1. All holding times, calibration verification, blank analysis, and laboratory control samples were acceptable. A matrix spike/matrix spike duplicate was not analyzed with this SDG. Because all quality assurance/quality control data were within criteria, no data qualification were necessary.

Data Validation Report

SDG MS008

ENSAFE VALIDATION SUMMARY REPORT

Site Name:	Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.:	0106-001-04-730-00
Laboratory:	Laucks Testing Laboratories, Inc. Seattle, Washington
Sample Delivery Groups:	MS008
Matrix:	Water
DQO Level:	III
Analysis:	Nitrate by EPA 300.0 and Total Organic Carbon by SW-846 9060

SDG MS008 Sample IDs

002G02DA05	002G15DA05
002G03DA05	002G18DA05
002G06DA05	

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

Nitrate and Total Organic Carbon Evaluation

1. All holding times, calibration verification, blank analysis, and laboratory control samples were acceptable. A matrix spike/matrix spike duplicate was not analyzed with this SDG. Because all quality assurance/quality control data were within criteria, no data qualification were necessary.

Data Validation Report

SDG MS009

ENSAFE VALIDATION SUMMARY REPORT

Site Name:	Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.:	0106-001-04-730-00
Laboratory:	Laucks Testing Laboratories, Inc. Seattle, Washington
Sample Delivery Groups:	MS009
Matrix:	Water
DQO Level:	III
Analysis:	Nitrate by EPA 300.0 and Total Organic Carbon by SW-846 9060

SDG MS009 Sample IDs
002G12UA05

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

Nitrate and Total Organic Carbon Evaluation

1. All holding times, calibration verification, blank analysis, and laboratory control samples were acceptable. A matrix spike/matrix spike duplicate was not analyzed with this SDG. Because all quality assurance/quality control data were within criteria, no data qualification were necessary.

Data Validation Report

SDG MS029

ENSAFE VALIDATION SUMMARY REPORT

Site Name:	Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.:	0106-001-04-730-00
Laboratory:	Savannah Laboratories, Savannah, Georgia
Sample Delivery Groups:	MS029
Matrix:	Water
DQO Level:	III
Analysis:	Volatile Organic Compounds by SW-846 8260

SDG MS029 Sample IDs

002G003540	002G003651
002G003547	002G003657
002G003552	002G003747
002G003644	002H003747 (dup of 002G003747)

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

Volatile Organic Compound Evaluation

1. All holding times, GC/MS instrument performance check results, initial and check calibration results, surrogate results, internal standard results, laboratory method blanks, matrix spike/matrix spike duplicate, and field duplicate results were acceptable. Sample 002G003257 was used for the matrix spike/matrix spike duplicate.

2. Trichloroethene and trans-1,2-dichloroethene were detected outside of the calibration range in samples 002G003651 and 002G003657. Both samples were diluted and trans-1,2-dichloroethene and trichloroethene results from the secondary dilution were substituted for the original sample results. Trichloroethene and trans-1,2-dichloroethene in these two samples were qualified "D" to indicate that the results were taken from the secondary dilution.

Data Validation Report

SDG MS030

ENSAFE VALIDATION SUMMARY REPORT

Site Name:	Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.:	0106-001-04-730-00
Laboratory:	Savannah Laboratories, Savannah, Georgia
Sample Delivery Groups:	MS030
Matrix:	Water
DQO Level:	III
Analysis:	Volatile Organic Compounds by SW-846 8260

SDG MS030 Sample IDs

002G003750	002G003852
002G003770	002G003860
002G003842	

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

Volatile Organic Compound Evaluation

1. All holding times, GC/MS instrument performance check results, initial and check calibration results, surrogate results, and internal standard results were acceptable. A field duplicate and matrix spike/matrix spike duplicate were not analyzed with this SDG.

2. Acetone was detected in the laboratory method blank and trip blank at a concentration of 2 μg/L. Chloroform was also detected in the field blank at a concentration of 1 μg/L. No chloroform was detected in the investigative samples; however, all acetone detected in the samples were flagged "U" due to blank contamination.

Data Validation Report

SDG MS031

ENSAFE VALIDATION SUMMARY REPORT

Site Name:	Naval Support Activity Mid-South, Millington, Tennessee
CTO and Subtask No.:	0106-001-04-730-00
Laboratory:	Savannah Laboratories, Savannah, Georgia
Sample Delivery Groups:	MS031
Matrix:	Water
DQO Level:	III
Analysis:	Volatile Organic Compounds by SW-846 8260

SDG MS031 Sample IDs

002W000701	002W001001
002W000702	002W001002
002W000801	002W001101
002W000802	002R001101 (Dup of 002W001101)
002W000901	002W001102
002W000902	002R001102 (Dup of 002W001102)

VALIDATION RESULTS

All samples were received intact by the laboratory and with the proper documentation. The following section summarizes the data validation results.

Volatile Organic Compound Evaluation

1. All holding times, GC/MS instrument performance check results, initial and check calibration results, surrogate results, internal standard results, laboratory method blanks, and field duplicate results were acceptable. A field duplicate and matrix spike/matrix spike duplicate were not analyzed with this SDG.

2. Acetone was detected in the field blank at a concentration of 19 μg/L. All acetone detected in the samples were flagged "U" due to blank contamination.

Validated Data Summary Tables

SDG MEM08

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

ALKALINITY							
	SAMPLE ID ------->	002-G-02DA-03	002-H-02DA-03	002-G-06DA-03	002-H-06DA-03		
	ORIGINAL ID ----->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	LAB SAMPLE ID --->	S772215*1	S772215*3	S772215*2	S772215*4		
	ID FROM REPORT -->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	SAMPLE DATE ----->	04/21/97	04/21/97	04/21/97	04/21/97		
	DATE ANALYZED --->	04/22/97	04/22/97	04/22/97	04/22/97		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	MG/L	MG/L	MG/L	MG/L		
CAS #	Parameter	MEM08 VAL	MEM08 VAL	MEM08 VAL	MEM08 VAL		
471-34-1	Alkalinity (as CaCO3)	300.	320.	480.	460.		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

APX9-METAL													
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-03DA-03		002-G-06DA-03		002-H-06DA-03		002-G-09DA-03	
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772152*1		S772215*2		S772215*4		S772130*1	
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	SAMPLE DATE ----->	04/21/97		04/21/97		04/16/97		04/21/97		04/21/97		04/16/97	
	DATE EXTRACTED -->	04/24/97		04/24/97		04/24/97		04/24/97		04/24/97		04/24/97	
	DATE ANALYZED --->	04/25/97		04/25/97		04/25/97		04/25/97		04/25/97		04/25/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter *	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL
7440-36-0	Antimony	17.7	U	17.7	U	17.7	U	17.7	U	17.7	U	17.7	U
7440-38-2	Arsenic	6.1	U	3.9	U	6.9	U	8.5	J	7.4	U	6.9	U
7440-39-3	Barium	654.		659.		523.		500.		521.		213.	
7440-41-7	Beryllium	0.39	J	0.12	U	0.12	U	0.12	U	0.12	U	0.12	U
7440-43-9	Cadmium	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
7440-47-3	Chromium	91.1	J	61.6	J	11.9		7.	J	2.	U	4.2	J
7440-48-4	Cobalt	15.2		15.7		2.4	U	2.4	U	2.4	U	2.4	U
7440-50-8	Copper	10.9	U	4.	U	4.6	U	2.1	U	2.1	U	2.6	U
7439-92-1	Lead	5.6		1.1	U	1.1	U	1.4	J	1.1	U	1.1	U
7439-97-6	Mercury	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
7440-02-0	Nickel	62.4		49.		12.7	J	8.8	U	9.9	J	8.8	U
7782-49-2	Selenium	1.7	UJ	1.7	UJ	1.8	UJ	1.7	UJ	1.7	UJ	2.5	UJ
7440-22-4	Silver	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
7440-28-0	Thallium	0.97	U	0.97	U	0.97	U	0.97	U	0.97	UJ	0.97	U
7440-62-2	Vanadium	16.5		4.5	J	2.2	J	8.	J	4.8	J	2.3	J
7440-66-6	Zinc	90.7	J	24.3	J	24.2		8.9	U	5.3	U	16.2	J
7440-31-5	Tin	12.	U	12.	U	12.	U	12.	U	12.	U	12.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

APX9-METAL								
	SAMPLE ID ------->	002-G-09UA-03		002-G-11DA-03				
	ORIGINAL ID ----->	002G09UA03		002G11DA03				
	LAB SAMPLE ID --->	S772130*2		S772189*1				
	ID FROM REPORT -->	002G09UA03		002G11DA03				
	SAMPLE DATE ----->	04/16/97		04/18/97				
	DATE EXTRACTED -->	04/24/97		04/24/97				
	DATE ANALYZED --->	04/25/97		04/25/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM08	VAL	MEM08	VAL			
7440-36-0	Antimony	17.7	U	17.7	U			
7440-38-2	Arsenic	5.4	U	25.2				
7440-39-3	Barium	98.5		199.				
7440-41-7	Beryllium	0.12	U	0.12	U			
7440-43-9	Cadmium	2.	U	2.	U			
7440-47-3	Chromium	12.		5.6	J			
7440-48-4	Cobalt	3.9	J	2.4	U			
7440-50-8	Copper	7.2	U	2.6	U			
7439-92-1	Lead	1.1	U	1.1	UJ			
7439-97-6	Mercury	0.05	U	0.05	U			
7440-02-0	Nickel	12.	J	8.8	U			
7782-49-2	Selenium	3.1	UJ	17.	UJ			
7440-22-4	Silver	1.5	U	1.5	U			
7440-28-0	Thallium	0.97	U	0.97	UJ			
7440-62-2	Vanadium	3.7	J	4.4	J			
7440-66-6	Zinc	18.2	J	9.6	U			
7440-31-5	Tin	12.	U	12.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

BOD5									
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-06DA-03		002-H-06DA-03			
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G06DA03		002H06DA03			
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772215*2		S772215*4			
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G06DA03		002H06DA03			
	SAMPLE DATE ----->	04/21/97		04/21/97		04/21/97		04/21/97			
	DATE EXTRACTED -->	04/22/97		04/22/97		04/22/97		04/22/97			
	DATE ANALYZED --->	04/22/97		04/22/97		04/22/97		04/22/97			
	MATRIX ---------->	Water		Water		Water		Water			
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L			
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL		
9999900-03-8	Biochemical Oxygen Demand (5-day)	2.	U	2.	U	2.	U	2.	U		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

CHLORIDE-I							
	SAMPLE ID ------->	002-G-02DA-03	002-H-02DA-03	002-G-06DA-03	002-H-06DA-03		
	ORIGINAL ID ----->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	LAB SAMPLE ID --->	S772215*1	S772215*3	S772215*2	S772215*4		
	ID FROM REPORT -->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	SAMPLE DATE ----->	04/21/97	04/21/97	04/21/97	04/21/97		
	DATE ANALYZED --->	05/16/97	05/16/97	05/16/97	05/16/97		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	MG/L	MG/L	MG/L	MG/L		
CAS #	Parameter	MEM08 VAL	MEM08 VAL	MEM08 VAL	MEM08 VAL		
16887-00-6	Chloride	26.	29.	160.	150.		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

COD							
	SAMPLE ID ------->	002-G-02DA-03	002-H-02DA-03	002-G-06DA-03	002-H-06DA-03		
	ORIGINAL ID ----->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	LAB SAMPLE ID --->	S772215*1	S772215*3	S772215*2	S772215*4		
	ID FROM REPORT -->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	SAMPLE DATE ----->	04/21/97	04/21/97	04/21/97	04/21/97		
	DATE EXTRACTED -->	05/07/97	05/07/97	05/07/97	05/07/97		
	DATE ANALYZED --->	05/08/97	05/08/97	05/08/97	05/08/97		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	MG/L	MG/L	MG/L	MG/L		
CAS #	Parameter	MEM08 VAL	MEM08 VAL	MEM08 VAL	MEM08 VAL		
9999900-04-0	Chemical Oxygen Demand	20. U	20. U	20. U	20. U		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

FE & MN							
	SAMPLE ID ------->	002-G-02DA-03	002-H-02DA-03	002-G-06DA-03	002-H-06DA-03		
	ORIGINAL ID ----->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	LAB SAMPLE ID --->	S772215*1	S772215*3	S772215*2	S772215*4		
	ID FROM REPORT -->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	SAMPLE DATE ----->	04/21/97	04/21/97	04/21/97	04/21/97		
	DATE EXTRACTED -->	04/24/97	04/24/97	04/24/97	04/24/97		
	DATE ANALYZED --->	04/25/97	04/25/97	04/25/97	04/25/97		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	UG/L	UG/L	UG/L	UG/L		
CAS #	Parameter	MEM08 VAL	MEM08 VAL	MEM08 VAL	MEM08 VAL		
7439-89-6	Iron	21800.	15700.	24100.	24700.		
7439-96-5	Manganese	119.	94.2	235.	248.		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

HARDNESS	SAMPLE ID ------->	002-G-02DA-03	002-H-02DA-03	002-G-06DA-03	002-H-06DA-03		
	ORIGINAL ID ----->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	LAB SAMPLE ID --->	S772215*1	S772215*3	S772215*2	S772215*4		
	ID FROM REPORT -->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	SAMPLE DATE ----->	04/21/97	04/21/97	04/21/97	04/21/97		
	DATE ANALYZED --->	05/07/97	05/07/97	05/07/97	05/07/97		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	MG/L	MG/L	MG/L	MG/L		
CAS #	Parameter	MEM08 VAL	MEM08 VAL	MEM08 VAL	MEM08 VAL		
9999900-03-3	Hardness as CaCO3	260.	280.	370.	430.		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

HPC							
	SAMPLE ID ------->	002-G-02DA-03	002-H-02DA-03	002-G-06DA-03	002-H-06DA-03		
	ORIGINAL ID ----->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	LAB SAMPLE ID --->	S772215*1	S772215*3	S772215*2	S772215*4		
	ID FROM REPORT -->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	SAMPLE DATE ----->	04/21/97	04/21/97	04/21/97	04/21/97		
	DATE EXTRACTED -->	04/22/97	04/22/97	04/22/97	04/22/97		
	DATE ANALYZED --->	04/22/97	04/22/97	04/22/97	04/22/97		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	CFU/M	CFU/M	CFU/M	CFU/M		
CAS #	Parameter	MEM08 VAL	MEM08 VAL	MEM08 VAL	MEM08 VAL		
9999900-03-6	Standard Plate Count	150.	140.	120. J	480. J		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

KJELDAHL							
	SAMPLE ID ------->	002-G-02DA-03	002-H-02DA-03	002-G-06DA-03	002-H-06DA-03		
	ORIGINAL ID ----->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	LAB SAMPLE ID --->	S772215*1	S772215*3	S772215*2	S772215*4		
	ID FROM REPORT -->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	SAMPLE DATE ----->	04/21/97	04/21/97	04/21/97	04/21/97		
	DATE EXTRACTED -->	05/07/97	05/07/97	05/07/97	05/07/97		
	DATE ANALYZED --->	05/07/97	05/07/97	05/07/97	05/07/97		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	MG/L	MG/L	MG/L	MG/L		
CAS #	Parameter	MEM08 VAL	MEM08 VAL	MEM08 VAL	MEM08 VAL		
9999000-72-6	Kjeldahl Nitrogen, Total	0.63	0.6	2.2	2.1		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

METAL-CN													
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-03DA-03		002-G-06DA-03		002-H-06DA-03		002-G-09DA-03	
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772152*1		S772215*2		S772215*4		S772130*1	
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	SAMPLE DATE ----->	04/21/97		04/21/97		04/16/97		04/21/97		04/21/97		04/16/97	
	DATE EXTRACTED -->	04/25/97		04/25/97		04/23/97		04/25/97		04/25/97		04/23/97	
	DATE ANALYZED --->	04/25/97		04/25/97		04/23/97		04/25/97		04/25/97		04/23/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

METAL-CN								
	SAMPLE ID ------->	002-G-09UA-03		002-G-11DA-03				
	ORIGINAL ID ----->	002G09UA03		002G11DA03				
	LAB SAMPLE ID --->	S772130*2		S772189*1				
	ID FROM REPORT -->	002G09UA03		002G11DA03				
	SAMPLE DATE ----->	04/16/97		04/18/97				
	DATE EXTRACTED -->	04/23/97		04/25/97				
	DATE ANALYZED --->	04/23/97		04/25/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM08	VAL	MEM08	VAL			
57-12-5	Cyanide (CN)	10.	U	10.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

METHANE													
		SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-06DA-03		002-H-06DA-03				
		ORIGINAL ID ----->	002G02DA03		002H02DA03		002G06DA03		002H06DA03				
		LAB SAMPLE ID --->	S772215*1		S772215*3		S772215*2		S772215*4				
		ID FROM REPORT -->	002G02DA03		002H02DA03		002G06DA03		002H06DA03				
		SAMPLE DATE ----->	04/21/97		04/21/97		04/21/97		04/21/97				
		DATE EXTRACTED -->	05/01/97		05/01/97		05/01/97		05/01/97				
		DATE ANALYZED --->	05/01/97		05/01/97		05/01/97		05/01/97				
		MATRIX ---------->	Water		Water		Water		Water				
		UNITS ---------->	UG/L		UG/L		UG/L		UG/L				
CAS #	Parameter		MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL			
74-82-8	METHANE		71.		69.		47.	U	47.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

