PHASE 3 INVESTIGATION REPORT
SOUTH AREA ORC PILOT STUDY

AMERICAN CHEMICAL SERVICE NPL SITE
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ACRONYMS AND ABBREVIATIONS

ACS	American Chemical Services, Inc.
amsl	Above mean sea level
BETX	Benzene, ethylbenzene, toluene, and xylenes
bgs	below ground surface
COD	Chemical Oxygen Demand
°C	Degrees Celcius
DRO	Diesel Range Organics
DO	Dissolved oxygen
DOC	Dissolved Organic Carbon
DPT	Direct push technology
ETX	Ethylbenzene, toluene, and xylenes
GRO	Gasoline Range Organics
IDEM	Indiana Department of Environmental Management
ISVE	In-situ soil vapor extraction
µg/l	Microgram per liter
LTGMP	Long Term Groundwater Monitoring Plan
mg/l	Milligram per liter
mg/kg	Milligram per kilogram
MNA	Monitored Natural Attenuation
NAPL	Non-aqueous phase liquid
North Area	Area extending north and west of Site
NPL	National Priorities List
ORC	Oxygen Release Compound®
ORP	Oxidation-reduction potential
PCE	Tetrachloroethene
PGCS	Perimeter Groundwater Containment System
PID	Photo-ionization detector
QAPP	Quality Assurance Project Plan
RD/RA	Remedial Design/Remedial Action
SOP	Standard Operating Procedure
South Area	Area extending south and east of Site
TCE	Trichloroethene
TKN	Total Kjeldhal Nitrogen
TOC	Total Organic Carbon
U.S. EPA	United States Environmental Protection Agency
USCS	United Soil Classification System
VOC	Volatile organic compound

1.0 INTRODUCTION

Several remedial actions have been completed at the American Chemical Service (ACS) National Priorities List (NPL) Site in Griffith, Indiana. These include a 4,400-foot barrier wall around the Site, a perimeter groundwater containment system (PGCS) on the northwest end of the Site, and improved covers on the Site surface. An expanded treatment facility designed to remediate the wastes currently contained within the barrier wall and underneath the Site covers is currently in the testing phase. During the design and implementation of these remedial actions, a series of groundwater investigations and a number of groundwater sampling events were completed in the shallow groundwater outside of the barrier wall. In addition to providing data to assess the performance of remedial activities at the Site, this data has been collected to characterize the extent of impacts outside the barrier wall and determine an appropriate remedy for this groundwater.

The groundwater data have been collected under the Long Term Groundwater Monitoring Plan (LTGMP), originally developed in 1997, and revised in 1998 and again in 2002. The United States Environmental Protection Agency (U.S. EPA) and the Indiana Department of Environmental Management (IDEM) have approved each modification. The elements of the LTGMP include sampling locations, sampling frequency, and analytical parameters.

The groundwater monitoring program has been focused on two contaminants of concern, benzene and chloroethane, and on the main two locations where they have been detected in the upper aquifer. One area extends north and west from the Site (North Area) and the other extends to the southeast (South Area). The Conceptual Work Plan (Montgomery Watson, 1998) proposed a pilot study to evaluate the potential for enhanced bioremediation as the remedial solution for the impacted groundwater existing outside of the barrier wall. The U.S. EPA approved the work plan, and the pilot study using an application of Oxygen Release Compound® (ORC) was underway when the Final Remedial Design Report for the Final Remedy was completed and approved by the Agencies.

The ORC Pilot Study was initiated in 1999, and has undergone several steps, or phases, of work since that time. The first application of ORC was completed in the North Area in 1999 (Phase 1). A second application was completed in the South Area in 2001 (Phase 2). Extensive monitoring to evaluate the progress of the treatment was conducted following each application. The results of the ORC application in the South Area showed positive results but also indicated that elevated concentrations of VOCs existed upgradient of the ORC arrays. Since the location of the barrier wall in the South Area was constrained due to the presence of Colfax Avenue and a high-pressure underground gas pipeline, a small amount of organic contaminants may exist immediately outside of the barrier wall in the South Area. This material may then act as a continuing source for shallow groundwater south of the Site. Additional data was needed to determine if a secondary source existed, and if ORC (or another groundwater remedy) was suitable for treating groundwater in the South Area.