NITRATE							
	SAMPLE ID ------->	002-G-02DA-03	002-H-02DA-03	002-G-06DA-03	002-H-06DA-03		
	ORIGINAL ID ----->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	LAB SAMPLE ID --->	S772215*1	S772215*3	S772215*2	S772215*4		
	ID FROM REPORT -->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	SAMPLE DATE ----->	04/21/97	04/21/97	04/21/97	04/21/97		
	DATE EXTRACTED -->	05/09/97	05/09/97	05/09/97	05/09/97		
	DATE ANALYZED --->	04/23/97	04/23/97	04/23/97	04/23/97		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	MG/L	MG/L	MG/L	MG/L		
CAS #	Parameter	MEM08 VAL	MEM08 VAL	MEM08 VAL	MEM08 VAL		
14797-55-8	Nitrate (as N)	0.05 U	0.05 U	0.19 J	0.33 J		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SULFATE-IC											
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-06DA-03		002-H-06DA-03			
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G06DA03		002H06DA03			
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772215*2		S772215*4			
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G06DA03		002H06DA03			
	SAMPLE DATE ----->	04/21/97		04/21/97		04/21/97		04/21/97			
	DATE ANALYZED --->	05/14/97		05/14/97		05/14/97		05/14/97			
	MATRIX ---------->	Water		Water		Water		Water			
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L			
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL		
14808-79-8	Sulfate	5.	U	5.	U	5.	U	5.	U		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SW846-HERB													
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-03DA-03		002-G-06DA-03		002-H-06DA-03		002-G-09DA-03	
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772152*1		S772215*2		S772215*4		S772130*1	
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	SAMPLE DATE ----->	04/21/97		04/21/97		04/16/97		04/21/97		04/21/97		04/16/97	
	DATE EXTRACTED -->	04/23/97		04/23/97		04/23/97		04/23/97		04/23/97		04/23/97	
	DATE ANALYZED --->	04/25/97		04/25/97		04/25/97		04/25/97		04/25/97		04/25/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL
75-99-0	Dalapon	120.	U	120.	U	120.	U	120.	U	120.	U	120.	U
93-65-2	MCPP	120.	U	120.	U	120.	U	120.	U	120.	U	120.	U
1918-00-9	Dicamba	1.2	U	1.2	U	0.076	U	1.2	U	1.2	U	1.2	U
94-74-6	MCPA	120.	U	120.	U	120.	U	120.	U	98.	J	58.	J
120-36-5	Dichlorprop	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
94-75-7	2,4-D	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
93-72-1	2,4,5-TP (Silvex)	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
93-76-5	2,4,5-T	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
88-85-7	Dinoseb	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
94-82-6	2,4-DB	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
93-65-2	MCPP	NR		NR		NR		NR		NR		NR	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SW846-HERB								
	SAMPLE ID ------->	002-G-09UA-03		002-G-11DA-03				
	ORIGINAL ID ----->	002G09UA03		002G11DA03				
	LAB SAMPLE ID --->	S772130*2		S772189*1				
	ID FROM REPORT -->	002G09UA03		002G11DA03				
	SAMPLE DATE ----->	04/16/97		04/18/97				
	DATE EXTRACTED -->	04/23/97		04/23/97				
	DATE ANALYZED --->	04/25/97		04/25/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM08	VAL	MEM08	VAL			
75-99-0	Dalapon	120.	U	120.	U			
93-65-2	MCPP	120.	U	120.	U			
1918-00-9	Dicamba	0.074	U	0.18	J			
94-74-6	MCPA	120.	U	120.	U			
120-36-5	Dichlorprop	6.	U	6.	U			
94-75-7	2,4-D	0.5	U	0.5	U			
93-72-1	2,4,5-TP (Silvex)	0.5	U	0.5	U			
93-76-5	2,4,5-T	0.5	U	0.5	U			
88-85-7	Dinoseb	6.	U	6.	U			
94-82-6	2,4-DB	0.5	U	0.5	U			
93-65-2	MCPP	NR		NR				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SW846-OP P													
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-03DA-03		002-G-06DA-03		002-H-06DA-03		002-G-09DA-03	
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772152*1		S772215*2		S772215*4		S772130*1	
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	SAMPLE DATE ----->	04/21/97		04/21/97		04/16/97		04/21/97		04/21/97		04/16/97	
	DATE EXTRACTED -->	04/23/97		04/23/97		04/23/97		04/23/97		04/23/97		04/23/97	
	DATE ANALYZED --->	04/26/97		04/30/97		04/26/97		04/26/97		04/30/97		04/26/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL
86-50-0	Azinphos methyl	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
35400-43-2	Sulprofos (Bolstar)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
2921-88-2	Chloropyrifos	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
56-72-4	Coumaphos	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
8065-48-3	Demeton,O	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
126-75-0	Demeton,S	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
333-41-5	Diazinon	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
62-73-7	Dichlorvos	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
298-04-4	Disulfoton	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
13194-48-4	Ethoprop	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
115-90-2	Fensulfothion	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
55-38-9	Fenthion	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
26718-65-0	Mevinphos	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
300-76-5	Naled	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
298-00-0	Methyl parathion	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
298-02-2	Phorate	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
299-84-3	Ronnel	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
22248-79-9	Stirophos (Tetrachlorovinphos)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
327-98-0	Trichloronate	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
150-50-5	Merphos	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
34643-46-4	Tokuthion	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SW846-OP P							
	SAMPLE ID ------->	002-G-09UA-03		002-G-11DA-03			
	ORIGINAL ID ----->	002G09UA03		002G11DA03			
	LAB SAMPLE ID --->	S772130*2		S772189*1			
	ID FROM REPORT -->	002G09UA03		002G11DA03			
	SAMPLE DATE ----->	04/16/97		04/18/97			
	DATE EXTRACTED -->	04/23/97		04/23/97			
	DATE ANALYZED --->	04/26/97		04/26/97			
	MATRIX ---------->	Water		Water			
	UNITS ---------->	UG/L		UG/L			
CAS #	Parameter	MEM08	VAL	MEM08	VAL		
86-50-0	Azinphos methyl	1.	U	1.	U		
35400-43-2	Sulprofos (Bolstar)	1.	U	1.	U		
2921-88-2	Chloropyrifos	1.	U	1.	U		
56-72-4	Coumaphos	1.	U	1.	U		
8065-48-3	Demeton,O	2.5	U	2.5	U		
126-75-0	Demeton,S	2.5	U	2.5	U		
333-41-5	Diazinon	1.	U	1.	U		
62-73-7	Dichlorvos	2.	U	2.	U		
298-04-4	Disulfoton	2.	U	2.	U		
13194-48-4	Ethoprop	0.5	U	0.5	U		
115-90-2	Fensulfothion	5.	U	5.	U		
55-38-9	Fenthion	1.	U	1.	U		
26718-65-0	Mevinphos	2.	U	2.	U		
300-76-5	Naled	5.	U	5.	U		
298-00-0	Methyl parathion	0.5	U	0.5	U		
298-02-2	Phorate	1.	U	1.	U		
299-84-3	Ronnel	1.	U	1.	U		
22248-79-9	Stirophos (Tetrachlorovinphos)	1.	U	1.	U		
327-98-0	Trichloronate	1.	U	1.	U		
150-50-5	Merphos	1.	U	1.	U		
34643-46-4	Tokuthion	1.	U	1.	U		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SW846-PEST																	
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-03DA-03		002-G-06DA-03		002-H-06DA-03		002-G-09DA-03	
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772152*1		S772215*2		S772215*4		S772130*1	
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	SAMPLE DATE ----->	04/21/97		04/21/97		04/16/97		04/21/97		04/21/97		04/16/97	
	DATE EXTRACTED -->	04/23/97		04/23/97		04/23/97		04/23/97		04/23/97		04/23/97	
	DATE ANALYZED --->	04/25/97		04/25/97		04/25/97		04/25/97		04/25/97		04/25/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL
319-84-6	alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-85-7	beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-86-8	delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
76-44-8	Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
309-00-2	Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
959-98-8	Endosulfan I	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
60-57-1	Dieldrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-55-9	4,4'-DDE	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-20-8	Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
33213-65-9	Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-54-8	4,4'-DDD	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
50-29-3	4,4'-DDT	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.019	J
72-43-5	Methoxychlor	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
7421-93-4	Endrin aldehyde	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
8001-35-2	Toxaphene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
12674-11-2	Aroclor-1016	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11104-28-2	Aroclor-1221	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
11141-16-5	Aroclor-1232	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
53469-21-9	Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6	Aroclor-1248	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11097-69-1	Aroclor-1254	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11096-82-5	Aroclor-1260	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
57-74-9	Chlordane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SW846-PEST								
	SAMPLE ID ------->	002-G-09UA-03		002-G-11DA-03				
	ORIGINAL ID ----->	002G09UA03		002G11DA03				
	LAB SAMPLE ID --->	S772130*2		S772189*1				
	ID FROM REPORT -->	002G09UA03		002G11DA03				
	SAMPLE DATE ----->	04/16/97		04/18/97				
	DATE EXTRACTED -->	04/23/97		04/23/97				
	DATE ANALYZED --->	04/25/97		04/25/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM08	VAL	MEM08	VAL			
319-84-6	alpha-BHC	0.05	U	0.05	U			
319-85-7	beta-BHC	0.05	U	0.05	U			
319-86-8	delta-BHC	0.05	U	0.05	U			
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U			
76-44-8	Heptachlor	0.05	U	0.05	U			
309-00-2	Aldrin	0.05	U	0.05	U			
1024-57-3	Heptachlor epoxide	0.05	U	0.05	U			
959-98-8	Endosulfan I	0.05	U	0.05	U			
60-57-1	Dieldrin	0.1	U	0.1	U			
72-55-9	4,4'-DDE	0.1	U	0.1	U			
72-20-8	Endrin	0.1	U	0.1	U			
33213-65-9	Endosulfan II	0.1	U	0.1	U			
72-54-8	4,4'-DDD	0.1	U	0.1	U			
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U			
50-29-3	4,4'-DDT	0.1	U	0.1	U			
72-43-5	Methoxychlor	0.5	U	0.5	U			
7421-93-4	Endrin aldehyde	0.1	U	0.1	U			
8001-35-2	Toxaphene	5.	U	5.	U			
12674-11-2	Aroclor-1016	1.	U	1.	U			
11104-28-2	Aroclor-1221	2.	U	2.	U			
11141-16-5	Aroclor-1232	1.	U	1.	U			
53469-21-9	Aroclor-1242	1.	U	1.	U			
12672-29-6	Aroclor-1248	1.	U	1.	U			
11097-69-1	Aroclor-1254	1.	U	1.	U			
11096-82-5	Aroclor-1260	1.	U	1.	U			
57-74-9	Chlordane	0.5	U	0.5	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SW846-SVOA													
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-03DA-03		002-G-06DA-03		002-H-06DA-03		002-G-09DA-03	
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772152*1		S772215*2		S772215*4		S772130*1	
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	SAMPLE DATE ----->	04/21/97		04/21/97		04/16/97		04/21/97		04/21/97		04/16/97	
	DATE EXTRACTED -->	04/23/97		04/23/97		04/23/97		04/23/97		04/23/97		04/23/97	
	DATE ANALYZED --->	04/26/97		04/26/97		04/26/97		04/26/97		04/26/97		04/25/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL
108-95-2	Phenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-57-8	2-Chlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ
9999900-32-2	3-Methylphenol/4-Methylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-72-1	Hexachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
98-95-3	Nitrobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-59-1	Isophorone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-75-5	2-Nitrophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
105-67-9	2,4-Dimethylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-83-2	2,4-Dichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-20-3	Naphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-47-8	4-Chloroaniline	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
87-68-3	Hexachlorobutadiene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-57-6	2-Methylnaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-95-4	2,4,5-Trichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-58-7	2-Chloronaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-74-4	2-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
131-11-3	Dimethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
208-96-8	Acenaphthylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
99-09-2	3-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
83-32-9	Acenaphthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
51-28-5	2,4-Dinitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
100-02-7	4-Nitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
132-64-9	Dibenzofuran	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SW846-SVOA													
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-03DA-03		002-G-06DA-03		002-H-06DA-03		002-G-09DA-03	
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772152*1		S772215*2		S772215*4		S772130*1	
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	SAMPLE DATE ----->	04/21/97		04/21/97		04/16/97		04/21/97		04/21/97		04/16/97	
	DATE EXTRACTED -->	04/23/97		04/23/97		04/23/97		04/23/97		04/23/97		04/23/97	
	DATE ANALYZED --->	04/26/97		04/26/97		04/26/97		04/26/97		04/26/97		04/25/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL
121-14-2	2,4-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-66-2	Diethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
7005-72-3	4-Chlorophenylphenyl ether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-73-7	Fluorene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-01-6	4-Nitroaniline	50.	UJ	50.	UJ	50.	UJ	50.	UJ	50.	UJ	50.	UJ
534-52-1	2-Methyl-4,6-Dinitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
86-30-6	N-Nitrosodiphenylamine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
118-74-1	Hexachlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
87-86-5	Pentachlorophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
85-01-8	Phenanthrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-12-7	Anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-74-8	Carbazole	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-74-2	Di-n-butylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
206-44-0	Fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
129-00-0	Pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
85-68-7	Butylbenzylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
56-55-3	Benzo(a)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
218-01-9	Chrysene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
117-84-0	Di-n-octylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
50-32-8	Benzo(a)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SW846-SVOA			
	SAMPLE ID ------->	002-G-09UA-03	002-G-11DA-03
	ORIGINAL ID ----->	002G09UA03	002G11DA03
	LAB SAMPLE ID --->	S772130*2	S772189*1
	ID FROM REPORT -->	002G09UA03	002G11DA03
	SAMPLE DATE ----->	04/16/97	04/18/97
	DATE EXTRACTED -->	04/23/97	04/23/97
	DATE ANALYZED --->	04/25/97	04/26/97
	MATRIX ---------->	Water	Water
	UNITS ---------->	UG/L	UG/L

CAS #	Parameter	MEM08	VAL	MEM08	VAL
108-95-2	Phenol	10.	U	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U
95-57-8	2-Chlorophenol	10.	U	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	UJ	10.	UJ
9999900-32-2	3-Methylphenol/4-Methylphenol	10.	U	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U	10.	U
67-72-1	Hexachloroethane	10.	U	10.	U
98-95-3	Nitrobenzene	10.	U	10.	U
78-59-1	Isophorone	10.	U	10.	U
88-75-5	2-Nitrophenol	10.	U	10.	U
105-67-9	2,4-Dimethylphenol	10.	U	10.	U
120-83-2	2,4-Dichlorophenol	10.	U	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U
91-20-3	Naphthalene	10.	U	10.	U
106-47-8	4-Chloroaniline	20.	U	20.	U
87-68-3	Hexachlorobutadiene	10.	U	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U
91-57-6	2-Methylnaphthalene	10.	U	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	UJ	10.	UJ
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U
95-95-4	2,4,5-Trichlorophenol	10.	U	10.	U
91-58-7	2-Chloronaphthalene	10.	U	10.	U
88-74-4	2-Nitroaniline	50.	U	50.	U
131-11-3	Dimethylphthalate	10.	U	10.	U
208-96-8	Acenaphthylene	10.	U	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U
99-09-2	3-Nitroaniline	50.	U	50.	U
83-32-9	Acenaphthene	10.	U	10.	U
51-28-5	2,4-Dinitrophenol	50.	U	50.	U
100-02-7	4-Nitrophenol	50.	U	50.	U
132-64-9	Dibenzofuran	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SW846-SVOA								
	SAMPLE ID ------->	002-G-09UA-03		002-G-11DA-03				
	ORIGINAL ID ----->	002G09UA03		002G11DA03				
	LAB SAMPLE ID --->	S772130*2		S772189*1				
	ID FROM REPORT -->	002G09UA03		002G11DA03				
	SAMPLE DATE ----->	04/16/97		04/18/97				
	DATE EXTRACTED -->	04/23/97		04/23/97				
	DATE ANALYZED --->	04/25/97		04/26/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM08	VAL	MEM08	VAL			
121-14-2	2,4-Dinitrotoluene	10.	U	10.	U			
84-66-2	Diethylphthalate	10.	U	10.	U			
7005-72-3	4-Chlorophenylphenyl ether	10.	U	10.	U			
86-73-7	Fluorene	10.	U	10.	U			
100-01-6	4-Nitroaniline	50.	UJ	50.	UJ			
534-52-1	2-Methyl-4,6-Dinitrophenol	50.	U	50.	U			
86-30-6	N-Nitrosodiphenylamine	10.	U	10.	U			
101-55-3	4-Bromophenyl-phenylether	10.	U	10.	U			
118-74-1	Hexachlorobenzene	10.	U	10.	U			
87-86-5	Pentachlorophenol	50.	U	50.	U			
85-01-8	Phenanthrene	10.	U	10.	U			
120-12-7	Anthracene	10.	U	10.	U			
86-74-8	Carbazole	10.	U	10.	U			
84-74-2	Di-n-butylphthalate	10.	U	10.	U			
206-44-0	Fluoranthene	10.	U	10.	U			
129-00-0	Pyrene	10.	U	10.	U			
85-68-7	Butylbenzylphthalate	10.	U	10.	U			
91-94-1	3,3'-Dichlorobenzidine	20.	U	20.	U			
56-55-3	Benzo(a)anthracene	10.	U	10.	U			
218-01-9	Chrysene	10.	U	10.	U			
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U			
117-84-0	Di-n-octylphthalate	10.	U	10.	U			
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U			
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U			
50-32-8	Benzo(a)pyrene	10.	U	10.	U			
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U			
53-70-3	Dibenz(a,h)anthracene	10.	U	10.	U			
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SW846-VOA													
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-03DA-03		002-G-06DA-03		002-H-06DA-03		002-G-09DA-03	
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772152*1		S772215*2		S772215*4		S772130*1	
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	SAMPLE DATE ----->	04/21/97		04/21/97		04/16/97		04/21/97		04/21/97		04/16/97	
	DATE ANALYZED --->	04/23/97		04/23/97		04/19/97		04/23/97		04/23/97		04/18/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	11.		10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-09-2	Methylene chloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-01-6	Trichloroethene	33.		33.		230.		5.	U	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-27-4	Bromodichloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-88-3	Toluene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
127-18-4	Tetrachloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-25-2	Bromoform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-64-1	Acetone	50.	UJ	50.	UJ	50.	UJ	50.	UJ	50.	UJ	38.	J
75-15-0	Carbon disulfide	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-93-3	2-Butanone (MEK)	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
591-78-6	2-Hexanone	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
1330-20-7	Xylene (Total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	26.		29.		420.		5.	U	5.	U	5.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

SW846-VOA								
	SAMPLE ID ------->	002-G-09UA-03		002-G-11DA-03				
	ORIGINAL ID ----->	002G09UA03		002G11DA03				
	LAB SAMPLE ID --->	S772130*2		S772189*1				
	ID FROM REPORT -->	002G09UA03		002G11DA03				
	SAMPLE DATE ----->	04/16/97		04/18/97				
	DATE ANALYZED --->	04/18/97		04/23/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM08	VAL	MEM08	VAL			
74-87-3	Chloromethane	10.	U	10.	U			
75-01-4	Vinyl chloride	10.	U	10.	U			
74-83-9	Bromomethane	10.	U	10.	U			
75-00-3	Chloroethane	10.	U	10.	U			
75-35-4	1,1-Dichloroethene	5.	U	5.	U			
75-09-2	Methylene chloride	5.	U	5.	U			
75-34-3	1,1-Dichloroethane	5.	U	5.	U			
67-66-3	Chloroform	5.	U	5.	U			
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U			
56-23-5	Carbon tetrachloride	5.	U	5.	U			
71-43-2	Benzene	5.	U	5.	U			
107-06-2	1,2-Dichloroethane	5.	U	5.	U			
79-01-6	Trichloroethene	5.	U	5.	U			
78-87-5	1,2-Dichloropropane	5.	U	5.	U			
75-27-4	Bromodichloromethane	5.	U	5.	U			
108-88-3	Toluene	5.	U	5.	U			
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U			
127-18-4	Tetrachloroethene	5.	U	5.	U			
124-48-1	Dibromochloromethane	5.	U	5.	U			
108-90-7	Chlorobenzene	5.	U	5.	U			
100-41-4	Ethylbenzene	5.	U	5.	U			
100-42-5	Styrene	5.	U	5.	U			
75-25-2	Bromoform	5.	U	5.	U			
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U			
67-64-1	Acetone	50.	U	50.	UJ			
75-15-0	Carbon disulfide	5.	U	5.	U			
78-93-3	2-Butanone (MEK)	25.	U	25.	U			
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U	25.	U			
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U			
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U			
591-78-6	2-Hexanone	25.	U	25.	U			
1330-20-7	Xylene (Total)	5.	U	5.	U			
540-59-0	1,2-Dichloroethene (total)	5.	U	3.8	J			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

TDS							
	SAMPLE ID ------->	002-G-02DA-03	002-H-02DA-03	002-G-06DA-03	002-H-06DA-03		
	ORIGINAL ID ----->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	LAB SAMPLE ID --->	S772215*1	S772215*3	S772215*2	S772215*4		
	ID FROM REPORT -->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	SAMPLE DATE ----->	04/21/97	04/21/97	04/21/97	04/21/97		
	DATE EXTRACTED -->	04/23/97	04/23/97	04/23/97	04/23/97		
	DATE ANALYZED --->	04/24/97	04/24/97	04/24/97	04/24/97		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	MG/L	MG/L	MG/L	MG/L		
CAS #	Parameter	MEM08 VAL	MEM08 VAL	MEM08 VAL	MEM08 VAL		
9999900-07-2	Total Dissolved Solids (TDS)	320.	330.	720.	680.		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

TOC							
	SAMPLE ID ------->	002-G-02DA-03	002-H-02DA-03	002-G-06DA-03	002-H-06DA-03		
	ORIGINAL ID ----->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	LAB SAMPLE ID --->	S772215*1	S772215*3	S772215*2	S772215*4		
	ID FROM REPORT -->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	SAMPLE DATE ----->	04/21/97	04/21/97	04/21/97	04/21/97		
	DATE EXTRACTED -->	04/29/97	04/29/97	04/29/97	04/29/97		
	DATE ANALYZED --->	04/29/97	04/29/97	04/29/97	04/29/97		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	MG/L	MG/L	MG/L	MG/L		
CAS #	Parameter	MEM08 VAL	MEM08 VAL	MEM08 VAL	MEM08 VAL		
9999900-01-4	Total Organic Carbon (TOC)	1. U	1.1	3.2	3.1		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

TOTAL PHOS							
	SAMPLE ID ------->	002-G-02DA-03	002-H-02DA-03	002-G-06DA-03	002-H-06DA-03		
	ORIGINAL ID ----->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	LAB SAMPLE ID --->	S772215*1	S772215*3	S772215*2	S772215*4		
	ID FROM REPORT -->	002G02DA03	002H02DA03	002G06DA03	002H06DA03		
	SAMPLE DATE ----->	04/21/97	04/21/97	04/21/97	04/21/97		
	DATE EXTRACTED -->	05/07/97	05/07/97	05/07/97	05/07/97		
	DATE ANALYZED --->	05/14/97	05/14/97	05/14/97	05/14/97		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	MG/L	MG/L	MG/L	MG/L		
CAS #	Parameter	MEM08 VAL	MEM08 VAL	MEM08 VAL	MEM08 VAL		
22569-71-7	Total phosphorus	0.41	0.43	0.6	0.59		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

TPH													
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-03DA-03		002-G-06DA-03		002-H-06DA-03		002-G-09DA-03	
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772152*1		S772215*2		S772215*4		S772130*1	
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	SAMPLE DATE ----->	04/21/97		04/21/97		04/16/97		04/21/97		04/21/97		04/16/97	
	DATE EXTRACTED -->	04/23/97		04/23/97		04/23/97		04/23/97		04/23/97		04/23/97	
	DATE ANALYZED --->	04/24/97		04/24/97		04/24/97		04/24/97		04/24/97		04/24/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL
9999900-02-4	Petroleum Hydrocarbons, TPH	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

TPH								
	SAMPLE ID ------->	002-G-09UA-03		002-G-11DA-03				
	ORIGINAL ID ----->	002G09UA03		002G11DA03				
	LAB SAMPLE ID --->	S772130*2		S772189*1				
	ID FROM REPORT -->	002G09UA03		002G11DA03				
	SAMPLE DATE ----->	04/16/97		04/18/97				
	DATE EXTRACTED -->	04/23/97		04/23/97				
	DATE ANALYZED --->	04/24/97		04/24/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	MG/L		MG/L				
CAS #	Parameter	MEM08	VAL	MEM08	VAL			
9999900-02-4	Petroleum Hydrocarbons, TPH	1.	U	1.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

TPH-DRO													
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-03DA-03		002-G-06DA-03		002-H-06DA-03		002-G-09DA-03	
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772152*1		S772215*2		S772215*4		S772130*1	
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	SAMPLE DATE ----->	04/21/97		04/21/97		04/16/97		04/21/97		04/21/97		04/16/97	
	DATE EXTRACTED -->	04/23/97		04/23/97		04/23/97		04/23/97		04/23/97		04/23/97	
	DATE ANALYZED --->	05/01/97		04/29/97		05/01/97		05/01/97		04/29/97		04/29/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL
9999900-02-6	Diesel Range Organics	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

TPH-DRO								
	SAMPLE ID ------->	002-G-09UA-03		002-G-11DA-03				
	ORIGINAL ID ----->	002G09UA03		002G11DA03				
	LAB SAMPLE ID --->	S772130*2		S772189*1				
	ID FROM REPORT -->	002G09UA03		002G11DA03				
	SAMPLE DATE ----->	04/16/97		04/18/97				
	DATE EXTRACTED -->	04/23/97		04/23/97				
	DATE ANALYZED --->	04/29/97		04/29/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	MG/L		MG/L				
CAS #	Parameter	MEM08	VAL	MEM08	VAL			
9999900-02-6	Diesel Range Organics	0.1	U	0.1	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

TPH-GRO													
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-03DA-03		002-G-06DA-03		002-H-06DA-03		002-G-09DA-03	
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772152*1		S772215*2		S772215*4		S772130*1	
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G03DA03		002G06DA03		002H06DA03		002G09DA03	
	SAMPLE DATE ----->	04/21/97		04/21/97		04/16/97		04/21/97		04/21/97		04/16/97	
	DATE ANALYZED --->	04/29/97		04/30/97		04/29/97		04/30/97		04/30/97		04/30/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL
9999900-02-5	Gasoline Range Organics	0.036	U	0.036	U	0.051		0.036	U	0.036	U	0.036	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

TPH-GRO							
	SAMPLE ID ------->	002-G-09UA-03		002-G-11DA-03			
	ORIGINAL ID ----->	002G09UA03		002G11DA03			
	LAB SAMPLE ID --->	S772130*2		S772189*1			
	ID FROM REPORT -->	002G09UA03		002G11DA03			
	SAMPLE DATE ----->	04/16/97		04/18/97			
	DATE ANALYZED --->	04/30/97		04/29/97			
	MATRIX ---------->	Water		Water			
	UNITS ---------->	MG/L		MG/L			
CAS #	Parameter	MEM08	VAL	MEM08	VAL		
9999900-02-5	Gasoline Range Organics	0.036	U	0.036	U		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

TSS									
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-06DA-03		002-H-06DA-03			
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G06DA03		002H06DA03			
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772215*2		S772215*4			
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G06DA03		002H06DA03			
	SAMPLE DATE ----->	04/21/97		04/21/97		04/21/97		04/21/97			
	DATE EXTRACTED -->	04/22/97		04/22/97		04/22/97		04/22/97			
	DATE ANALYZED --->	04/23/97		04/23/97		04/23/97		04/23/97			
	MATRIX ---------->	Water		Water		Water		Water			
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L			
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL		
9999900-03-7	Total Suspended Solids (TSS)	250.	J	66.	J	66.		75.			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM08
Primary Sample Results After Validation

TURBIDITY											
	SAMPLE ID ------->	002-G-02DA-03		002-H-02DA-03		002-G-06DA-03		002-H-06DA-03			
	ORIGINAL ID ----->	002G02DA03		002H02DA03		002G06DA03		002H06DA03			
	LAB SAMPLE ID --->	S772215*1		S772215*3		S772215*2		S772215*4			
	ID FROM REPORT -->	002G02DA03		002H02DA03		002G06DA03		002H06DA03			
	SAMPLE DATE ----->	04/21/97		04/21/97		04/21/97		04/21/97			
	DATE ANALYZED --->	04/22/97		04/22/97		04/22/97		04/22/97			
	MATRIX ---------->	Water		Water		Water		Water			
	UNITS ---------->	NTU		NTU		NTU		NTU			
CAS #	Parameter	MEM08	VAL	MEM08	VAL	MEM08	VAL	MEM08	VAL		
9999900-04-4	Turbidity	190.	J	130.	J	290.		310.			

*** Validation Complete ***

Validated Data Summary Tables

SDG MEM14

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

ALKALINITY													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE ANALYZED --->	04/24/97		04/24/97		04/28/97		04/24/97		04/28/97		04/28/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
471-34-1	Alkalinity (as CaCO3)	380.		370.		270.		710.		520.		310.	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

ALKALINITY							
	SAMPLE ID ------->	002-G-13UA-03	002-G-14UA-03				
	ORIGINAL ID ----->	002G13UA03	002G14UA03				
	LAB SAMPLE ID --->	S772284*4	S772284*5				
	ID FROM REPORT -->	002G13UA03	002G14UA03				
	SAMPLE DATE ----->	04/23/97	04/23/97				
	DATE ANALYZED --->	04/28/97	04/28/97				
	MATRIX ---------->	Water	Water				
	UNITS ---------->	MG/L	MG/L				
CAS #	Parameter	MEM14 VAL	MEM14 VAL				
471-34-1	Alkalinity (as CaCO3)	470.	350.				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

APX9-METAL													
	SAMPLE ID ------->	002-G-01DA-03		002-G-01UA-03		002-G-02UA-03		002-H-02UA-03		002-G-03UA-03		002-G-04UA-03	
	ORIGINAL ID ----->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	LAB SAMPLE ID --->	S772328*2		S772328*3		S772249*1		S772249*3		S772297*1		S772284*1	
	ID FROM REPORT -->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	SAMPLE DATE ----->	04/25/97		04/25/97		04/22/97		04/22/97		04/24/97		04/23/97	
	DATE EXTRACTED -->	04/30/97		04/30/97		04/29/97		04/29/97		04/30/97		04/30/97	
	DATE ANALYZED --->	05/01/97		05/01/97		04/30/97		04/30/97		05/01/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
7440-36-0	Antimony	17.7	U	17.7	U	17.7	U	17.7	U	17.7	U	17.7	U
7440-38-2	Arsenic	2.9	J	3.1	J	3.7	J	1.5	U	7.7	J	3.3	J
7440-39-3	Barium	306.		273.		463.		458.		404.		91.7	
7440-41-7	Beryllium	1.5	U	1.8	U	0.12	U	0.12	U	0.79	U	0.59	U
7440-43-9	Cadmium	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
7440-47-3	Chromium	2.	U	37.9		2.	U	2.	U	76.9		4.3	U
7440-48-4	Cobalt	5.4	J	47.		9.7	J	9.7	J	11.1		6.5	J
7440-50-8	Copper	2.1	U	5.	U	2.1	U	3.9	U	12.6	U	6.7	U
7439-92-1	Lead	1.5	J	1.1	U	1.1	U	1.1	U	7.7		1.1	U
7439-97-6	Mercury	0.05	U	0.05	J	0.05	U	0.06	J	0.06	J	0.05	U
7440-02-0	Nickel	8.8	U	31.2	J	8.8	U	8.8	U	61.2		8.8	U
7782-49-2	Selenium	1.7	UJ	3.5	J	1.7	UJ	1.7	UJ	3.4	UJ	2.8	J
7440-22-4	Silver	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ
7440-28-0	Thallium	0.97	U	1.1	J	1.6	J	0.97	U	0.97	U	0.97	U
7440-62-2	Vanadium	1.7	U	3.7	U	1.7	U	1.7	U	17.1	U	5.2	U
7440-66-6	Zinc	3.1	U	5.7	U	2.	U	1.2	U	33.7		10.2	U
7440-31-5	Tin	12.	U	12.	U	12.	U	12.	U	12.	U	12.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

APX9-METAL													
	SAMPLE ID ------->	002-G-05DA-03		002-G-05UA-03		002-G-08DA-03		002-G-08UA-03		002-G-10DA-03		002-G-10UA-03	
	ORIGINAL ID ----->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	LAB SAMPLE ID --->	S772297*2		S772328*4		S772328*5		S772249*2		S772328*6		S772284*2	
	ID FROM REPORT -->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	SAMPLE DATE ----->	04/24/97		04/25/97		04/25/97		04/22/97		04/25/97		04/22/97	
	DATE EXTRACTED -->	04/30/97		04/30/97		04/30/97		04/29/97		04/30/97		04/30/97	
	DATE ANALYZED --->	05/01/97		05/01/97		05/01/97		04/30/97		05/01/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
7440-36-0	Antimony	17.7	U	17.7	U	17.7	U	17.7	U	17.7	U	17.7	U
7440-38-2	Arsenic	2.	J	7.5	J	1.5	U	4.7	J	13.4		3.8	J
7440-39-3	Barium	470.		412.		202.		164.		306.		204.	
7440-41-7	Beryllium	0.72	U	1.9	U	1.8	U	0.12	U	2.	U	0.12	U
7440-43-9	Cadmium	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
7440-47-3	Chromium	7.4	U	22.		185.		2.	U	16.8	U	10.5	U
7440-48-4	Cobalt	2.4	U	5.7	J	13.8		2.4	U	3.6	J	6.6	J
7440-50-8	Copper	4.	U	8.3	U	5.3	U	11.6	U	6.	U	15.6	U
7439-92-1	Lead	1.1	U	2.9	J	1.1	U	1.1	U	6.1		3.4	J
7439-97-6	Mercury	0.07	J	0.05	U	0.05	U	0.05	U	0.06	J	0.06	J
7440-02-0	Nickel	11.5	J	20.7	J	125.		8.8	U	8.8	U	8.8	U
7782-49-2	Selenium	1.7	UJ	2.6	J	1.7	UJ	2.	J	1.7	UJ	4.9	J
7440-22-4	Silver	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ
7440-28-0	Thallium	1.1	J	0.97	U	0.97	U	0.97	UJ	0.97	U	0.97	U
7440-62-2	Vanadium	3.3	U	11.	U	4.2	U	3.1	U	13.1	U	10.	U
7440-66-6	Zinc	9.1	U	25.1		9.2	U	14.3	U	24.5		13.8	U
7440-31-5	Tin	12.	U	12.	U	12.	U	12.	U	12.	U	12.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

APX9-METAL													
	SAMPLE ID ------->	002-G-11UA-03		002-G-13DA-03		002-G-13MA-03		002-G-13UA-03		002-G-14DA-03		002-G-14UA-03	
	ORIGINAL ID ----->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	LAB SAMPLE ID --->	S772284*3		S772297*3		S772297*4		S772284*4		S772328*7		S772284*5	
	ID FROM REPORT -->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	SAMPLE DATE ----->	04/23/97		04/24/97		04/23/97		04/23/97		04/25/97		04/23/97	
	DATE EXTRACTED -->	04/30/97		04/30/97		04/30/97		04/30/97		04/30/97		04/30/97	
	DATE ANALYZED --->	05/01/97		05/01/97		05/01/97		05/01/97		05/01/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
7440-36-0	Antimony	17.7	U	17.7	U	17.7	U	17.7	U	17.7	U	17.7	J
7440-38-2	Arsenic	3.	J	4.5	J	9.8	J	3.2	J	1.5	U	3.7	J
7440-39-3	Barium	121.		221.		229.		363.		73.3		161.	
7440-41-7	Beryllium	0.12	U	1.6	U	1.3	U	0.12	U	1.3	U	0.48	U
7440-43-9	Cadmium	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
7440-47-3	Chromium	3.9	U	6.8	U	196.		2.6	U	3.7	U	28.4	
7440-48-4	Cobalt	2.4	U	9.8	J	21.6		11.1		3.	J	24.5	
7440-50-8	Copper	8.3	U	4.	U	16.3	U	5.	U	2.1	U	4.3	U
7439-92-1	Lead	2.1	J	1.4	J	16.2		1.1	U	1.1	U	1.1	U
7439-97-6	Mercury	0.05	U	0.06	J	0.05	U	0.05	J	0.05	U	0.05	J
7440-02-0	Nickel	8.8	U	8.8	U	125.		8.8	U	8.8	U	19.7	J
7782-49-2	Selenium	1.7	UJ	1.7	UJ	3.4	UJ	1.7	UJ	1.7	UJ	1.7	UJ
7440-22-4	Silver	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ	1.5	UJ
7440-28-0	Thallium	0.97	U	0.97	U	0.97	U	0.97	U	0.97	U	0.97	U
7440-62-2	Vanadium	4.4	U	6.9	U	46.		2.3	U	1.7	U	2.4	U
7440-66-6	Zinc	10.	U	15.8	J	48.		7.4	U	2.1	U	9.8	U
7440-31-5	Tin	12.	U	12.	U	12.	U	12.	U	12.	U	12.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

BOD5													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	04/23/97		04/23/97		04/24/97		04/23/97		04/24/97		04/24/97	
	DATE ANALYZED --->	04/23/97		04/23/97		04/24/97		04/23/97		04/24/97		04/24/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-03-8	Biochemical Oxygen Demand (5-day)	2.	U	2.	U	2.	U	2.	U	3.4		2.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

BOD5	SAMPLE ID ------->	002-G-13UA-03		002-G-14UA-03					
	ORIGINAL ID ----->	002G13UA03		002G14UA03					
	LAB SAMPLE ID --->	S772284*4		S772284*5					
	ID FROM REPORT -->	002G13UA03		002G14UA03					
	SAMPLE DATE ----->	04/23/97		04/23/97					
	DATE EXTRACTED -->	04/24/97		04/24/97					
	DATE ANALYZED --->	04/24/97		04/24/97					
	MATRIX ---------->	Water		Water					
	UNITS ---------->	MG/L		MG/L					
CAS #	Parameter	MEM14	VAL	MEM14	VAL				
9999900-03-8	Biochemical Oxygen Demand (5-day)	2.	U	2.	U				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

CHLORIDE-I													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	05/16/97		05/16/97		05/16/97		05/14/97		05/16/97		05/16/97	
	DATE ANALYZED --->	05/16/97		05/16/97		05/16/97		05/14/97		05/16/97		05/16/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
16887-00-6	Chloride	71.		67.		26.		10.		5.6		5.7	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

CHLORIDE-I							
	SAMPLE ID ------->	002-G-13UA-03		002-G-14UA-03			
	ORIGINAL ID ----->	002G13UA03		002G14UA03			
	LAB SAMPLE ID --->	S772284*4		S772284*5			
	ID FROM REPORT -->	002G13UA03		002G14UA03			
	SAMPLE DATE ----->	04/23/97		04/23/97			
	DATE EXTRACTED -->	05/16/97		05/16/97			
	DATE ANALYZED --->	05/16/97		05/16/97			
	MATRIX ---------->	Water		Water			
	UNITS ---------->	MG/L		MG/L			
CAS #	Parameter	MEM14	VAL	MEM14	VAL		
16887-00-6	Chloride	120.		5.5			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

COD													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	05/16/97		05/16/97		05/15/97		05/16/97		05/15/97		05/15/97	
	DATE ANALYZED --->	05/16/97		05/16/97		05/16/97		05/16/97		05/16/97		05/16/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-04-0	Chemical Oxygen Demand	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

COD							
	SAMPLE ID ------->	002-G-13UA-03		002-G-14UA-03			
	ORIGINAL ID ----->	002G13UA03		002G14UA03			
	LAB SAMPLE ID --->	S772284*4		S772284*5			
	ID FROM REPORT -->	002G13UA03		002G14UA03			
	SAMPLE DATE ----->	04/23/97		04/23/97			
	DATE EXTRACTED -->	05/15/97		05/15/97			
	DATE ANALYZED --->	05/16/97		05/16/97			
	MATRIX ---------->	Water		Water			
	UNITS ---------->	MG/L		MG/L			
CAS #	Parameter	MEM14	VAL	MEM14	VAL		
9999900-04-0	Chemical Oxygen Demand	20.	U	20.	U		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

FE & MN													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	04/29/97		04/29/97		04/30/97		04/29/97		04/30/97		04/30/97	
	DATE ANALYZED --->	04/30/97		04/30/97		05/01/97		04/30/97		05/01/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
7439-89-6	Iron	1140.		940.		2680.		268.		5980.		2040.	
7439-96-5	Manganese	1290.		1290.		1340.		102.		1110.		102.	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

FE & MN							
	SAMPLE ID ------->	002-G-13UA-03		002-G-14UA-03			
	ORIGINAL ID ----->	002G13UA03		002G14UA03			
	LAB SAMPLE ID --->	S772284*4		S772284*5			
	ID FROM REPORT -->	002G13UA03		002G14UA03			
	SAMPLE DATE ----->	04/23/97		04/23/97			
	DATE EXTRACTED -->	04/30/97		04/30/97			
	DATE ANALYZED --->	05/01/97		05/01/97			
	MATRIX ---------->	Water		Water			
	UNITS ---------->	UG/L		UG/L			
CAS #	Parameter	MEM14	VAL	MEM14	VAL		
7439-89-6	Iron	1040.		3620.			
7439-96-5	Manganese	1270.		1100.			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

HARDNESS													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	05/13/97		05/13/97		05/13/97		05/13/97		05/13/97		05/13/97	
	DATE ANALYZED --->	05/13/97		05/13/97		05/13/97		05/13/97		05/13/97		05/13/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-03-3	Hardness as CaCO3	290.		280.		330.		250.		400.		260.	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

HARDNESS							
	SAMPLE ID ------->	002-G-13UA-03	002-G-14UA-03				
	ORIGINAL ID ----->	002G13UA03	002G14UA03				
	LAB SAMPLE ID --->	S772284*4	S772284*5				
	ID FROM REPORT -->	002G13UA03	002G14UA03				
	SAMPLE DATE ----->	04/23/97	04/23/97				
	DATE EXTRACTED -->	05/13/97	05/13/97				
	DATE ANALYZED --->	05/13/97	05/13/97				
	MATRIX ---------->	Water	Water				
	UNITS ---------->	MG/L	MG/L				
CAS #	Parameter	MEM14 VAL	MEM14 VAL				
9999900-03-3	Hardness as CaCO3	370.	250.				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

HPC													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	04/23/97		04/23/97		04/24/97		04/23/97		04/24/97		04/24/97	
	DATE ANALYZED --->	04/23/97		04/23/97		04/24/97		04/23/97		04/24/97		04/24/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	CFU/M		CFU/M		CFU/M		CFU/M		CFU/M		CFU/M	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-03-6	Standard Plate Count	110.	J	1500.	J	7500.		140.		510.		370.	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