During the Phase 3 Investigation activities, MWH collected soil and groundwater samples in and around the South Area ORC arrays and in areas suspected of having residual organic

contaminants. The results of these activities and a recommendation for remedial treatment for shallow groundwater in the South Area are presented in the following sections of this report:

- Section 1 provides an introduction and background to the ORC Pilot Study,
- Section 2 describes the field data collection activities undertaken during the Phase 3 Investigation,
- Section 3 provides the results and evaluation of the Phase 3 Investigation,
- Section 4 presents a recommendation for remedial action in shallow groundwater in the South Area, and
- Section 5 provides the references for the report.

Tables, figures, and appendices are presented at the end of this report.

1.1 BACKGROUND

A thorough background description of investigations completed at the site was presented in the South Area ORC Pilot Study Report (Draft, September 2002). A brief outline is presented below:

- 1996: The "Tracer" Investigation confirmed and delineated shallow groundwater impacts of benzene and chloroethane in two primary areas: a "North" area near the railroad tracks north of the Site, and a "South" area near the intersection of Reder Road and Colfax Avenue.
- 1997 to 1999: The Monitored Natural Attenuation (MNA) study was conducted in shallow aquifer monitoring wells around the Site. This study indicated that biodegradation is occurring and was likely responsible for the stabilization of the plume.
- 1998: The Conceptual Work Plan proposed a pilot study to evaluate the use of enhanced bioremediation as the remedial solution for impacts to shallow groundwater in the North and South Areas. The U.S. EPA approved the concept and ORC was chosen as a technology to evaluate.
- March 1999 to June 2000: After being denied access to Town of Griffith property in the South Area, MWH conducted an ORC pilot study in the North Area (Phase 1). The results are discussed in the *ORC Pilot Study Report* submitted to U.S. EPA and IDEM in November 2000. A total of 4,400 pounds of ORC was applied in two arrays (Array 1 and Array 2) as shown in Figure 1. Seasonal variability in observed volatile organic compound (VOC) concentrations made interpretation of the results difficult.

In general, the results from the North Area pilot study were positive but not conclusive. Therefore a second Pilot Study was recommended.

- April to November 2001: After resolving access issues, MWH conducted an ORC pilot study in the South Area (Phase 2). The results from the South Area study are discussed in the *South Area ORC Pilot Study Evaluation* submitted to U.S. EPA and IDEM in September 2002. A total of 11,280 pounds of ORC was applied in three arrays (Array 3 [North and South], Array 4, and Array 5) located near Colfax Avenue and Reder Road as shown in Figure 2. Results were positive, but increasing concentrations at some monitoring points implied that organic source material existed upgradient of the ORC arrays.

In both the North and South Areas, high variability in benzene concentrations has been observed in samples collected from monitoring locations close to the original source (MW48, MW49, MW06, and ORCPZ102). There are several scenarios to explain the observed variability in the South Area. One scenario would be that there is a residual plume of dissolved VOCs existing in groundwater outside of the barrier wall, and seasonal variations in infiltration and recharge account for the fluctuation in benzene concentrations. The second scenario would be that a secondary source exists just outside of the barrier wall. This secondary source could be an oily residue that was cut off from the primary source during installation of the barrier wall, and now releases benzene to groundwater. The concentrations would vary annually depending upon dilution and dispersion, which are related to water table elevation, recharge and flow direction.

In order to determine the appropriate remedial approach it is necessary to first define and delineate the source of the plume. If the first scenario is representative of site conditions, a full-scale ORC treatment would be effective in significantly reducing the benzene concentration in the shallow groundwater. This is because the bulk of the oxygen released by the ORC would be consumed in the destruction of the benzene dissolved in groundwater.

If the second scenario is an accurate representation of the Site conditions, it is unlikely that ORC alone would be cost effective in eliminating the groundwater plume. This is because the source area contains an organic residue, of which only a small percentage is benzene. If ORC were used, it would be consumed in the breakdown of any organic residue, not just the benzene. As long as the organic residue exists, it will continue to emit benzene. Since the MCL for benzene is very low (5 µg/l) it would take a very large amount of ORC to reduce the organic residue to a degree that it no longer emits benzene at levels above the MCL.

Data from groundwater monitoring and Phase 1 and 2 of the ORC Pilot Study were insufficient to determine which of the above scenarios best represented the site conditions in the South Area. Therefore, the Phase 3 Investigation Work Plan was developed to collect soil and groundwater data sufficient to:

- Determine whether ORC would be the cost effective method to proceed with an enhanced monitored natural attenuation groundwater remedy,

- Develop an alternate approach to groundwater mitigation, if necessary, and
- Recommend a cost-effective final remedy for the upper aquifer groundwater that will be adequately protective of human health and the environment.

Additionally, the Phase 3 investigation was important to determine if a secondary source exists in the upper aquifer outside the barrier wall in the South Area.

2.0 PHASE 3 INVESTIGATION FIELD ACTIVITIES

The Phase 3 Investigation scope of work consisted of three sampling activities: 1) groundwater sampling from three existing monitoring wells in the South Area, 2) groundwater sampling from direct push technology (DPT) probeholes, and 3) soil sampling using DPT methods. A detailed description of these activities is provided below.

2.1 TASK 1 – GROUNDWATER SAMPLING FROM EXISTING WELLS

Additional groundwater sampling was conducted at monitoring wells MW06, ORCPZ102, and ORCPZ103 to measure the continuing effects of the ORC applied during Phase 2 of the pilot study and to assess the chemical environment of the upper aquifer in the vicinity. The locations of these sampling points are shown in Figure 3. These sampling points are located within and downgradient of ORC Array 3 (North and South), and also are downgradient of the DPT sampling points collected in Task 2 (see Section 2.2 below). Two rounds of groundwater sampling were conducted at these three monitoring wells. One was conducted in September 2002, concurrent with the quarterly groundwater monitoring event and the other was conducted in December 2002. The objective with these additional rounds of sampling was to determine if benzene concentrations had rebounded to the "pre-ORC application" concentrations.

The groundwater samples were collected in accordance with the groundwater sampling Standard Operating Procedure (SOP) in the approved LTGMP. Groundwater was purged at low-flow rates (0.1 to 0.5 liters per minute) until field parameters had stabilized. The field parameters measured include temperature, pH, conductivity, dissolved oxygen (DO), turbidity, and oxidation-reduction potential (ORP).

Groundwater samples were collected in laboratory-supplied, contaminant-free containers. Following sample collection, the sample containers were immediately placed on ice in coolers and refrigerated at 4 degrees Celcius (°C). Chain-of-Custody forms were prepared to track the transfer of samples from the site to the laboratories. The samples were sent via overnight carrier to CompuChem laboratory. The samples collected in September 2002 were analyzed for VOCs, and the samples collected during December 2002 were analyzed for an expanded list of parameters, including organic compounds (VOCs, diesel range organics [DRO], gasoline range organics [GRO]), and several natural attenuation parameters (dissolved organic carbon [DOC], chemical oxygen demand [COD], nitrate, nitrite, ammonia-n, total Kjedahl nitrogen (TKN), total and dissolved iron and manganese, sulfate, methane, ethane, and ethene). All analyses were conducted in accordance with the approved Quality Assurance Project Plan (QAPP). The parameters analyzed at each well during Task 1 activities are summarized in Table 1.

2.2 TASK 2 – DPT GROUNDWATER SAMPLING

To test for potential residual effects from the ORC application, one-time groundwater samples were collected via DPT boreholes from within and surrounding ORC Array 5. This is the location where the highest benzene concentrations have been detected in previous investigations.