HPC							
	SAMPLE ID ------->	002-G-13UA-03		002-G-14UA-03			
	ORIGINAL ID ----->	002G13UA03		002G14UA03			
	LAB SAMPLE ID --->	S772284*4		S772284*5			
	ID FROM REPORT -->	002G13UA03		002G14UA03			
	SAMPLE DATE ----->	04/23/97		04/23/97			
	DATE EXTRACTED -->	04/24/97		04/24/97			
	DATE ANALYZED --->	04/24/97		04/24/97			
	MATRIX ---------->	Water		Water			
	UNITS ---------->	CFU/M		CFU/M			
CAS #	Parameter	MEM14	VAL	MEM14	VAL		
9999900-03-6	Standard Plate Count	340.		530.			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

KJELDAHL													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	05/16/97		05/16/97		05/16/97		05/16/97		05/16/97		05/16/97	
	DATE ANALYZED --->	05/22/97		05/22/97		05/22/97		05/22/97		05/22/97		05/22/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999000-72-6	Kjeldahl Nitrogen, Total	8.2	J	1.9	J	0.2	U	0.83		2.2		0.33	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

KJELDAHL							
	SAMPLE ID ------->	002-G-13UA-03	002-G-14UA-03				
	ORIGINAL ID ----->	002G13UA03	002G14UA03				
	LAB SAMPLE ID --->	S772284*4	S772284*5				
	ID FROM REPORT -->	002G13UA03	002G14UA03				
	SAMPLE DATE ----->	04/23/97	04/23/97				
	DATE EXTRACTED -->	05/16/97	05/16/97				
	DATE ANALYZED --->	05/22/97	05/22/97				
	MATRIX ---------->	Water	Water				
	UNITS ---------->	MG/L	MG/L				
CAS #	Parameter	MEM14 VAL	MEM14 VAL				
9999000-72-6	Kjeldahl Nitrogen, Total	0.43	0.37				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

METAL-CN													
	SAMPLE ID ------->	002-G-01DA-03		002-G-01UA-03		002-G-02UA-03		002-H-02UA-03		002-G-03UA-03		002-G-04UA-03	
	ORIGINAL ID ----->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	LAB SAMPLE ID --->	S772328*2		S772328*3		S772249*1		S772249*3		S772297*1		S772284*1	
	ID FROM REPORT -->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	SAMPLE DATE ----->	04/25/97		04/25/97		04/22/97		04/22/97		04/24/97		04/23/97	
	DATE EXTRACTED -->	05/07/97		05/07/97		04/30/97		04/30/97		05/05/97		05/05/97	
	DATE ANALYZED --->	05/07/97		05/07/97		04/30/97		04/30/97		05/05/97		05/05/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

METAL-CN													
	SAMPLE ID ------->	002-G-05DA-03		002-G-05UA-03		002-G-08DA-03		002-G-08UA-03		002-G-10DA-03		002-G-10UA-03	
	ORIGINAL ID ----->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	LAB SAMPLE ID --->	S772297*2		S772328*4		S772328*5		S772249*2		S772328*6		S772284*2	
	ID FROM REPORT -->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	SAMPLE DATE ----->	04/24/97		04/25/97		04/25/97		04/22/97		04/25/97		04/22/97	
	DATE EXTRACTED -->	05/12/97		05/07/97		05/07/97		04/30/97		05/07/97		05/05/97	
	DATE ANALYZED --->	05/12/97		05/07/97		05/07/97		04/30/97		05/07/97		05/05/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

METAL-CN													
	SAMPLE ID ------->	002-G-11UA-03		002-G-13DA-03		002-G-13MA-03		002-G-13UA-03		002-G-14DA-03		002-G-14UA-03	
	ORIGINAL ID ----->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	LAB SAMPLE ID --->	S772284*3		S772297*3		S772297*4		S772284*4		S772328*7		S772284*5	
	ID FROM REPORT -->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	SAMPLE DATE ----->	04/23/97		04/24/97		04/23/97		04/23/97		04/25/97		04/23/97	
	DATE EXTRACTED -->	05/05/97		05/05/97		05/05/97		05/05/97		05/07/97		05/05/97	
	DATE ANALYZED --->	05/05/97		05/05/97		05/05/97		05/05/97		05/07/97		05/05/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
57-12-5	Cyanide (CN)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

METHANE													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	05/05/97		05/05/97		05/05/97		05/05/97		05/05/97		05/05/97	
	DATE ANALYZED --->	05/05/97		05/05/97		05/05/97		05/05/97		05/05/97		05/05/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
74-82-8	METHANE	47.	U	47.	U	47.	U	47.	U	47.	U	47.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

METHANE								
	SAMPLE ID ------->	002-G-13UA-03		002-G-14UA-03				
	ORIGINAL ID ----->	002G13UA03		002G14UA03				
	LAB SAMPLE ID --->	S772284*4		S772284*5				
	ID FROM REPORT -->	002G13UA03		002G14UA03				
	SAMPLE DATE ----->	04/23/97		04/23/97				
	DATE EXTRACTED -->	05/05/97		05/05/97				
	DATE ANALYZED --->	05/05/97		05/06/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM14	VAL	MEM14	VAL			
74-82-8	METHANE	330.		47.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

NITRATE													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	05/09/97		05/09/97		05/09/97		05/09/97		05/09/97		05/09/97	
	DATE ANALYZED --->	04/23/97		04/23/97		04/25/97		04/23/97		04/25/97		04/25/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
14797-55-8	Nitrate (as N)	1.2		1.4		0.05	U	0.06		1.1		0.05	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

NITRATE							
	SAMPLE ID ------->	002-G-13UA-03		002-G-14UA-03			
	ORIGINAL ID ----->	002G13UA03		002G14UA03			
	LAB SAMPLE ID --->	S772284*4		S772284*5			
	ID FROM REPORT -->	002G13UA03		002G14UA03			
	SAMPLE DATE ----->	04/23/97		04/23/97			
	DATE EXTRACTED -->	05/09/97		05/09/97			
	DATE ANALYZED --->	04/25/97		04/25/97			
	MATRIX ---------->	Water		Water			
	UNITS ---------->	MG/L		MG/L			
CAS #	Parameter	MEM14	VAL	MEM14	VAL		
14797-55-8	Nitrate (as N)	0.096		0.12			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SULFATE-IC													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	05/14/97		05/14/97		05/16/97		05/16/97		05/16/97		05/16/97	
	DATE ANALYZED --->	05/14/97		05/14/97		05/16/97		05/16/97		05/16/97		05/16/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
14808-79-8	Sulfate	16.		14.		150.		55.		29.		27.	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SULFATE-IC							
	SAMPLE ID ------->	002-G-13UA-03	002-G-14UA-03				
	ORIGINAL ID ----->	002G13UA03	002G14UA03				
	LAB SAMPLE ID --->	S772284*4	S772284*5				
	ID FROM REPORT -->	002G13UA03	002G14UA03				
	SAMPLE DATE ----->	04/23/97	04/23/97				
	DATE EXTRACTED -->	05/16/97	05/16/97				
	DATE ANALYZED --->	05/16/97	05/16/97				
	MATRIX ---------->	Water	Water				
	UNITS ---------->	MG/L	MG/L				
CAS #	Parameter	MEM14 VAL	MEM14 VAL				
14808-79-8	Sulfate	90.	11.				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-HERB															
	SAMPLE ID ------->	002-G-01DA-03		002-G-01UA-03		002-G-02UA-03		002-H-02UA-03		002-G-03UA-03 RE		002-G-04UA-03	
	ORIGINAL ID ----->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	LAB SAMPLE ID --->	S772328*2		S772328*3		S772249*1		S772249*3		S772297*1*RE		S772284*1	
	ID FROM REPORT -->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	SAMPLE DATE ----->	04/25/97		04/25/97		04/22/97		04/22/97		04/24/97		04/23/97	
	DATE EXTRACTED -->	04/30/97		04/30/97		04/29/97		04/29/97		05/05/97		04/29/97	
	DATE ANALYZED --->	05/03/97		05/02/97		05/01/97		05/01/97		05/06/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
75-99-0	Dalapon	120.	U	120.	U	120.	U	120.	U	120.	U	120.	U
93-65-2	MCPP	120.	U	120.	U	120.	U	120.	U	120.	U	120.	U
1918-00-9	Dicamba	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	0.31	J
94-74-6	MCPA	120.	U	120.	U	120.	U	120.	U	120.	U	120.	U
120-36-5	Dichlorprop	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
94-75-7	2,4-D	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
93-72-1	2,4,5-TP (Silvex)	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
93-76-5	2,4,5-T	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
88-85-7	Dinoseb	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
94-82-6	2,4-DB	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
93-65-2	MCPP	NR		NR		NR		NR		NR		NR	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-HERB													
	SAMPLE ID ------->	002-G-05DA-03		002-G-05UA-03		002-G-08DA-03		002-G-08UA-03		002-G-10DA-03		002-G-10UA-03	
	ORIGINAL ID ----->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	LAB SAMPLE ID --->	S772297*2		S772328*4		S772328*5		S772249*2		S772328*6		S772284*2	
	ID FROM REPORT -->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	SAMPLE DATE ----->	04/24/97		04/25/97		04/25/97		04/22/97		04/25/97		04/22/97	
	DATE EXTRACTED -->	04/29/97		04/30/97		04/30/97		04/29/97		04/30/97		04/29/97	
	DATE ANALYZED --->	05/01/97		05/02/97		05/02/97		05/01/97		05/02/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
75-99-0	Dalapon	120.	U	120.	U	120.	U	120.	U	120.	U	120.	U
93-65-2	MCPP	120.	U	120.	U	120.	U	120.	U	120.	U	120.	U
1918-00-9	Dicamba	1.2	U	1.2	U	1.2	U	1.2	U	0.12	J	1.2	U
94-74-6	MCPA	120.	U	120.	U	120.	U	120.	U	120.	U	120.	U
120-36-5	Dichlorprop	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
94-75-7	2,4-D	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
93-72-1	2,4,5-TP (Silvex)	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
93-76-5	2,4,5-T	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
88-85-7	Dinoseb	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
94-82-6	2,4-DB	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
93-65-2	MCPP	NR		NR		NR		NR		NR		NR	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-HERB													
	SAMPLE ID ------->	002-G-11UA-03		002-G-13DA-03		002-G-13MA-03		002-G-13UA-03		002-G-14DA-03		002-G-14UA-03	
	ORIGINAL ID ----->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	LAB SAMPLE ID --->	S772284*3		S772297*3		S772297*4		S772284*4		S772328*7		S772284*5	
	ID FROM REPORT -->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	SAMPLE DATE ----->	04/23/97		04/24/97		04/23/97		04/23/97		04/25/97		04/23/97	
	DATE EXTRACTED -->	04/29/97		04/29/97		04/29/97		04/29/97		04/30/97		04/29/97	
	DATE ANALYZED --->	05/01/97		05/01/97		05/01/97		05/01/97		05/02/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
75-99-0	Dalapon	120.	U	120.	U	120.	U	120.	U	120.	U	120.	U
93-65-2	MCPP	120.	U	120.	U	120.	U	120.	U	120.	U	120.	U
1918-00-9	Dicamba	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
94-74-6	MCPA	120.	U	120.	U	120.	U	120.	U	120.	U	120.	U
120-36-5	Dichlorprop	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
94-75-7	2,4-D	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
93-72-1	2,4,5-TP (Silvex)	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
93-76-5	2,4,5-T	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
88-85-7	Dinoseb	6.	U	6.	U	6.	U	6.	U	6.	U	6.	U
94-82-6	2,4-DB	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
93-65-2	MCPP	NR		NR		NR		NR		NR		NR	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-OP P													
	SAMPLE ID ------->	002-G-01DA-03		002-G-01UA-03		002-G-02UA-03		002-H-02UA-03		002-G-03UA-03		002-G-04UA-03	
	ORIGINAL ID ----->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	LAB SAMPLE ID --->	S772328*2		S772328*3		S772249*1		S772249*3		S772297*1		S772284*1	
	ID FROM REPORT -->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	SAMPLE DATE ----->	04/25/97		04/25/97		04/22/97		04/22/97		04/24/97		04/23/97	
	DATE EXTRACTED -->	05/01/97		05/01/97		04/29/97		04/29/97		04/29/97		04/29/97	
	DATE ANALYZED --->	05/08/97		05/06/97		05/03/97		05/03/97		05/06/97		05/03/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
86-50-0	Azinphos methyl	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
35400-43-2	Sulprofos (Bolstar)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
2921-88-2	Chloropyrifos	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
56-72-4	Coumaphos	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
8065-48-3	Demeton,O	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
126-75-0	Demeton,S	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
333-41-5	Diazinon	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
62-73-7	Dichlorvos	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
298-04-4	Disulfoton	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
13194-48-4	Ethoprop	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
115-90-2	Fensulfothion	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
55-38-9	Fenthion	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
26718-65-0	Mevinphos	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
300-76-5	Naled	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
298-00-0	Methyl parathion	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
298-02-2	Phorate	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
299-84-3	Ronnel	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
22248-79-9	Stirophos (Tetrachlorovinphos)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
327-98-0	Trichloronate	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
150-50-5	Merphos	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
34643-46-4	Tokuthion	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-OP P						
SAMPLE ID ------->	002-G-05DA-03	002-G-05UA-03	002-G-08DA-03	002-G-08UA-03	002-G-10DA-03	002-G-10UA-03
ORIGINAL ID ----->	002G05DA03	002G05UA03	002G08DA03	002G08UA03	002G10DA03	002G10UA03
LAB SAMPLE ID --->	S772297*2	S772328*4	S772328*5	S772249*2	S772328*6	S772284*2
ID FROM REPORT -->	002G05DA03	002G05UA03	002G08DA03	002G08UA03	002G10DA03	002G10UA03
SAMPLE DATE ----->	04/24/97	04/25/97	04/25/97	04/22/97	04/25/97	04/22/97
DATE EXTRACTED -->	04/29/97	05/01/97	05/01/97	04/29/97	05/01/97	04/29/97
DATE ANALYZED --->	05/06/97	05/06/97	05/07/97	05/03/97	05/07/97	05/03/97
MATRIX ---------->	Water	Water	Water	Water	Water	Water
UNITS ---------->	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L

CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
86-50-0	Azinphos methyl	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
35400-43-2	Sulprofos (Bolstar)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
2921-88-2	Chloropyrifos	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
56-72-4	Coumaphos	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
8065-48-3	Demeton,O	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
126-75-0	Demeton,S	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
333-41-5	Diazinon	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
62-73-7	Dichlorvos	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
298-04-4	Disulfoton	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
13194-48-4	Ethoprop	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
115-90-2	Fensulfothion	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
55-38-9	Fenthion	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
26718-65-0	Mevinphos	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
300-76-5	Naled	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
298-00-0	Methyl parathion	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
298-02-2	Phorate	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
299-84-3	Ronnel	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
22248-79-9	Stirophos (Tetrachlorovinphos)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
327-98-0	Trichloronate	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
150-50-5	Merphos	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
34643-46-4	Tokuthion	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-OP P						
SAMPLE ID ------->	002-G-11UA-03	002-G-13DA-03	002-G-13MA-03	002-G-13UA-03	002-G-14DA-03	002-G-14UA-03
ORIGINAL ID ----->	002G11UA03	002G13DA03	002G13MA03	002G13UA03	002G14DA03	002G14UA03
LAB SAMPLE ID --->	S772284*3	S772297*3	S772297*4	S772284*4	S772328*7	S772284*5
ID FROM REPORT -->	002G11UA03	002G13DA03	002G13MA03	002G13UA03	002G14DA03	002G14UA03
SAMPLE DATE ----->	04/23/97	04/24/97	04/23/97	04/23/97	04/25/97	04/23/97
DATE EXTRACTED -->	04/29/97	04/29/97	04/29/97	04/29/97	05/01/97	04/29/97
DATE ANALYZED --->	05/03/97	05/06/97	05/06/97	05/03/97	05/07/97	05/06/97
MATRIX ---------->	Water	Water	Water	Water	Water	Water
UNITS ---------->	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L

CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
86-50-0	Azinphos methyl	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
35400-43-2	Sulprofos (Bolstar)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
2921-88-2	Chloropyrifos	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
56-72-4	Coumaphos	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
8065-48-3	Demeton,O	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
126-75-0	Demeton,S	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
333-41-5	Diazinon	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
62-73-7	Dichlorvos	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
298-04-4	Disulfoton	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
13194-48-4	Ethoprop	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
115-90-2	Fensulfothion	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
55-38-9	Fenthion	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
26718-65-0	Mevinphos	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
300-76-5	Naled	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
298-00-0	Methyl parathion	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
298-02-2	Phorate	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
299-84-3	Ronnel	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
22248-79-9	Stirophos (Tetrachlorovinphos)	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
327-98-0	Trichloronate	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
150-50-5	Merphos	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
34643-46-4	Tokuthion	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-PEST													
	SAMPLE ID ------->	002-G-01DA-03		002-G-01UA-03		002-G-02UA-03		002-H-02UA-03		002-G-03UA-03		002-G-04UA-03	
	ORIGINAL ID ----->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	LAB SAMPLE ID --->	S772328*2		S772328*3		S772249*1		S772249*3		S772297*1		S772284*1	
	ID FROM REPORT -->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	SAMPLE DATE ----->	04/25/97		04/25/97		04/22/97		04/22/97		04/24/97		04/23/97	
	DATE EXTRACTED -->	04/30/97		04/30/97		04/29/97		04/29/97		04/29/97		04/29/97	
	DATE ANALYZED --->	05/02/97		05/02/97		05/01/97		05/01/97		05/01/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
319-84-6	alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-85-7	beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-86-8	delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
76-44-8	Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
309-00-2	Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
959-98-8	Endosulfan I	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
60-57-1	Dieldrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-55-9	4,4'-DDE	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-20-8	Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
33213-65-9	Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-54-8	4,4'-DDD	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
50-29-3	4,4'-DDT	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-43-5	Methoxychlor	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
7421-93-4	Endrin aldehyde	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
8001-35-2	Toxaphene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
12674-11-2	Aroclor-1016	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11104-28-2	Aroclor-1221	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
11141-16-5	Aroclor-1232	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
53469-21-9	Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6	Aroclor-1248	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11097-69-1	Aroclor-1254	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11096-82-5	Aroclor-1260	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
57-74-9	Chlordane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-PEST													
	SAMPLE ID ------->	002-G-05DA-03		002-G-05UA-03		002-G-08DA-03		002-G-08UA-03		002-G-10DA-03		002-G-10UA-03	
	ORIGINAL ID ----->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	LAB SAMPLE ID --->	S772297*2		S772328*4		S772328*5		S772249*2		S772328*6		S772284*2	
	ID FROM REPORT -->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	SAMPLE DATE ----->	04/24/97		04/25/97		04/25/97		04/22/97		04/25/97		04/22/97	
	DATE EXTRACTED -->	04/29/97		04/30/97		04/30/97		04/29/97		04/30/97		04/29/97	
	DATE ANALYZED --->	05/01/97		05/02/97		05/02/97		05/01/97		05/02/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
319-84-6	alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-85-7	beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-86-8	delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
76-44-8	Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
309-00-2	Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
959-98-8	Endosulfan I	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
60-57-1	Dieldrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-55-9	4,4'-DDE	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-20-8	Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
33213-65-9	Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-54-8	4,4'-DDD	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
50-29-3	4,4'-DDT	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-43-5	Methoxychlor	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.023	U
7421-93-4	Endrin aldehyde	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
8001-35-2	Toxaphene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
12674-11-2	Aroclor-1016	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11104-28-2	Aroclor-1221	2.	U	2.	U	2.	U	2.	U	2.	U	2.	U
11141-16-5	Aroclor-1232	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
53469-21-9	Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6	Aroclor-1248	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11097-69-1	Aroclor-1254	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11096-82-5	Aroclor-1260	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
57-74-9	Chlordane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-PEST													
	SAMPLE ID ------->	002-G-11UA-03		002-G-13DA-03		002-G-13MA-03		002-G-13UA-03		002-G-14DA-03		002-G-14UA-03	
	ORIGINAL ID ----->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	LAB SAMPLE ID --->	S772284*3		S772297*3		S772297*4		S772284*4		S772328*7		S772284*5	
	ID FROM REPORT -->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	SAMPLE DATE ----->	04/23/97		04/24/97		04/23/97		04/23/97		04/25/97		04/23/97	
	DATE EXTRACTED -->	04/29/97		04/29/97		04/29/97		04/29/97		04/30/97		04/29/97	
	DATE ANALYZED --->	05/01/97		05/02/97		05/02/97		05/01/97		05/02/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
319-84-6	alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.064	U
319-85-7	beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.064	U
319-86-8	delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.064	U
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.064	U
76-44-8	Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.064	U
309-00-2	Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.064	U
1024-57-3	Heptachlor epoxide	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.064	U
959-98-8	Endosulfan I	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.064	U
60-57-1	Dieldrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.13	U
72-55-9	4,4'-DDE	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.13	U
72-20-8	Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.13	U
33213-65-9	Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.13	U
72-54-8	4,4'-DDD	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.13	U
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.13	U
50-29-3	4,4'-DDT	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.13	U
72-43-5	Methoxychlor	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.64	U
7421-93-4	Endrin aldehyde	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.13	U
8001-35-2	Toxaphene	5.	U	5.	U	5.	U	5.	U	5.	U	6.4	U
12674-11-2	Aroclor-1016	1.	U	1.	U	1.	U	1.	U	1.	U	1.3	U
11104-28-2	Aroclor-1221	2.	U	2.	U	2.	U	2.	U	2.	U	2.6	U
11141-16-5	Aroclor-1232	1.	U	1.	U	1.	U	1.	U	1.	U	1.3	U
53469-21-9	Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U	1.3	U
12672-29-6	Aroclor-1248	1.	U	1.	U	1.	U	1.	U	1.	U	1.3	U
11097-69-1	Aroclor-1254	1.	U	1.	U	1.	U	1.	U	1.	U	1.3	U
11096-82-5	Aroclor-1260	1.	U	1.	U	1.	U	1.	U	1.	U	1.3	U
57-74-9	Chlordane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.64	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-SVOA						
SAMPLE ID ------->	002-G-01DA-03	002-G-01UA-03	002-G-02UA-03	002-H-02UA-03	002-G-03UA-03	002-G-04UA-03
ORIGINAL ID ----->	002G01DA03	002G01UA03	002G02UA03	002H02UA03	002G03UA03	002G04UA03
LAB SAMPLE ID --->	S772328*2	S772328*3	S772249*1	S772249*3	S772297*1	S772284*1
ID FROM REPORT -->	002G01DA03	002G01UA03	002G02UA03	002H02UA03	002G03UA03	002G04UA03
SAMPLE DATE ----->	04/25/97	04/25/97	04/22/97	04/22/97	04/24/97	04/23/97
DATE EXTRACTED -->	04/30/97	04/30/97	04/29/97	04/29/97	04/29/97	04/29/97
DATE ANALYZED --->	05/04/97	05/04/97	05/01/97	05/01/97	05/02/97	05/01/97
MATRIX ---------->	Water	Water	Water	Water	Water	Water
UNITS ---------->	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L

CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
108-95-2	Phenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-57-8	2-Chlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-72-1	Hexachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
98-95-3	Nitrobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-59-1	Isophorone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-75-5	2-Nitrophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
105-67-9	2,4-Dimethylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-83-2	2,4-Dichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-20-3	Naphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-47-8	4-Chloroaniline	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
87-68-3	Hexachlorobutadiene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-57-6	2-Methylnaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-95-4	2,4,5-Trichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-58-7	2-Chloronaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-74-4	2-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
131-11-3	Dimethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
208-96-8	Acenaphthylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
99-09-2	3-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
83-32-9	Acenaphthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
51-28-5	2,4-Dinitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
100-02-7	4-Nitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
132-64-9	Dibenzofuran	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-SVOA													
	SAMPLE ID ------->	002-G-01DA-03		002-G-01UA-03		002-G-02UA-03		002-H-02UA-03		002-G-03UA-03		002-G-04UA-03	
	ORIGINAL ID ----->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	LAB SAMPLE ID --->	S772328*2		S772328*3		S772249*1		S772249*3		S772297*1		S772284*1	
	ID FROM REPORT -->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	SAMPLE DATE ----->	04/25/97		04/25/97		04/22/97		04/22/97		04/24/97		04/23/97	
	DATE EXTRACTED -->	04/30/97		04/30/97		04/29/97		04/29/97		04/29/97		04/29/97	
	DATE ANALYZED --->	05/04/97		05/04/97		05/01/97		05/01/97		05/02/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
121-14-2	2,4-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-66-2	Diethylphthalate	10.	U	3.6	J	10.	U	2.4	J	10.	U	10.	U
7005-72-3	4-Chlorophenylphenyl ether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-73-7	Fluorene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-01-6	4-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
86-30-6	N-Nitrosodiphenylamine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
118-74-1	Hexachlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
87-86-5	Pentachlorophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
85-01-8	Phenanthrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-12-7	Anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-74-8	Carbazole	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-74-2	Di-n-butylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
206-44-0	Fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
129-00-0	Pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
85-68-7	Butylbenzylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
56-55-3	Benzo(a)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
218-01-9	Chrysene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U	10.	U	0.75	J	10.	U	10.	U
117-84-0	Di-n-octylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
50-32-8	Benzo(a)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-SVOA						
SAMPLE ID ------->	002-G-05DA-03	002-G-05UA-03	002-G-08DA-03	002-G-08UA-03	002-G-10DA-03	002-G-10UA-03
ORIGINAL ID ----->	002G05DA03	002G05UA03	002G08DA03	002G08UA03	002G10DA03	002G10UA03
LAB SAMPLE ID --->	S772297*2	S772328*4	S772328*5	S772249*2	S772328*6	S772284*2
ID FROM REPORT -->	002G05DA03	002G05UA03	002G08DA03	002G08UA03	002G10DA03	002G10UA03
SAMPLE DATE ----->	04/24/97	04/25/97	04/25/97	04/22/97	04/25/97	04/22/97
DATE EXTRACTED -->	04/29/97	04/30/97	04/30/97	04/29/97	04/30/97	04/29/97
DATE ANALYZED --->	05/02/97	05/04/97	05/04/97	05/01/97	05/04/97	05/01/97
MATRIX ---------->	Water	Water	Water	Water	Water	Water
UNITS ---------->	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L

CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
108-95-2	Phenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-57-8	2-Chlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-72-1	Hexachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
98-95-3	Nitrobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-59-1	Isophorone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-75-5	2-Nitrophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
105-67-9	2,4-Dimethylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-83-2	2,4-Dichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-20-3	Naphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-47-8	4-Chloroaniline	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
87-68-3	Hexachlorobutadiene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-57-6	2-Methylnaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-95-4	2,4,5-Trichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-58-7	2-Chloronaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-74-4	2-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
131-11-3	Dimethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
208-96-8	Acenaphthylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
99-09-2	3-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
83-32-9	Acenaphthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
51-28-5	2,4-Dinitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
100-02-7	4-Nitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
132-64-9	Dibenzofuran	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-SVOA						
SAMPLE ID ------->	002-G-05DA-03	002-G-05UA-03	002-G-08DA-03	002-G-08UA-03	002-G-10DA-03	002-G-10UA-03
ORIGINAL ID ----->	002G05DA03	002G05UA03	002G08DA03	002G08UA03	002G10DA03	002G10UA03
LAB SAMPLE ID --->	S772297*2	S772328*4	S772328*5	S772249*2	S772328*6	S772284*2
ID FROM REPORT -->	002G05DA03	002G05UA03	002G08DA03	002G08UA03	002G10DA03	002G10UA03
SAMPLE DATE ----->	04/24/97	04/25/97	04/25/97	04/22/97	04/25/97	04/22/97
DATE EXTRACTED -->	04/29/97	04/30/97	04/30/97	04/29/97	04/30/97	04/29/97
DATE ANALYZED --->	05/02/97	05/04/97	05/04/97	05/01/97	05/04/97	05/01/97
MATRIX ---------->	Water	Water	Water	Water	Water	Water
UNITS ---------->	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L

CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
121-14-2	2,4-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-66-2	Diethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
7005-72-3	4-Chlorophenylphenyl ether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-73-7	Fluorene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-01-6	4-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
86-30-6	N-Nitrosodiphenylamine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
118-74-1	Hexachlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
87-86-5	Pentachlorophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
85-01-8	Phenanthrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-12-7	Anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-74-8	Carbazole	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-74-2	Di-n-butylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
206-44-0	Fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
129-00-0	Pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
85-68-7	Butylbenzylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
56-55-3	Benzo(a)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
218-01-9	Chrysene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
117-84-0	Di-n-octylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
50-32-8	Benzo(a)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-SVOA													
	SAMPLE ID ------>	002-G-11UA-03		002-G-13DA-03		002-G-13MA-03		002-G-13UA-03		002-G-14DA-03		002-G-14UA-03	
	ORIGINAL ID ----->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	LAB SAMPLE ID --->	S772284*3		S772297*3		S772297*4		S772284*4		S772328*7		S772284*5	
	ID FROM REPORT -->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	SAMPLE DATE ----->	04/23/97		04/24/97		04/23/97		04/23/97		04/25/97		04/23/97	
	DATE EXTRACTED -->	04/29/97		04/29/97		04/29/97		04/29/97		04/30/97		04/29/97	
	DATE ANALYZED --->	05/01/97		05/02/97		05/02/97		05/01/97		05/04/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
108-95-2	Phenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-57-8	2-Chlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-72-1	Hexachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
98-95-3	Nitrobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-59-1	Isophorone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-75-5	2-Nitrophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
105-67-9	2,4-Dimethylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-83-2	2,4-Dichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-20-3	Naphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-47-8	4-Chloroaniline	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
87-68-3	Hexachlorobutadiene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-57-6	2-Methylnaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-95-4	2,4,5-Trichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-58-7	2-Chloronaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-74-4	2-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
131-11-3	Dimethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
208-96-8	Acenaphthylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
99-09-2	3-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
83-32-9	Acenaphthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
51-28-5	2,4-Dinitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
100-02-7	4-Nitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
132-64-9	Dibenzofuran	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-SVOA													
	SAMPLE ID ------->	002-G-11UA-03		002-G-13DA-03		002-G-13MA-03		002-G-13UA-03		002-G-14DA-03		002-G-14UA-03	
	ORIGINAL ID ----->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	LAB SAMPLE ID --->	S772284*3		S772297*3		S772297*4		S772284*4		S772328*7		S772284*5	
	ID FROM REPORT -->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	SAMPLE DATE ----->	04/23/97		04/24/97		04/23/97		04/23/97		04/25/97		04/23/97	
	DATE EXTRACTED -->	04/29/97		04/29/97		04/29/97		04/29/97		04/30/97		04/29/97	
	DATE ANALYZED --->	05/01/97		05/02/97		05/02/97		05/01/97		05/04/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
121-14-2	2,4-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-66-2	Diethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
7005-72-3	4-Chlorophenylphenyl ether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-73-7	Fluorene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-01-6	4-Nitroaniline	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
86-30-6	N-Nitrosodiphenylamine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
118-74-1	Hexachlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
87-86-5	Pentachlorophenol	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
85-01-8	Phenanthrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-12-7	Anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-74-8	Carbazole	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-74-2	Di-n-butylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
206-44-0	Fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
129-00-0	Pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
85-68-7	Butylbenzylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U	20.	U	20.	U	20.	U	20.	U	20.	U
56-55-3	Benzo(a)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
218-01-9	Chrysene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
117-84-0	Di-n-octylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
50-32-8	Benzo(a)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-VOA													
	SAMPLE ID ------->	002-G-01DA-03		002-G-01UA-03		002-G-02UA-03		002-H-02UA-03		002-G-03UA-03		002-G-04UA-03	
	ORIGINAL ID ----->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	LAB SAMPLE ID --->	S772328*2		S772328*3		S772249*1		S772249*3		S772297*1		S772284*1	
	ID FROM REPORT -->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	SAMPLE DATE ----->	04/25/97		04/25/97		04/22/97		04/22/97		04/24/97		04/23/97	
	DATE ANALYZED --->	04/30/97		04/30/97		04/24/97		04/24/97		04/29/97		04/28/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-09-2	Methylene chloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-27-4	Bromodichloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-88-3	Toluene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
127-18-4	Tetrachloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-25-2	Bromoform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-64-1	Acetone	50.	UJ	160.	UJ	50.	U	50.	U	48.	J	50.	U
75-15-0	Carbon disulfide	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-93-3	2-Butanone (MEK)	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
591-78-6	2-Hexanone	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
1330-20-7	Xylene (Total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-VOA													
	SAMPLE ID ------->	002-G-05DA-03		002-G-05UA-03		002-G-08DA-03		002-G-08UA-03		002-G-10DA-03		002-G-10UA-03	
	ORIGINAL ID ----->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	LAB SAMPLE ID --->	S772297*2		S772328*4		S772328*5		S772249*2		S772328*6		S772284*2	
	ID FROM REPORT -->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	SAMPLE DATE ----->	04/24/97		04/25/97		04/25/97		04/22/97		04/25/97		04/22/97	
	DATE ANALYZED --->	04/29/97		04/30/97		04/30/97		04/24/97		04/30/97		04/28/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-09-2	Methylene chloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-27-4	Bromodichloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-88-3	Toluene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
127-18-4	Tetrachloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-25-2	Bromoform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-64-1	Acetone	50.	U	50.	UJ	50.	UJ	16.	J	50.	UJ	25.	J
75-15-0	Carbon disulfide	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-93-3	2-Butanone (MEK)	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
591-78-6	2-Hexanone	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
1330-20-7	Xylene (Total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

SW846-VOA													
	SAMPLE ID ------->	002-G-11UA-03		002-G-13DA-03		002-G-13MA-03		002-G-13UA-03		002-G-14DA-03		002-G-14UA-03	
	ORIGINAL ID ----->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	LAB SAMPLE ID --->	S772284*3		S772297*3		S772297*4		S772284*4		S772328*7		S772284*5	
	ID FROM REPORT -->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	SAMPLE DATE ----->	04/23/97		04/24/97		04/23/97		04/23/97		04/25/97		04/23/97	
	DATE ANALYZED --->	04/28/97		04/29/97		04/29/97		04/28/97		04/30/97		04/28/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-09-2	Methylene chloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-27-4	Bromodichloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-88-3	Toluene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
127-18-4	Tetrachloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-25-2	Bromoform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-64-1	Acetone	50.	U	50.	U	50.	U	50.	U	50.	UJ	50.	U
75-15-0	Carbon disulfide	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-93-3	2-Butanone (MEK)	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
591-78-6	2-Hexanone	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
1330-20-7	Xylene (Total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TDS							
	SAMPLE ID ------->	002-G-02UA-03	002-H-02UA-03	002-G-04UA-03	002-G-08UA-03	002-G-10UA-03	002-G-11UA-03
	ORIGINAL ID ----->	002G02UA03	002H02UA03	002G04UA03	002G08UA03	002G10UA03	002G11UA03
	LAB SAMPLE ID --->	S772249*1	S772249*3	S772284*1	S772249*2	S772284*2	S772284*3
	ID FROM REPORT -->	002G02UA03	002H02UA03	002G04UA03	002G08UA03	002G10UA03	002G11UA03
	SAMPLE DATE ----->	04/22/97	04/22/97	04/23/97	04/22/97	04/22/97	04/23/97
	DATE EXTRACTED -->	04/25/97	04/25/97	04/25/97	04/25/97	04/25/97	04/25/97
	DATE ANALYZED --->	04/27/97	04/27/97	04/27/97	04/27/97	04/27/97	04/27/97
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ---------->	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
CAS #	Parameter	MEM14 VAL	MEM14 VAL	MEM14 VAL	MEM14 VAL	MEM14 VAL	MEM14 VAL
9999900-07-2	Total Dissolved Solids (TDS)	550.	500.	580.	730.	580.	360.