Groundwater samples were collected via DPT in December 2002 at seven locations within and around ORC Array 5. The locations of these sampling points (labeled DPT-01 through DPT-07) are shown in Figure 3. Groundwater flow through this area is generally to the southwest (see Figure 2), and thus flows through Array 5, Array 3 North, and then Array 3 South. Samples were collected at three locations upgradient of Array 5 (DPT-01, DPT-02, DPT-03), three locations within the Array 5 (DPT-04, DPT-05, DPT-06), and one location downgradient of Array 5 and Array 3 North (DPT-07).

Groundwater samples were collected following the general procedures outlined in the groundwater sampling SOP in the approved LTGMP. A 2.5-foot stainless steel screen (contained in a sheath) was attached to four-foot long hollow rods and pushed by DPT to the middle of the saturated zone in the upper aquifer, a depth of approximately 25 feet. Once at the required depth, the sheath was pulled back to expose the screen to the aquifer. A peristaltic pump and clean, unused polyethylene tubing were used to extract groundwater from the screened interval. Groundwater was purged at low-flow rates (0.1 to 0.5 liters per minute) until field parameters had stabilized. The field parameters measured include temperature, pH, conductivity, DO, turbidity, and ORP. Turbidity was recorded but not used in the stabilization requirements. All DPT rods and screens were decontaminated between each sampling point.

A total of eight groundwater samples were collected at the seven locations. At each location, a groundwater sample was collected from between 23 and 26 feet below ground surface (bgs). At DPT-07, an additional sample (DPT-07B) was collected from between 27 and 30 feet bgs. This depth was selected to be at the bottom of the upper aquifer.

Groundwater samples were collected in laboratory-supplied, contaminant-free containers. Following sample collection, the sample containers were immediately placed on ice in coolers and refrigerated at 4°C. Chain-of-Custody forms were prepared to track the transfer of samples from the site to the laboratories. The samples were sent via overnight carrier to CompuChem laboratory.

The samples collected between 23 and 26 feet bgs were analyzed for a range of organic compounds and natural attenuation parameters. The organic analyses included VOCs, DRO, and GRO. The natural attenuation parameters included DOC, COD, nitrate, nitrite, ammonia-n, TKN, total and dissolved iron and manganese, sulfate, methane, ethane, and ethene. Sample DPT-07B, collected from 27 to 30 feet bgs was analyzed for VOCs only. All analyses were conducted in accordance with the approved QAPP. The parameters analyzed at each well during Task 2 activities are summarized in Table 1.

2.3 TASK 3 – DPT SOIL SAMPLING

From the data accumulated through routine monitoring and the previous investigations in the area, it appeared that the source for the South Area groundwater plume was in the general vicinity of the intersection of Colfax Avenue and Reder Road. The Phase 2 ORC sampling results indicated that there might be organic compounds in the aquifer matrix which were not detected in groundwater samples, yet which have the potential to act as a source and have an affect on the remedial approach selected. So the objective of Task 3 was to collect samples of the aquifer matrix (soil) and analyze it for contaminants as well as for other organic compounds in the gasoline and diesel range.

Nine soil borings were completed via DPT methods to collect samples of aquifer matrix across this potential source area. The locations of these borings are shown in Figure 4. Soil samples were collected by DPT in four-foot long acetate sleeves. Upon retrieval, the sleeves were cut open to expose the soil sample, which was screened using a photo-ionization detector (PID). The interval containing either the highest PID reading or showing visible evidence of contamination was selected at each boring for laboratory analysis. In several borings, additional sample intervals were also submitted for laboratory analysis because of multiple indications. Each soil boring was logged using the United Soil Classification System (USCS).

Fourteen samples were collected from the nine soil borings. Ten samples were collected from the water table interface (top of upper aquifer). Two samples were collected from the middle of the upper aquifer saturated zone and two samples were collected from the sand-clay interface at the bottom of the upper aquifer.

The soil samples were collected in laboratory-supplied, contaminant-free containers. Samples for VOC analysis were collected in EnCore sample devices per SW-846 Method 5035. Following sample collection, the sample containers were immediately placed on ice in coolers and refrigerated at 4°C. Chain-of-Custody forms were prepared to track the transfer of samples from the site to the laboratories. The samples were sent via overnight carrier to CompuChem laboratory.

The soil samples were analyzed for VOCs, DRO, GRO, and total organic carbon (TOC). The soil VOC analyses were conducted in accordance with the procedures outlined in Attachment 1 of the *Work Plan for Phase 3 Investigation* (MWH, 2002). Table 2 summarizes the identification, collection depth, and analytical parameters for each sample collected during Task 3 activities.

3.0 RESULTS OF PHASE 3 INVESTIGATION

The purpose of the Phase 3 Investigation was to collect sufficient data to evaluate the effects of the ORC application in the South Area, and to determine if a secondary source exists in the upper aquifer outside the barrier wall in the South Area. This was achieved by collecting soil and groundwater samples from within and upgradient of the Phase 2 ORC arrays, both directly using DPT and from existing monitoring wells.

3.1 GROUNDWATER SAMPLING RESULTS

Groundwater samples were collected in Tasks 1 and 2 specifically to identify and evaluate residual effects from the ORC, to assess the chemical environment of the groundwater in the potential secondary source area, and to delineate areas of organic residue. Three data parameters were collected; groundwater field parameters, organic analytical data, and natural attenuation parameter data.

3.1.1 Field Parameter Results

Groundwater samples were collected using low flow sampling protocols from both the DPT boreholes and the monitoring wells. In the low flow protocol, water is extracted from the well (or borehole) and a series of field measurements are made periodically and recorded. When those field parameters stabilize, it is presumed that the water represents groundwater from the aquifer and the sample is collected. Table 3 contains the final readings for each field parameter that was measured and recorded during the purging step at the DPT and monitoring well sampling locations. Besides showing that the purging was complete, the results are useful indicators of the overall geochemical condition of the shallow aquifer in the ORC application area. The values for DO and ORP parameters are shown on a map of the area in Figure 5.

The DO values are relatively higher upgradient of Array 5 (4.8 milligram per liter [mg/l] to 7.3 mg/l), and decrease slightly within (3.5 mg/l to 5.3 mg/l) and downgradient of Arrays 3 and 5 (0.0 mg/l to 3.5 mg/l). The ORP values are negative upgradient of Array 5, and increase slightly at points within and downgradient of Array 5. ORP values are higher further downgradient at wells ORCPZ102, ORCPZ103 and MW06.

The DO and ORP values appear to indicate that groundwater in the shallow aquifer becomes more reduced as it flows from northeast to southwest through the study area. However, DO and ORP values are slightly higher at DPT-04 than at nearby points DPT-03, DPT-05, and DPT-06, and ORP values increase at downgradient wells ORCPZ103 and MW06. These slight increases may be the residual effects of oxygen released from the ORC applications, however the effects are very minor.

3.1.2 Organic Compound Results

The organic results (VOCs, DRO, GRO) for groundwater samples collected in Tasks 1 and 2 are summarized in Tables 4 and 5, respectively. The laboratory analytical reports and validation summaries for these results are compiled in Appendix A.

Benzene, ethylbenzene, toluene, and xylenes (BETX), and chloroethane were the most commonly detected VOCs in groundwater in the study area. Benzene, ethylbenzene, and xylenes were detected at the highest concentrations. Isopropopylbenzene, 1,2-dichlorobenzene, chlorobenzene, and methylcyclohexane were also commonly detected but at much lower concentrations.

The concentrations of BETX compounds at the Task 1 and Task 2 groundwater sampling points are shown on a map of the South Area in Figure 6. Upgradient of ORC Array 5, BETX values are very low (<5 microgram per liter [µg/l] at DPT-01 and DPT-02). The highest detections of BETX compounds were observed at DPT-04, DPT-05, DPT-06, DPT-07, and ORCPZ102. Downgradient of Array 3, BETX concentrations at ORCPZ103 and MW06 are much lower. Results from groundwater sampled near the bottom of the upper aquifer (DPT-07B) indicate that VOC concentrations are approximately twice the concentration of the sample from the middle of the upper aquifer at this location (DPT-07).