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TDS							
	SAMPLE ID ------->	002-G-13UA-03		002-G-14UA-03			
	ORIGINAL ID ----->	002G13UA03		002G14UA03			
	LAB SAMPLE ID --->	S772284*4		S772284*5			
	ID FROM REPORT -->	002G13UA03		002G14UA03			
	SAMPLE DATE ----->	04/23/97		04/23/97			
	DATE EXTRACTED -->	04/25/97		04/25/97			
	DATE ANALYZED --->	04/27/97		04/27/97			
	MATRIX ---------->	Water		Water			
	UNITS ---------->	MG/L		MG/L			
CAS #	Parameter	MEM14	VAL	MEM14	VAL		
9999900-07-2	Total Dissolved Solids (TDS)	720.		410.			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TOC													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	05/09/97		05/09/97		05/09/97		05/09/97		05/09/97		05/09/97	
	DATE ANALYZED --->	05/09/97		05/09/97		05/09/97		05/09/97		05/09/97		05/09/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-01-4	Total Organic Carbon (TOC)	1.5		1.6		1.5		1.	U	1.	U	1.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TOC							
	SAMPLE ID ------->	002-G-13UA-03		002-G-14UA-03			
	ORIGINAL ID ----->	002G13UA03		002G14UA03			
	LAB SAMPLE ID --->	S772284*4		S772284*5			
	ID FROM REPORT -->	002G13UA03		002G14UA03			
	SAMPLE DATE ----->	04/23/97		04/23/97			
	DATE EXTRACTED -->	05/09/97		05/09/97			
	DATE ANALYZED --->	05/09/97		05/09/97			
	MATRIX ---------->	Water		Water			
	UNITS ---------->	MG/L		MG/L			
CAS #	Parameter	MEM14	VAL	MEM14	VAL		
9999900-01-4	Total Organic Carbon (TOC)	1.	U	1.	U		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TOTAL PHOS													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	05/16/97		05/16/97		05/16/97		05/16/97		05/16/97		05/16/97	
	DATE ANALYZED --->	05/20/97		05/20/97		05/20/97		05/20/97		05/20/97		05/20/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
22569-71-7	Total phosphorus	0.1	U	0.1	U	0.1	U	0.1	U	0.19		0.1	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TOTAL PHOS								
	SAMPLE ID ------->	002-G-13UA-03		002-G-14UA-03				
	ORIGINAL ID ----->	002G13UA03		002G14UA03				
	LAB SAMPLE ID --->	S772284*4		S772284*5				
	ID FROM REPORT -->	002G13UA03		002G14UA03				
	SAMPLE DATE ----->	04/23/97		04/23/97				
	DATE EXTRACTED -->	05/16/97		05/16/97				
	DATE ANALYZED --->	05/20/97		05/20/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	MG/L		MG/L				
CAS #	Parameter	MEM14	VAL	MEM14	VAL			
22569-71-7	Total phosphorus	0.1	U	0.1	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TPH													
	SAMPLE ID ------->	002-G-01DA-03		002-G-01UA-03		002-G-02UA-03		002-H-02UA-03		002-G-03UA-03		002-G-04UA-03	
	ORIGINAL ID ----->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	LAB SAMPLE ID --->	S772328*2		S772328*3		S772249*1		S772249*3		S772297*1		S772284*1	
	ID FROM REPORT -->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	SAMPLE DATE ----->	04/25/97		04/25/97		04/22/97		04/22/97		04/24/97		04/23/97	
	DATE EXTRACTED -->	05/01/97		05/01/97		04/30/97		04/30/97		04/30/97		04/30/97	
	DATE ANALYZED --->	05/02/97		05/02/97		05/02/97		05/02/97		05/02/97		05/02/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-02-4	Petroleum Hydrocarbons, TPH	1.	U	1.	U	1.	U	1.	U	1.4		1.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TPH													
	SAMPLE ID ------->	002-G-05DA-03		002-G-05UA-03		002-G-08DA-03		002-G-08UA-03		002-G-10DA-03		002-G-10UA-03	
	ORIGINAL ID ----->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	LAB SAMPLE ID --->	S772297*2		S772328*4		S772328*5		S772249*2		S772328*6		S772284*2	
	ID FROM REPORT -->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	SAMPLE DATE ----->	04/24/97		04/25/97		04/25/97		04/22/97		04/25/97		04/22/97	
	DATE EXTRACTED -->	04/30/97		05/01/97		05/01/97		04/30/97		05/01/97		04/30/97	
	DATE ANALYZED --->	05/02/97		05/02/97		05/02/97		05/02/97		05/02/97		05/02/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-02-4	Petroleum Hydrocarbons, TPH	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TPH													
	SAMPLE ID ------->	002-G-11UA-03		002-G-13DA-03		002-G-13MA-03		002-G-13UA-03		002-G-14DA-03		002-G-14UA-03	
	ORIGINAL ID ----->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	LAB SAMPLE ID --->	S772284*3		S772297*3		S772297*4		S772284*4		S772328*7		S772284*5	
	ID FROM REPORT -->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	SAMPLE DATE ----->	04/23/97		04/24/97		04/23/97		04/23/97		04/25/97		04/23/97	
	DATE EXTRACTED -->	04/30/97		04/30/97		04/30/97		04/30/97		05/01/97		04/30/97	
	DATE ANALYZED --->	05/02/97		05/02/97		05/02/97		05/02/97		05/02/97		05/02/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-02-4	Petroleum Hydrocarbons, TPH	1.	U	1.	U	1.	U	1.4		1.	U	1.4	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TPH-DRO													
	SAMPLE ID ------->	002-G-01DA-03		002-G-01UA-03		002-G-02UA-03		002-H-02UA-03		002-G-03UA-03		002-G-04UA-03	
	ORIGINAL ID ----->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	LAB SAMPLE ID --->	S772328*2		S772328*3		S772249*1		S772249*3		S772297*1		S772284*1	
	ID FROM REPORT -->	002G01DA03		002G01UA03		002G02UA03		002H02UA03		002G03UA03		002G04UA03	
	SAMPLE DATE ----->	04/25/97		04/25/97		04/22/97		04/22/97		04/24/97		04/23/97	
	DATE EXTRACTED -->	04/30/97		04/30/97		04/29/97		04/29/97		04/29/97		04/29/97	
	DATE ANALYZED --->	05/06/97		05/06/97		05/07/97		05/06/97		05/06/97		05/06/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-02-6	Diesel Range Organics	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TPH-DRO													
	SAMPLE ID ------->	002-G-05DA-03		002-G-05UA-03		002-G-08DA-03		002-G-08UA-03		002-G-10DA-03		002-G-10UA-03	
	ORIGINAL ID ----->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	LAB SAMPLE ID --->	S772297*2		S772328*4		S772328*5		S772249*2		S772328*6		S772284*2	
	ID FROM REPORT -->	002G05DA03		002G05UA03		002G08DA03		002G08UA03		002G10DA03		002G10UA03	
	SAMPLE DATE ----->	04/24/97		04/25/97		04/25/97		04/22/97		04/25/97		04/22/97	
	DATE EXTRACTED -->	04/29/97		04/30/97		04/30/97		04/29/97		04/30/97		04/29/97	
	DATE ANALYZED --->	05/06/97		05/07/97		05/06/97		05/06/97		05/06/97		05/06/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-02-6	Diesel Range Organics	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TPH-DRO													
	SAMPLE ID ------->	002-G-11UA-03		002-G-13DA-03		002-G-13MA-03		002-G-13UA-03		002-G-14DA-03		002-G-14UA-03	
	ORIGINAL ID ----->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	LAB SAMPLE ID --->	S772284*3		S772297*3		S772297*4		S772284*4		S772328*7		S772284*5	
	ID FROM REPORT -->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	SAMPLE DATE ----->	04/23/97		04/24/97		04/23/97		04/23/97		04/25/97		04/23/97	
	DATE EXTRACTED -->	04/29/97		04/29/97		04/29/97		04/29/97		04/30/97		04/29/97	
	DATE ANALYZED --->	05/06/97		05/06/97		05/07/97		05/06/97		05/06/97		05/06/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-02-6	Diesel Range Organics	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TPH-GRO							
	SAMPLE ID ------->	002-G-01DA-03	002-G-01UA-03	002-G-02UA-03	002-H-02UA-03	002-G-03UA-03	002-G-04UA-03
	ORIGINAL ID ----->	002G01DA03	002G01UA03	002G02UA03	002H02UA03	002G03UA03	002G04UA03
	LAB SAMPLE ID --->	S772328*2	S772328*3	S772249*1	S772249*3	S772297*1	S772284*1
	ID FROM REPORT -->	002G01DA03	002G01UA03	002G02UA03	002H02UA03	002G03UA03	002G04UA03
	SAMPLE DATE ----->	04/25/97	04/25/97	04/22/97	04/22/97	04/24/97	04/23/97
	DATE ANALYZED --->	05/01/97	05/01/97	04/30/97	04/30/97	05/01/97	05/01/97
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ---------->	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
CAS #	Parameter	MEM14 VAL	MEM14 VAL	MEM14 VAL	MEM14 VAL	MEM14 VAL	MEM14 VAL
9999900-02-5	Gasoline Range Organics	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TPH-GRO							
	SAMPLE ID ------->	002-G-05DA-03	002-G-05UA-03	002-G-08DA-03	002-G-08UA-03	002-G-10DA-03	002-G-10UA-03
	ORIGINAL ID ----->	002G05DA03	002G05UA03	002G08DA03	002G08UA03	002G10DA03	002G10UA03
	LAB SAMPLE ID --->	S772297*2	S772328*4	S772328*5	S772249*2	S772328*6	S772284*2
	ID FROM REPORT -->	002G05DA03	002G05UA03	002G08DA03	002G08UA03	002G10DA03	002G10UA03
	SAMPLE DATE ----->	04/24/97	04/25/97	04/25/97	04/22/97	04/25/97	04/22/97
	DATE ANALYZED --->	05/01/97	05/01/97	05/01/97	04/30/97	05/01/97	05/01/97
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ---------->	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
CAS #	Parameter	MEM14 VAL	MEM14 VAL	MEM14 VAL	MEM14 VAL	MEM14 VAL	MEM14 VAL
9999900-02-5	Gasoline Range Organics	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TPH-GRO													
	SAMPLE ID ------->	002-G-11UA-03		002-G-13DA-03		002-G-13MA-03		002-G-13UA-03		002-G-14DA-03		002-G-14UA-03	
	ORIGINAL ID ----->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	LAB SAMPLE ID --->	S772284*3		S772297*3		S772297*4		S772284*4		S772328*7		S772284*5	
	ID FROM REPORT -->	002G11UA03		002G13DA03		002G13MA03		002G13UA03		002G14DA03		002G14UA03	
	SAMPLE DATE ----->	04/23/97		04/24/97		04/23/97		04/23/97		04/25/97		04/23/97	
	DATE ANALYZED --->	05/01/97		05/01/97		05/01/97		05/01/97		05/01/97		05/01/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-02-5	Gasoline Range Organics	0.036	U	0.036	U	0.036	U	0.036	U	0.036	U	0.036	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TSS													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	04/25/97		04/25/97		04/25/97		04/25/97		04/25/97		04/25/97	
	DATE ANALYZED --->	04/27/97		04/27/97		04/27/97		04/27/97		04/27/97		04/27/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-03-7	Total Suspended Solids (TSS)	38.	J	7.	J	50.		39.		230.		420.	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TSS							
	SAMPLE ID ------->	002-G-13UA-03		002-G-14UA-03			
	ORIGINAL ID ----->	002G13UA03		002G14UA03			
	LAB SAMPLE ID --->	S772284*4		S772284*5			
	ID FROM REPORT -->	002G13UA03		002G14UA03			
	SAMPLE DATE ----->	04/23/97		04/23/97			
	DATE EXTRACTED -->	04/25/97		04/25/97			
	DATE ANALYZED --->	04/27/97		04/27/97			
	MATRIX ---------->	Water		Water			
	UNITS ---------->	MG/L		MG/L			
CAS #	Parameter	MEM14	VAL	MEM14	VAL		
9999900-03-7	Total Suspended Solids (TSS)	27.		22.			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TURBIDITY													
	SAMPLE ID ------->	002-G-02UA-03		002-H-02UA-03		002-G-04UA-03		002-G-08UA-03		002-G-10UA-03		002-G-11UA-03	
	ORIGINAL ID ----->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	LAB SAMPLE ID --->	S772249*1		S772249*3		S772284*1		S772249*2		S772284*2		S772284*3	
	ID FROM REPORT -->	002G02UA03		002H02UA03		002G04UA03		002G08UA03		002G10UA03		002G11UA03	
	SAMPLE DATE ----->	04/22/97		04/22/97		04/23/97		04/22/97		04/22/97		04/23/97	
	DATE EXTRACTED -->	04/23/97		04/23/97		04/24/97		04/23/97		04/24/97		04/24/97	
	DATE ANALYZED --->	04/23/97		04/23/97		04/24/97		04/23/97		04/24/97		04/24/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	NTU		NTU		NTU		NTU		NTU		NTU	
CAS #	Parameter	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL	MEM14	VAL
9999900-04-4	Turbidity	20.	J	11.	J	29.		26.		100.		75.	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM14
Primary Sample Results After Validation

TURBIDITY							
	SAMPLE ID ------->	002-G-13UA-03		002-G-14UA-03			
	ORIGINAL ID ----->	002G13UA03		002G14UA03			
	LAB SAMPLE ID --->	S772284*4		S772284*5			
	ID FROM REPORT -->	002G13UA03		002G14UA03			
	SAMPLE DATE ----->	04/23/97		04/23/97			
	DATE EXTRACTED -->	04/24/97		04/24/97			
	DATE ANALYZED --->	04/24/97		04/24/97			
	MATRIX ---------->	Water		Water			
	UNITS ---------->	NTU		NTU			
CAS #	Parameter	MEM14	VAL	MEM14	VAL		
9999900-04-4	Turbidity	25.		36.			

*** Validation Complete ***

Validated Data Summary Tables

SDG MEM15

NSA MID-SOUTH
SDG MEM15
Primary Sample Results After Validation

APX9-METAL								
	SAMPLE ID ------->	002-G-06UA-03		002-G-07UA-03				
	ORIGINAL ID ----->	002G06UA03		002G07UA03				
	LAB SAMPLE ID --->	S772392*15		S772392*16				
	ID FROM REPORT -->	002G06UA03		002G07UA03				
	SAMPLE DATE ----->	04/29/97		04/29/97				
	DATE EXTRACTED -->	05/05/97		05/05/97				
	DATE ANALYZED --->	05/06/97		05/06/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM15	VAL	MEM15	VAL			
7440-36-0	Antimony	17.7	U	17.7	U			
7440-38-2	Arsenic	2.5	J	3.7	J			
7440-39-3	Barium	157.		112.				
7440-41-7	Beryllium	0.12	UJ	0.12	UJ			
7440-43-9	Cadmium	2.	U	2.	U			
7440-47-3	Chromium	4.1	J	2.	U			
7440-48-4	Cobalt	13.7		2.4	U			
7440-50-8	Copper	2.1	U	12.1	U			
7439-92-1	Lead	1.1	U	1.1	U			
7439-97-6	Mercury	0.05	U	0.05	U			
7440-02-0	Nickel	14.6	J	8.8	U			
7782-49-2	Selenium	2.3	UJ	4.2	UJ			
7440-22-4	Silver	1.5	U	1.5	U			
7440-28-0	Thallium	0.97	U	0.97	UJ			
7440-62-2	Vanadium	1.7	U	1.7	U			
7440-66-6	Zinc	7.2	U	4.	U			
7440-31-5	Tin	12.	U	12.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM15
Primary Sample Results After Validation

METAL-CN								
	SAMPLE ID ------->	002-G-06UA-03		002-G-07UA-03				
	ORIGINAL ID ----->	002G06UA03		002G07UA03				
	LAB SAMPLE ID --->	S772392*15		S772392*16				
	ID FROM REPORT -->	002G06UA03		002G07UA03				
	SAMPLE DATE ----->	04/29/97		04/29/97				
	DATE EXTRACTED -->	05/12/97		05/12/97				
	DATE ANALYZED --->	05/12/97		05/12/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM15	VAL	MEM15	VAL			
57-12-5	Cyanide (CN)	10.	U	10.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM15
Primary Sample Results After Validation

SW846-HERB								
	SAMPLE ID ------->	002-G-06UA-03		002-G-07UA-03				
	ORIGINAL ID ----->	002G06UA03		002G07UA03				
	LAB SAMPLE ID --->	S772392*15		S772392*16				
	ID FROM REPORT -->	002G06UA03		002G07UA03				
	SAMPLE DATE ----->	04/29/97		04/29/97				
	DATE EXTRACTED -->	05/05/97		05/05/97				
	DATE ANALYZED --->	05/07/97		05/07/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM15	VAL	MEM15	VAL			
75-99-0	Dalapon	120.	U	120.	U			
93-65-2	MCPP	120.	U	120.	U			
1918-00-9	Dicamba	1.2	U	1.2	U			
94-74-6	MCPA	120.	U	120.	U			
120-36-5	Dichlorprop	6.	U	6.	U			
94-75-7	2,4-D	0.5	U	0.5	U			
93-72-1	2,4,5-TP (Silvex)	0.5	U	0.5	U			
93-76-5	2,4,5-T	0.5	U	0.5	U			
88-85-7	Dinoseb	6.	U	6.	U			
94-82-6	2,4-DB	0.5	U	0.5	U			
93-65-2	MCPP	NR		NR				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM15
Primary Sample Results After Validation

SW846-OP P								
	SAMPLE ID ------->	002-G-06UA-03		002-G-07UA-03				
	ORIGINAL ID ----->	002G06UA03		002G07UA03				
	LAB SAMPLE ID --->	S772392*15		S772392*16				
	ID FROM REPORT -->	002G06UA03		002G07UA03				
	SAMPLE DATE ----->	04/29/97		04/29/97				
	DATE EXTRACTED -->	05/05/97		05/05/97				
	DATE ANALYZED --->	05/13/97		05/14/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM15	VAL	MEM15	VAL			
86-50-0	Azinphos methyl	1.	U	1.	U			
35400-43-2	Sulprofos (Bolstar)	1.	U	1.	U			
2921-88-2	Chloropyrifos	1.	U	1.	U			
56-72-4	Coumaphos	1.	U	1.	U			
8065-48-3	Demeton,O	2.5	U	2.5	U			
126-75-0	Demeton,S	2.5	U	2.5	U			
333-41-5	Diazinon	1.	U	1.	U			
62-73-7	Dichlorvos	2.	U	2.	U			
298-04-4	Disulfoton	2.	U	2.	U			
13194-48-4	Ethoprop	0.5	U	0.5	U			
115-90-2	Fensulfothion	5.	U	5.	U			
55-38-9	Fenthion	1.	U	1.	U			
26718-65-0	Mevinphos	2.	U	2.	U			
300-76-5	Naled	5.	U	5.	U			
298-00-0	Methyl parathion	0.5	U	0.5	U			
298-02-2	Phorate	1.	U	1.	U			
299-84-3	Ronnel	1.	U	1.	U			
22248-79-9	Stirophos (Tetrachlorovinphos)	1.	U	1.	U			
327-98-0	Trichloronate	1.	U	1.	U			
150-50-5	Merphos	1.	U	1.	U			
34643-46-4	Tokuthion	1.	U	1.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM15
Primary Sample Results After Validation

SW846-PEST								
	SAMPLE ID ------->	002-G-06UA-03		002-G-07UA-03				
	ORIGINAL ID ----->	002G06UA03		002G07UA03				
	LAB SAMPLE ID --->	S772392*15		S772392*16				
	ID FROM REPORT -->	002G06UA03		002G07UA03				
	SAMPLE DATE ----->	04/29/97		04/29/97				
	DATE EXTRACTED -->	05/02/97		05/02/97				
	DATE ANALYZED --->	05/06/97		05/07/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM15	VAL	MEM15	VAL			
319-84-6	alpha-BHC	0.05	U	0.05	U			
319-85-7	beta-BHC	0.05	U	0.05	U			
319-86-8	delta-BHC	0.05	U	0.05	U			
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U			
76-44-8	Heptachlor	0.05	U	0.05	U			
309-00-2	Aldrin	0.05	U	0.05	U			
1024-57-3	Heptachlor epoxide	0.05	U	0.05	U			
959-98-8	Endosulfan I	0.05	U	0.05	U			
60-57-1	Dieldrin	0.1	U	0.1	U			
72-55-9	4,4'-DDE	0.1	U	0.1	U			
72-20-8	Endrin	0.1	U	0.1	U			
33213-65-9	Endosulfan II	0.1	U	0.1	U			
72-54-8	4,4'-DDD	0.1	U	0.1	U			
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U			
50-29-3	4,4'-DDT	0.1	U	0.1	U			
72-43-5	Methoxychlor	0.5	U	0.5	U			
7421-93-4	Endrin aldehyde	0.1	U	0.1	U			
8001-35-2	Toxaphene	5.	U	5.	U			
12674-11-2	Aroclor-1016	1.	U	1.	U			
11104-28-2	Aroclor-1221	2.	U	2.	U			
11141-16-5	Aroclor-1232	1.	U	1.	U			
53469-21-9	Aroclor-1242	1.	U	1.	U			
12672-29-6	Aroclor-1248	1.	U	1.	U			
11097-69-1	Aroclor-1254	1.	U	1.	U			
11096-82-5	Aroclor-1260	1.	U	1.	U			
57-74-9	Chlordane	0.5	U	0.5	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM15
Primary Sample Results After Validation

SW846-SVOA								
	SAMPLE ID ------->	002-G-06UA-03		002-G-07UA-03				
	ORIGINAL ID ----->	002G06UA03		002G07UA03				
	LAB SAMPLE ID --->	S772392*15		S772392*16				
	ID FROM REPORT -->	002G06UA03		002G07UA03				
	SAMPLE DATE ----->	04/29/97		04/29/97				
	DATE EXTRACTED -->	05/02/97		05/02/97				
	DATE ANALYZED --->	05/08/97		05/08/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM15	VAL	MEM15	VAL			
108-95-2	Phenol	10.	U	10.	U			
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U			
95-57-8	2-Chlorophenol	10.	U	10.	U			
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U			
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U			
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U			
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U			
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U	10.	U			
9999900-32-2	3-Methylphenol/4-Methylphenol	10.	U	10.	UJ			
621-64-7	N-Nitroso-di-n-propylamine	10.	UJ	10.	U			
67-72-1	Hexachloroethane	10.	U	10.	U			
98-95-3	Nitrobenzene	10.	U	10.	U			
78-59-1	Isophorone	10.	U	10.	U			
88-75-5	2-Nitrophenol	10.	U	10.	U			
105-67-9	2,4-Dimethylphenol	10.	U	10.	U			
120-83-2	2,4-Dichlorophenol	10.	U	10.	U			
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U			
91-20-3	Naphthalene	10.	U	10.	U			
106-47-8	4-Chloroaniline	20.	U	20.	U			
87-68-3	Hexachlorobutadiene	10.	U	10.	U			
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U			
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U			
91-57-6	2-Methylnaphthalene	10.	U	10.	U			
77-47-4	Hexachlorocyclopentadiene	10.	U	10.	U			
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U			
95-95-4	2,4,5-Trichlorophenol	10.	U	10.	U			
91-58-7	2-Chloronaphthalene	10.	U	10.	U			
88-74-4	2-Nitroaniline	50.	U	50.	U			
131-11-3	Dimethylphthalate	10.	U	10.	U			
208-96-8	Acenaphthylene	10.	U	10.	U			
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U			
99-09-2	3-Nitroaniline	50.	U	50.	U			
83-32-9	Acenaphthene	10.	U	10.	U			
51-28-5	2,4-Dinitrophenol	50.	U	50.	U			
100-02-7	4-Nitrophenol	50.	U	50.	U			
132-64-9	Dibenzofuran	10.	U	10.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM15
Primary Sample Results After Validation

SW846-SVOA								
	SAMPLE ID ------->	002-G-06UA-03		002-G-07UA-03				
	ORIGINAL ID ----->	002G06UA03		002G07UA03				
	LAB SAMPLE ID --->	S772392*15		S772392*16				
	ID FROM REPORT -->	002G06UA03		002G07UA03				
	SAMPLE DATE ----->	04/29/97		04/29/97				
	DATE EXTRACTED -->	05/02/97		05/02/97				
	DATE ANALYZED --->	05/08/97		05/08/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM15	VAL	MEM15	VAL			
121-14-2	2,4-Dinitrotoluene	10.	U	10.	U			
84-66-2	Diethylphthalate	10.	U	10.	U			
7005-72-3	4-Chlorophenylphenyl ether	10.	U	10.	U			
86-73-7	Fluorene	10.	U	10.	U			
100-01-6	4-Nitroaniline	50.	U	50.	U			
534-52-1	2-Methyl-4,6-Dinitrophenol	50.	U	50.	U			
86-30-6	N-Nitrosodiphenylamine	10.	U	10.	U			
101-55-3	4-Bromophenyl-phenylether	10.	U	10.	U			
118-74-1	Hexachlorobenzene	10.	U	10.	U			
87-86-5	Pentachlorophenol	50.	U	50.	U			
85-01-8	Phenanthrene	10.	U	10.	U			
120-12-7	Anthracene	10.	U	10.	U			
86-74-8	Carbazole	10.	U	10.	U			
84-74-2	Di-n-butylphthalate	10.	U	0.71	J			
206-44-0	Fluoranthene	10.	U	10.	U			
129-00-0	Pyrene	10.	U	10.	U			
85-68-7	Butylbenzylphthalate	10.	U	10.	U			
91-94-1	3,3'-Dichlorobenzidine	20.	U	20.	U			
56-55-3	Benzo(a)anthracene	10.	U	10.	U			
218-01-9	Chrysene	10.	U	10.	U			
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U			
117-84-0	Di-n-octylphthalate	10.	U	10.	U			
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U			
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U			
50-32-8	Benzo(a)pyrene	10.	U	10.	U			
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U			
53-70-3	Dibenz(a,h)anthracene	10.	U	10.	U			
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM15
Primary Sample Results After Validation

SW846-VOA			
	SAMPLE ID ------->	002-G-06UA-03	002-G-07UA-03
	ORIGINAL ID ----->	002G06UA03	002G07UA03
	LAB SAMPLE ID --->	S772392*15	S772392*16
	ID FROM REPORT -->	002G06UA03	002G07UA03
	SAMPLE DATE ----->	04/29/97	04/29/97
	DATE ANALYZED --->	05/02/97	05/02/97
	MATRIX ---------->	Water	Water
	UNITS ---------->	UG/L	UG/L

CAS #	Parameter	MEM15	VAL	MEM15	VAL
74-87-3	Chloromethane	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U
75-09-2	Methylene chloride	0.99	J	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U
75-27-4	Bromodichloromethane	5.	U	5.	U
108-88-3	Toluene	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U
127-18-4	Tetrachloroethene	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U
75-25-2	Bromoform	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U
67-64-1	Acetone	50.	U	50.	U
75-15-0	Carbon disulfide	5.	U	5.	U
78-93-3	2-Butanone (MEK)	25.	U	25.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U	25.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U
591-78-6	2-Hexanone	25.	U	25.	U
1330-20-7	Xylene (Total)	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM15
Primary Sample Results After Validation

TPH								
	SAMPLE ID ------->	002-G-06UA-03		002-G-07UA-03				
	ORIGINAL ID ----->	002G06UA03		002G07UA03				
	LAB SAMPLE ID --->	S772392*15		S772392*16				
	ID FROM REPORT -->	002G06UA03		002G07UA03				
	SAMPLE DATE ----->	04/29/97		04/29/97				
	DATE EXTRACTED -->	05/06/97		05/06/97				
	DATE ANALYZED --->	05/07/97		05/07/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	MG/L		MG/L				
CAS #	Parameter	MEM15	VAL	MEM15	VAL			
9999900-02-4	Petroleum Hydrocarbons, TPH	1.	U	1.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM15
Primary Sample Results After Validation

TPH-DRO								
	SAMPLE ID ------->	002-G-06UA-03		002-G-07UA-03				
	ORIGINAL ID ----->	002G06UA03		002G07UA03				
	LAB SAMPLE ID --->	S772392*15		S772392*16				
	ID FROM REPORT -->	002G06UA03		002G07UA03				
	SAMPLE DATE ----->	04/29/97		04/29/97				
	DATE EXTRACTED -->	05/02/97		05/02/97				
	DATE ANALYZED --->	05/08/97		05/12/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	MG/L		MG/L				
CAS #	Parameter	MEM15	VAL	MEM15	VAL			
9999900-02-6	Diesel Range Organics	0.1	U	0.1	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM15
Primary Sample Results After Validation

TPH-GRO								
	SAMPLE ID ------->	002-G-06UA-03		002-G-07UA-03				
	ORIGINAL ID ----->	002G06UA03		002G07UA03				
	LAB SAMPLE ID --->	S772392*15		S772392*16				
	ID FROM REPORT -->	002G06UA03		002G07UA03				
	SAMPLE DATE ----->	04/29/97		04/29/97				
	DATE ANALYZED --->	05/07/97		05/07/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	MG/L		MG/L				
CAS #	Parameter	MEM15	VAL	MEM15	VAL			
9999900-02-5	Gasoline Range Organics	0.036	U	0.036	U			

*** Validation Complete ***

Validated Data Summary Tables

SDG MEM21

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

ALKALINITY							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE ANALYZED --->	05/15/97					
	MATRIX ---------->	Water					
	UNITS ---------->	MG/L					
CAS #	Parameter	MEM21 VAL					
471-34-1	Alkalinity (as CaCO3)	320.					

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

APX9-METAL								
	SAMPLE ID ------->	002-G-12DA-03		002-G-12UA-03				
	ORIGINAL ID ----->	002G12DA03		002G12UA03				
	LAB SAMPLE ID --->	S772643*1		S772643*2				
	ID FROM REPORT -->	002G12DA03		002G12UA03				
	SAMPLE DATE ----->	05/08/97		05/08/97				
	DATE EXTRACTED -->	05/13/97		05/13/97				
	DATE ANALYZED --->	05/14/97		05/14/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM21	VAL	MEM21	VAL			
7440-36-0	Antimony	17.7	U	17.7	U			
7440-38-2	Arsenic	5.	J	9.5	J			
7440-39-3	Barium	183.		161.				
7440-41-7	Beryllium	0.12	UJ	0.12	UJ			
7440-43-9	Cadmium	2.	U	2.	U			
7440-47-3	Chromium	2.	U	2.	U			
7440-48-4	Cobalt	3.9	J	7.	J			
7440-50-8	Copper	2.1	U	5.4	U			
7439-92-1	Lead	1.7	J	2.2	J			
7439-97-6	Mercury	0.05	U	0.05	U			
7440-02-0	Nickel	8.8	U	8.8	U			
7782-49-2	Selenium	1.8	UJ	5.6	U			
7440-22-4	Silver	1.5	U	1.5	U			
7440-28-0	Thallium	0.97	U	0.97	U			
7440-62-2	Vanadium	1.7	U	3.6	J			
7440-66-6	Zinc	3.4	U	5.4	U			
7440-31-5	Tin	12.	U	12.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

BOD5							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE EXTRACTED -->	05/09/97					
	DATE ANALYZED --->	05/09/97					
	MATRIX ---------->	Water					
	UNITS ---------->	MG/L					
CAS #	Parameter	MEM21	VAL				
9999900-03-8	Biochemical Oxygen Demand (5-day)	2.	U				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

CHLORIDE-I							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE EXTRACTED -->	05/26/97					
	DATE ANALYZED --->	05/26/97					
	MATRIX ---------->	Water					
	UNITS ---------->	MG/L					
CAS #	Parameter	MEM21 VAL					
16887-00-6	Chloride	4.5					

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

COD							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE EXTRACTED -->	05/21/97					
	DATE ANALYZED --->	05/22/97					
	MATRIX ---------->	Water					
	UNITS ----------->	MG/L					
CAS #	Parameter	MEM21	VAL				
9999900-04-0	Chemical Oxygen Demand	20.	U				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

FE & MN							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE EXTRACTED -->	05/13/97					
	DATE ANALYZED --->	05/14/97					
	MATRIX ---------->	Water					
	UNITS ---------->	UG/L					
CAS #	Parameter	MEM21	VAL				
7439-89-6	Iron	4390.					
7439-96-5	Manganese	1720.					

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

HARDNESS							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE EXTRACTED -->	05/19/97					
	DATE ANALYZED --->	05/19/97					
	MATRIX ---------->	Water					
	UNITS ---------->	MG/L					
CAS #	Parameter	MEM21 VAL					
9999900-03-3	Hardness as CaCO3	250.					

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

HPC							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE EXTRACTED -->	05/09/97					
	DATE ANALYZED --->	05/09/97					
	MATRIX ---------->	Water					
	UNITS ---------->	CFU/M					
CAS #	Parameter	MEM21 VAL					
9999900-03-6	Standard Plate Count	980.					

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

KJELDAHL

SAMPLE ID ------->	002-G-12UA-03
ORIGINAL ID ----->	002G12UA03
LAB SAMPLE ID --->	S772643*2
ID FROM REPORT -->	002G12UA03
SAMPLE DATE ----->	05/08/97
DATE EXTRACTED -->	05/20/97
DATE ANALYZED --->	05/21/97
MATRIX ---------->	Water
UNITS ---------->	MG/L

CAS #	Parameter	MEM21	VAL
9999000-72-6	Kjeldahl Nitrogen, Total	0.25	J

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

METAL-CN								
	SAMPLE ID ------->	002-G-12DA-03		002-G-12UA-03				
	ORIGINAL ID ----->	002G12DA03		002G12UA03				
	LAB SAMPLE ID --->	S772643*1		S772643*2				
	ID FROM REPORT -->	002G12DA03		002G12UA03				
	SAMPLE DATE ----->	05/08/97		05/08/97				
	DATE EXTRACTED -->	05/15/97		05/15/97				
	DATE ANALYZED --->	05/16/97		05/16/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM21	VAL	MEM21	VAL			
57-12-5	Cyanide (CN)	10.	U	10.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

METHANE							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE EXTRACTED -->	05/20/97					
	DATE ANALYZED --->	05/20/97					
	MATRIX ---------->	Water					
	UNITS ---------->	UG/L					
CAS #	Parameter	MEM21 VAL					
74-82-8	METHANE	47. U					

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

NITRATE							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE ANALYZED --->	05/09/97					
	MATRIX ---------->	Water					
	UNITS ---------->	MG/L					
CAS #	Parameter	MEM21	VAL				
14797-55-8	Nitrate (as N)	0.12	J				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

SULFATE-IC

SAMPLE ID ------->	002-G-12UA-03
ORIGINAL ID ----->	002G12UA03
LAB SAMPLE ID --->	S772643*2
ID FROM REPORT -->	002G12UA03
SAMPLE DATE ----->	05/08/97
DATE EXTRACTED -->	05/26/97
DATE ANALYZED --->	05/26/97
MATRIX ---------->	Water
UNITS ---------->	MG/L

CAS #	Parameter	MEM21	VAL
14808-79-8	Sulfate	6.7	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

SW846-HERB								
	SAMPLE ID ------->	002-G-12DA-03		002-G-12UA-03				
	ORIGINAL ID ----->	002G12DA03		002G12UA03				
	LAB SAMPLE ID --->	S772643*1		S772643*2				
	ID FROM REPORT -->	002G12DA03		002G12UA03				
	SAMPLE DATE ----->	05/08/97		05/08/97				
	DATE EXTRACTED -->	05/13/97		05/13/97				
	DATE ANALYZED --->	05/24/97		05/24/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM21	VAL	MEM21	VAL			
75-99-0	Dalapon	120.	U	120.	U			
93-65-2	MCPP	120.	U	120.	U			
1918-00-9	Dicamba	1.2	U	1.2	U			
94-74-6	MCPA	120.	U	120.	U			
120-36-5	Dichlorprop	6.	U	6.	U			
94-75-7	2,4-D	0.5	U	0.5	U			
93-72-1	2,4,5-TP (Silvex)	0.5	U	0.5	U			
93-76-5	2,4,5-T	0.5	U	0.5	U			
88-85-7	Dinoseb	6.	U	6.	U			
94-82-6	2,4-DB	0.5	U	0.5	U			
93-65-2	MCPP	NR		NR				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

SW846-OP P									
	SAMPLE ID ------->	002-G-12DA-03		002-G-12UA-03					
	ORIGINAL ID ----->	002G12DA03		002G12UA03					
	LAB SAMPLE ID --->	S772643*1		S772643*2					
	ID FROM REPORT -->	002G12DA03		002G12UA03					
	SAMPLE DATE ----->	05/08/97		05/08/97					
	DATE EXTRACTED -->	05/13/97		05/13/97					
	DATE ANALYZED --->	05/21/97		05/21/97					
	MATRIX ---------->	Water		Water					
	UNITS ---------->	UG/L		UG/L					
CAS #	Parameter	MEM21	VAL	MEM21	VAL				
86-50-0	Azinphos methyl	1.	U	1.	U				
35400-43-2	Sulprofos (Bolstar)	1.	U	1.	U				
2921-88-2	Chloropyrifos	1.	U	1.	U				
56-72-4	Coumaphos	1.	U	1.	U				
8065-48-3	Demeton,O	2.5	U	2.5	U				
126-75-0	Demeton,S	2.5	U	2.5	U				
333-41-5	Diazinon	1.	U	1.	U				
62-73-7	Dichlorvos	2.	U	2.	U				
298-04-4	Disulfoton	2.	U	2.	U				
13194-48-4	Ethoprop	0.5	U	0.5	U				
115-90-2	Fensulfothion	5.	U	5.	U				
55-38-9	Fenthion	1.	U	1.	U				
26718-65-0	Mevinphos	2.	U	2.	U				
300-76-5	Naled	5.	U	5.	U				
298-00-0	Methyl parathion	0.5	U	0.5	U				
298-02-2	Phorate	1.	U	1.	U				
299-84-3	Ronnel	1.	U	1.	U				
22248-79-9	Stirophos (Tetrachlorovinphos)	1.	U	1.	U				
327-98-0	Trichloronate	1.	U	1.	U				
150-50-5	Merphos	1.	U	1.	U				
34643-46-4	Tokuthion	1.	U	1.	U				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

SW846-PEST								
	SAMPLE ID ------->	002-G-12DA-03		002-G-12UA-03				
	ORIGINAL ID ----->	002G12DA03		002G12UA03				
	LAB SAMPLE ID --->	S772643*1		S772643*2				
	ID FROM REPORT -->	002G12DA03		002G12UA03				
	SAMPLE DATE ----->	05/08/97		05/08/97				
	DATE EXTRACTED -->	05/14/97		05/14/97				
	DATE ANALYZED --->	05/19/97		05/19/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		MG/L				
CAS #	Parameter	MEM21	VAL	MEM21	VAL			
319-84-6	alpha-BHC	0.05	U	0.05	U			
319-85-7	beta-BHC	0.05	U	0.05	U			
319-86-8	delta-BHC	0.05	U	0.05	U			
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U			
76-44-8	Heptachlor	0.05	U	0.05	U			
309-00-2	Aldrin	0.05	U	0.05	U			
1024-57-3	Heptachlor epoxide	0.05	U	0.05	U			
959-98-8	Endosulfan I	0.05	U	0.05	U			
60-57-1	Dieldrin	0.1	U	0.1	U			
72-55-9	4,4'-DDE	0.1	U	0.1	U			
72-20-8	Endrin	0.1	U	0.1	U			
33213-65-9	Endosulfan II	0.1	U	0.1	U			
72-54-8	4,4'-DDD	0.1	U	0.1	U			
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U			
50-29-3	4,4'-DDT	0.1	U	0.1	U			
72-43-5	Methoxychlor	0.5	U	0.5	U			
7421-93-4	Endrin aldehyde	0.1	U	0.1	U			
8001-35-2	Toxaphene	5.	U	5.	U			
12674-11-2	Aroclor-1016	1.	U	1.	U			
11104-28-2	Aroclor-1221	2.	U	2.	U			
11141-16-5	Aroclor-1232	1.	U	1.	U			
53469-21-9	Aroclor-1242	1.	U	1.	U			
12672-29-6	Aroclor-1248	1.	U	1.	U			
11097-69-1	Aroclor-1254	1.	U	1.	U			
11096-82-5	Aroclor-1260	1.	U	1.	U			
57-74-9	Chlordane	0.5	U	0.05	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

SW846-SVOA									
	SAMPLE ID ------->	002-G-12DA-03		002-G-12UA-03					
	ORIGINAL ID ----->	002G12DA03		002G12UA03					
	LAB SAMPLE ID --->	S772643*1		S772643*2					
	ID FROM REPORT -->	002G12DA03		002G12UA03					
	SAMPLE DATE ----->	05/08/97		05/08/97					
	DATE EXTRACTED -->	05/13/97		05/13/97					
	DATE ANALYZED --->	05/20/97		05/21/97					
	MATRIX ---------->	Water		Water					
	UNITS ---------->	UG/L		UG/L					
CAS #	Parameter	MEM21	VAL	MEM21	VAL				
108-95-2	Phenol	10.	U	10.	U				
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U				
95-57-8	2-Chlorophenol	10.	U	10.	U				
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U				
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U				
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U				
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U				
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U	10.	U				
9999900-32-2	3-Methylphenol/4-Methylphenol	10.	U	10.	U				
621-64-7	N-Nitroso-di-n-propylamine	10.	U	10.	U				
67-72-1	Hexachloroethane	10.	U	10.	U				
98-95-3	Nitrobenzene	10.	U	10.	U				
78-59-1	Isophorone	10.	U	10.	U				
88-75-5	2-Nitrophenol	10.	U	10.	U				
105-67-9	2,4-Dimethylphenol	10.	U	10.	U				
120-83-2	2,4-Dichlorophenol	10.	U	10.	U				
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U				
91-20-3	Naphthalene	10.	U	10.	U				
106-47-8	4-Chloroaniline	20.	U	20.	U				
87-68-3	Hexachlorobutadiene	10.	U	10.	U				
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U				
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U				
91-57-6	2-Methylnaphthalene	10.	U	10.	U				
77-47-4	Hexachlorocyclopentadiene	10.	U	10.	U				
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U				
95-95-4	2,4,5-Trichlorophenol	10.	U	10.	U				
91-58-7	2-Chloronaphthalene	10.	U	10.	U				
88-74-4	2-Nitroaniline	50.	U	50.	U				
131-11-3	Dimethylphthalate	10.	U	10.	U				
208-96-8	Acenaphthylene	10.	U	10.	U				
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U				
99-09-2	3-Nitroaniline	50.	U	50.	U				
83-32-9	Acenaphthene	10.	U	10.	U				
51-28-5	2,4-Dinitrophenol	50.	U	50.	U				
100-02-7	4-Nitrophenol	50.	U	50.	U				
132-64-9	Dibenzofuran	10.	U	10.	U				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

SW846-SVOA								
	SAMPLE ID ------->	002-G-12DA-03		002-G-12UA-03				
	ORIGINAL ID ----->	002G12DA03		002G12UA03				
	LAB SAMPLE ID --->	S772643*1		S772643*2				
	ID FROM REPORT -->	002G12DA03		002G12UA03				
	SAMPLE DATE ----->	05/08/97		05/08/97				
	DATE EXTRACTED -->	05/13/97		05/13/97				
	DATE ANALYZED --->	05/20/97		05/21/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	UG/L		UG/L				
CAS #	Parameter	MEM21	VAL	MEM21	VAL			
121-14-2	2,4-Dinitrotoluene	10.	U	10.	U			
84-66-2	Diethylphthalate	10.	U	10.	U			
7005-72-3	4-Chlorophenylphenyl ether	10.	U	10.	U			
86-73-7	Fluorene	10.	U	10.	U			
100-01-6	4-Nitroaniline	50.	U	50.	U			
534-52-1	2-Methyl-4,6-Dinitrophenol	50.	U	50.	U			
86-30-6	N-Nitrosodiphenylamine	10.	U	10.	U			
101-55-3	4-Bromophenyl-phenylether	10.	U	10.	U			
118-74-1	Hexachlorobenzene	10.	U	10.	U			
87-86-5	Pentachlorophenol	50.	U	50.	U			
85-01-8	Phenanthrene	10.	U	10.	U			
120-12-7	Anthracene	10.	U	10.	U			
86-74-8	Carbazole	10.	U	10.	U			
84-74-2	Di-n-butylphthalate	10.	U	10.	U			
206-44-0	Fluoranthene	10.	U	10.	U			
129-00-0	Pyrene	10.	U	10.	U			
85-68-7	Butylbenzylphthalate	10.	U	10.	U			
91-94-1	3,3'-Dichlorobenzidine	20.	U	20.	U			
56-55-3	Benzo(a)anthracene	10.	U	10.	U			
218-01-9	Chrysene	10.	U	10.	U			
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U			
117-84-0	Di-n-octylphthalate	10.	U	10.	U			
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U			
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U			
50-32-8	Benzo(a)pyrene	10.	U	10.	U			
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U			
53-70-3	Dibenz(a,h)anthracene	10.	U	10.	U			
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U			

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

SW846-VOA									
	SAMPLE ID ------->	002-G-12DA-03		002-G-12UA-03					
	ORIGINAL ID ----->	002G12DA03		002G12UA03					
	LAB SAMPLE ID --->	S772643*1		S772643*2					
	ID FROM REPORT -->	002G12DA03		002G12UA03					
	SAMPLE DATE ----->	05/08/97		05/08/97					
	DATE ANALYZED --->	05/15/97		05/15/97					
	MATRIX ---------->	Water		Water					
	UNITS ---------->	UG/L		UG/L					
CAS #	Parameter	MEM21	VAL	MEM21	VAL				
74-87-3	Chloromethane	10.	U	10.	U				
75-01-4	Vinyl chloride	10.	U	10.	U				
74-83-9	Bromomethane	10.	UJ	10.	UJ				
75-00-3	Chloroethane	10.	U	10.	U				
75-35-4	1,1-Dichloroethene	5.	U	5.	U				
75-09-2	Methylene chloride	5.	U	5.	U				
75-34-3	1,1-Dichloroethane	5.	U	5.	U				
67-66-3	Chloroform	5.	U	5.	U				
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U				
56-23-5	Carbon tetrachloride	5.	U	5.	U				
71-43-2	Benzene	5.	U	5.	U				
107-06-2	1,2-Dichloroethane	5.	U	5.	U				
79-01-6	Trichloroethene	5.	U	5.	U				
78-87-5	1,2-Dichloropropane	5.	U	5.	U				
75-27-4	Bromodichloromethane	5.	U	5.	U				
108-88-3	Toluene	5.	U	5.	U				
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U				
127-18-4	Tetrachloroethene	5.	U	5.	U				
124-48-1	Dibromochloromethane	5.	U	5.	U				
108-90-7	Chlorobenzene	5.	U	5.	U				
100-41-4	Ethylbenzene	5.	U	5.	U				
100-42-5	Styrene	5.	U	5.	U				
75-25-2	Bromoform	5.	U	5.	U				
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U				
67-64-1	Acetone	50.	U	50.	U				
75-15-0	Carbon disulfide	5.	U	5.	U				
78-93-3	2-Butanone (MEK)	25.	U	25.	U				
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U	25.	U				
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U				
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U				
591-78-6	2-Hexanone	25.	U	25.	U				
1330-20-7	Xylene (Total)	5.	U	5.	U				
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

TDS							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE EXTRACTED -->	05/13/97					
	DATE ANALYZED --->	05/14/97					
	MATRIX ---------->	Water					
	UNITS ----------->	MG/L					
CAS #	Parameter	MEM21 VAL					
9999900-07-2	Total Dissolved Solids (TDS)	340.					

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

TOC							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE EXTRACTED -->	05/13/97					
	DATE ANALYZED --->	05/13/97					
	MATRIX ---------->	Water					
	UNITS ---------->	MG/L					
CAS #	Parameter	MEM21	VAL				
9999900-01-4	Total Organic Carbon (TOC)	1.	U				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

TOTAL PHOS							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE EXTRACTED -->	05/20/97					
	DATE ANALYZED --->	05/25/97					
	MATRIX ---------->	Water					
	UNITS ---------->	MG/L					
CAS #	Parameter	MEM21	VAL				
22569-71-7	Total phosphorus	0.2	J				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

TPH	SAMPLE ID ------->	002-G-12DA-03		002-G-12UA-03					
	ORIGINAL ID ----->	002G12DA03		002G12UA03					
	LAB SAMPLE ID --->	S772643*1		S772643*2					
	ID FROM REPORT -->	002G12DA03		002G12UA03					
	SAMPLE DATE ----->	05/08/97		05/08/97					
	DATE EXTRACTED -->	05/20/97		05/20/97					
	DATE ANALYZED --->	05/21/97		05/21/97					
	MATRIX ---------->	Water		Water					
	UNITS ---------->	MG/L		MG/L					
CAS #	Parameter	MEM21	VAL	MEM21	VAL				
9999900-02-4	Petroleum Hydrocarbons, TPH	1.	U	1.	U				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

TPH-DRO								
	SAMPLE ID ------->	002-G-12DA-03		002-G-12UA-03				
	ORIGINAL ID ----->	002G12DA03		002G12UA03				
	LAB SAMPLE ID --->	S772643*1		S772643*2				
	ID FROM REPORT -->	002G12DA03		002G12UA03				
	SAMPLE DATE ----->	05/08/97		05/08/97				
	DATE EXTRACTED -->	05/13/97		05/13/97				
	DATE ANALYZED --->	05/21/97		05/21/97				
	MATRIX ---------->	Water		Water				
	UNITS ---------->	MG/L		MG/L				
CAS #	Parameter	MEM21	VAL	MEM21	VAL			
9999900-02-6	Diesel Range Organics	0.1	U	0.22				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

TPH-GRO							
	SAMPLE ID ------->	002-G-12DA-03	002-G-12UA-03				
	ORIGINAL ID ----->	002G12DA03	002G12UA03				
	LAB SAMPLE ID --->	S772643*1	S772643*2				
	ID FROM REPORT -->	002G12DA03	002G12UA03				
	SAMPLE DATE ----->	05/08/97	05/08/97				
	DATE ANALYZED --->	05/21/97	05/21/97				
	MATRIX ---------->	Water	Water				
	UNITS ---------->	MG/L	MG/L				
CAS #	Parameter	MEM21 VAL	MEM21 VAL				
9999900-02-5	Gasoline Range Organics	0.036 U	0.036 U				

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

TSS							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE EXTRACTED -->	05/13/97					
	DATE ANALYZED --->	05/13/97					
	MATRIX ---------->	Water					
	UNITS ----------->	MG/L					
CAS #	Parameter	MEM21 VAL					
9999900-03-7	Total Suspended Solids (TSS)	41.					

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM21
Primary Sample Results After Validation

TURBIDITY							
	SAMPLE ID ------->	002-G-12UA-03					
	ORIGINAL ID ----->	002G12UA03					
	LAB SAMPLE ID --->	S772643*2					
	ID FROM REPORT -->	002G12UA03					
	SAMPLE DATE ----->	05/08/97					
	DATE EXTRACTED -->	05/09/97					
	DATE ANALYZED --->	05/09/97					
	MATRIX ---------->	Water					
	UNITS ---------->	NTU					
CAS #	Parameter	MEM21	VAL				
9999900-04-4	Turbidity	48.					

*** Validation Complete ***

Validated Data Summary Tables

SDG MEM36

NSA MID-SOUTH
SDG MEM36
Primary Sample Results After Validation

SW846-VOA			
	SAMPLE ID ------->	002-G-10DA-04	002-G-14DA-04
	ORIGINAL ID ----->	002G10DA04	002G14DA04
	LAB SAMPLE ID --->	S776481*7	S776481*8
	ID FROM REPORT -->	002G10DA04	002G14DA04
	SAMPLE DATE ----->	11/14/97	11/14/97
	DATE ANALYZED --->	11/20/97	11/20/97
	MATRIX ---------->	Water	Water
	UNITS ---------->	UG/L	UG/L

CAS #	Parameter	MEM36	VAL	MEM36	VAL
74-87-3	Chloromethane	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U
75-09-2	Methylene chloride	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U
75-27-4	Bromodichloromethane	5.	U	5.	U
108-88-3	Toluene	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U
127-18-4	Tetrachloroethene	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U
75-25-2	Bromoform	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U
67-64-1	Acetone	50.	U	50.	U
75-15-0	Carbon disulfide	5.	U	5.	U
78-93-3	2-Butanone (MEK)	25.	U	25.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U	25.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U
591-78-6	2-Hexanone	25.	U	25.	U
1330-20-7	Xylene (Total)	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U
1330-20-7	Xylene (Total)	NR		NR	

*** Validation Complete ***

Validated Data Summary Tables

SDG MEM30

NSA MID-SOUTH
SDG MEM30
Primary Sample Results After Validation

SW846-VOA													
	SAMPLE ID ------->	002-G-0029-04		002-G-0030-05		002-G-0031-05		002-G-0032-06		002-H-0032-06		002-G-0033-06	
	ORIGINAL ID ----->	002G002904		002G003005		002G003105		002G003206		002H003206		002G003306	
	LAB SAMPLE ID --->	S774694*1		S774694*2		S774694*3		S774711*1		S774711*4		S774711*2	
	ID FROM REPORT -->	002G002904		002G003005		002G003105		002G003206		002H003206		002G003306	
	SAMPLE DATE ----->	08/20/97		08/20/97		08/20/97		08/21/97		08/21/97		08/21/97	
	DATE ANALYZED --->	08/23/97		08/23/97		08/23/97		08/23/97		08/23/97		08/23/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM30	VAL	MEM30	VAL	MEM30	VAL	MEM30	VAL	MEM30	VAL	MEM30	VAL
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-09-2	Methylene chloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-27-4	Bromodichloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-88-3	Toluene	5.	U	1.	J	5.	U	5.	U	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
127-18-4	Tetrachloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-25-2	Bromoform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-64-1	Acetone	50.	U	50.	U	50.	U	50.	U	50.	U	50.	U
75-15-0	Carbon disulfide	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-93-3	2-Butanone (MEK)	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
591-78-6	2-Hexanone	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
1330-20-7	Xylene (Total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM30
Primary Sample Results After Validation

SW846-VOA

SAMPLE ID ------->	002-G-0034-04
ORIGINAL ID ----->	002G003404
LAB SAMPLE ID --->	S774711*3
ID FROM REPORT -->	002G003404
SAMPLE DATE ----->	08/21/97
DATE ANALYZED --->	08/23/97
MATRIX ---------->	Water
UNITS ---------->	UG/L

CAS #	Parameter	MEM30	VAL
74-87-3	Chloromethane	10.	U
75-01-4	Vinyl chloride	10.	U
74-83-9	Bromomethane	10.	U
75-00-3	Chloroethane	10.	U
75-35-4	1,1-Dichloroethene	5.	U
75-09-2	Methylene chloride	5.	U
75-34-3	1,1-Dichloroethane	5.	U
67-66-3	Chloroform	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon tetrachloride	5.	U
71-43-2	Benzene	5.	U
107-06-2	1,2-Dichloroethane	5.	U
79-01-6	Trichloroethene	5.	U
78-87-5	1,2-Dichloropropane	5.	U
75-27-4	Bromodichloromethane	5.	U
108-88-3	Toluene	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
127-18-4	Tetrachloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
75-25-2	Bromoform	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
67-64-1	Acetone	50.	U
75-15-0	Carbon disulfide	5.	U
78-93-3	2-Butanone (MEK)	25.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
591-78-6	2-Hexanone	25.	U
1330-20-7	Xylene (Total)	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U

*** Validation Complete ***

Validated Data Summary Tables

SDG MEM37

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

ALKALINITY							
	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	11/25/97	11/25/97	11/25/97			
	DATE ANALYZED --->	11/25/97	11/25/97	11/25/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	MG/L	MG/L	MG/L			
CAS #	Parameter	MEM37	MEM37	MEM37			
471-34-1	Alkalinity (as CaCO3)	220.	330.	510.			

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

BOD5	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	11/19/97	11/19/97	11/19/97			
	DATE ANALYZED --->	11/19/97	11/19/97	11/19/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	MG/L	MG/L	MG/L			
CAS #	Parameter	MEM37	MEM37	MEM37			
9999900-03-8	Biochemical Oxygen Demand (5-day)	2. U	3.1	2. U			

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

CL & SO4							
	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	12/01/97	12/01/97	12/01/97			
	DATE ANALYZED --->	12/01/97	12/01/97	12/01/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	MG/L	MG/L	MG/L			
CAS #	Parameter	MEM37	MEM37	MEM37			
16887-00-6	Chloride	8.	59.	120.			
14808-79-8	Sulfate	5. U	5. U	72.			

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

COD							
	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	11/26/97	11/26/97	11/26/97			
	DATE ANALYZED --->	12/01/97	12/01/97	12/01/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	MG/L	MG/L	MG/L			
CAS #	Parameter	MEM37	MEM37	MEM37			
9999900-04-0	Chemical Oxygen Demand	20. U	20. U	20. U			

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

FE & MN								
	SAMPLE ID ------->	002-G-02DA-04		002-G-02UA-04		002-G-13UA-04		
	ORIGINAL ID ----->	002G02DA04		002G02UA04		002G13UA04		
	LAB SAMPLE ID --->	S776544*1		S776544*2		S776544*3		
	ID FROM REPORT -->	002G02DA04		002G02UA04		002G13UA04		
	SAMPLE DATE ----->	11/18/97		11/18/97		11/18/97		
	DATE EXTRACTED -->	11/21/97		11/21/97		11/21/97		
	DATE ANALYZED --->	11/24/97		11/24/97		11/24/97		
	MATRIX ---------->	Water		Water		Water		
	UNITS ---------->	UG/L		UG/L		UG/L		
CAS #	Parameter	MEM37	VAL	MEM37	VAL	MEM37	VAL	
7439-89-6	Iron	11900.		9780.		6390.		
7439-96-5	Manganese	106.		1860.		1570.		

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

HARDNESS							
	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	12/08/97	12/08/97	12/08/97			
	DATE ANALYZED --->	12/08/97	12/08/97	12/08/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	MG/L	MG/L	MG/L			
CAS #	Parameter	MEM37	MEM37	MEM37			
9999900-03-3	Hardness as CaCO3	230.	340.	420.			

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

HPC							
	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	11/19/97	11/19/97	11/19/97			
	DATE ANALYZED --->	11/19/97	11/19/97	11/19/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	CFU/M	CFU/M	CFU/M			
CAS #	Parameter	MEM37	MEM37	MEM37			
9999900-03-6	Standard Plate Count	61.	100.	70.			

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

KJELDAHL							
	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	11/21/97	11/21/97	11/21/97			
	DATE ANALYZED --->	11/24/97	11/24/97	11/24/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	MG/L	MG/L	MG/L			
CAS #	Parameter	MEM37	MEM37	MEM37			
9999000-72-6	Kjeldahl Nitrogen, Total	2.3	2.9	0.73			

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

METHANE								
	SAMPLE ID ------->	002-G-02DA-04		002-G-02UA-04		002-G-13UA-04		
	ORIGINAL ID ----->	002G02DA04		002G02UA04		002G13UA04		
	LAB SAMPLE ID --->	S776544*1		S776544*2		S776544*3		
	ID FROM REPORT -->	002G02DA04		002G02UA04		002G13UA04		
	SAMPLE DATE ----->	11/18/97		11/18/97		11/18/97		
	DATE EXTRACTED -->	11/24/97		11/24/97		11/24/97		
	DATE ANALYZED --->	11/24/97		11/24/97		11/24/97		
	MATRIX ---------->	Water		Water		Water		
	UNITS ---------->	UG/L		UG/L		UG/L		
CAS #	Parameter	MEM37	VAL	MEM37	VAL	MEM37	VAL	
74-82-8	METHANE	47.	U	110.		47.	U	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

NITRATE							
	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	11/20/97	11/20/97	11/20/97			
	DATE ANALYZED --->	11/20/97	11/20/97	11/20/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	MG/L	MG/L	MG/L			
CAS #	Parameter	MEM37	MEM37	MEM37			
14797-55-8	Nitrate (as N)	0.05 U	0.05 U	0.069			

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

SW846-VOA													
	SAMPLE ID ------->	002-G-01DA-04		002-G-02DA-04		002-G-02UA-04		002-G-05DA-04		002-G-08DA-04		002-G-13UA-04	
	ORIGINAL ID ----->	002G01DA04		002G02DA04		002G02UA04		002G05DA04		002G08DA04		002G13UA04	
	LAB SAMPLE ID --->	S776544*7		S776544*1		S776544*2		S776544*8		S776515*4		S776544*3	
	ID FROM REPORT -->	002G01DA04		002G02DA04		002G02UA04		002G05DA04		002G08DA04		002G13UA04	
	SAMPLE DATE ----->	11/18/97		11/18/97		11/18/97		11/18/97		11/17/97		11/18/97	
	DATE ANALYZED --->	11/28/97		11/28/97		11/28/97		11/28/97		11/26/97		11/28/97	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	MEM37	VAL	MEM37	VAL	MEM37	VAL	MEM37	VAL	MEM37	VAL	MEM37	VAL
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-09-2	Methylene chloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-27-4	Bromodichloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-88-3	Toluene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
127-18-4	Tetrachloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-25-2	Bromoform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-64-1	Acetone	50.	UJ	50.	UJ	50.	UJ	50.	UJ	50.	U	50.	UJ
75-15-0	Carbon disulfide	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-93-3	2-Butanone (MEK)	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
591-78-6	2-Hexanone	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
1330-20-7	Xylene (Total)	5.	UJ	5.	UJ	5.	UJ	5.	UJ	2.4	J	5.	UJ
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
1330-20-7	Xylene (Total)	NR		NR		NR		NR		NR		NR	

*** Validation Complete ***

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

TDS							
	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	11/20/97	11/20/97	11/20/97			
	DATE ANALYZED --->	11/21/97	11/21/97	11/21/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	MG/L	MG/L	MG/L			
CAS #	Parameter	MEM37	MEM37	MEM37			
9999900-07-2	Total Dissolved Solids (TDS)	240.	440.	800.			

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

TOC							
	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	11/20/97	11/20/97	11/20/97			
	DATE ANALYZED --->	11/21/97	11/21/97	11/21/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	MG/L	MG/L	MG/L			
CAS #	Parameter	MEM37	MEM37	MEM37			
9999900-01-4	Total Organic Carbon (TOC)	1. U	1.7	1.5			

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

TOTAL PHOS							
	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	11/21/97	11/21/97	11/21/97			
	DATE ANALYZED --->	11/24/97	11/24/97	11/24/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	MG/L	MG/L	MG/L			
CAS #	Parameter	MEM37	MEM37	MEM37			
22569-71-7	Total phosphorus	1.2	0.15	0.54			

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

TSS							
	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	11/21/97	11/21/97	11/21/97			
	DATE ANALYZED --->	11/24/97	11/24/97	11/24/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	MG/L	MG/L	MG/L			
CAS #	Parameter	MEM37	MEM37	MEM37			
9999900-03-7	Total Suspended Solids (TSS)	450.	650.	380.			

NSA MID-SOUTH
SDG MEM37
Primary Sample Results After Validation

TURBIDITY	SAMPLE ID ------->	002-G-02DA-04	002-G-02UA-04	002-G-13UA-04			
	ORIGINAL ID ----->	002G02DA04	002G02UA04	002G13UA04			
	LAB SAMPLE ID --->	S776544*1	S776544*2	S776544*3			
	ID FROM REPORT -->	002G02DA04	002G02UA04	002G13UA04			
	SAMPLE DATE ----->	11/18/97	11/18/97	11/18/97			
	DATE EXTRACTED -->	11/19/97	11/19/97	11/19/97			
	DATE ANALYZED --->	11/19/97	11/19/97	11/19/97			
	MATRIX ---------->	Water	Water	Water			
	UNITS ---------->	NTU	NTU	NTU			
CAS #	Parameter	MEM37	MEM37	MEM37			
9999900-04-4	Turbidity	240.	240.	190.			

Validated Data Summary Tables

SDG MEM38