The hatched areas on Figure 6 outline concentrations of benzene in red and ethylbenzene, toluene, and xylenes (ETX) in blue. The areas of highest benzene concentrations do not correlate directly with the areas of highest ETX concentrations. The highest ETX concentrations were observed at DPT-04, DPT-06, and DPT-07, and decrease to below detection limits downgradient of this area (ORCPZ103 and MW06). The highest benzene impacts seen at DPT-07 and ORCPZ102 seem to be located slightly downgradient of the highest ETX concentrations.

Concentrations of DRO and GRO are shown on a map of the South Area in Figure 7. Upgradient of Array 5, values of DRO and GRO are relatively low, but are higher near the former ORC array. The highest detections of DRO and GRO in groundwater occurred in Array 3 North and Array 5 at sampling points DPT-04, DPT-05, DPT-06, and DPT-07. In this area, concentrations of GRO in groundwater were generally much higher (40,000 µg/l) than those of DRO (21,000 µg/l). Concentrations of DRO and GRO are significantly lower immediately downgradient of Array 3 (ORCPZ103 and MW06).

3.1.3 Natural Attenuation Parameter Results

The laboratory results for natural attenuation parameters in groundwater (Tasks 1 and 2) are summarized in Table 6. Overall, the results indicate that the upper aquifer near the South Area is in a reduced condition compared to areas outside of the affected area. Nitrate and nitrite levels were generally below detection limits, indicating that denitrification may have occurred. Sulfate concentrations were below detection limits at all sampling locations except at upgradient locations DPT-01 and DPT-02 and downgradient locations ORCPZ102, ORCPZ103, and MW06. This indicates that conditions were likely favorable for sulfate-reducing microbes to utilize the existing sulfate to break down organic compounds. Iron and manganese results were mostly dissolved, which indicates that the metals were nearly entirely in their reduced state (iron and manganese are more soluable when reduced than in their oxidized state). Iron and manganese results at downgradient locations ORCPZ103 and MW06 showed a slightly lower concentration indicating less reducing conditions. These results show that areas with high VOC concentrations are strongly reduced, and that areas upgradient or downgradient are less reduced.

The presence of methane indicates that conditions in the groundwater environment may have been anaerobic enough for methanogenesis to occur. The highest detections of methane in groundwater were located near DPT-04, DPT-07 and ORCPZ102. These concentrations show a similar pattern to elevated benzene concentrations. Figure 8 shows the methane detections on a map of the South Area.

The DOC and COD results generally correlate with the areas of highest organic concentrations. Concentrations of DOC were highest in the groundwater sample collected at DPT-06, and overall were higher near ORC Array 5. The highest COD values were also located in sample points DPT-04 and DPT-06, and in wells ORCPZ102, ORCPZ103, and MW06. These higher values of COD indicate an increased demand for oxygen in these areas.

3.2 SOIL SAMPLING RESULTS

3.2.1 Soil Observations

The soils observed during the Task 3 activities in the South Area were logged following the USCS methods. The soil boring logs are provided in Appendix B. The soils generally consisted of yellow to light brown fine to medium grained sands from the ground surface to the water table, encountered during this investigation near 22 feet bgs. This depth corresponds to approximately 628 feet above mean sea level (amsl). Lenses of gravel and gravelly sands were encountered near the water table, and were usually one foot or less in thickness. No single gravel lens or gravelly sand layer could be interpreted as continuous across the area. From the water table to the clay aquitard, the sands were generally gray or light gray in color, and were also fine to medium grained in size. The clay aquitard was encountered between 28 and 36 feet bgs (616 to 620 feet amsl). It consisted of a very stiff, gray silty clay.

No soil discoloration (staining) or PID readings above background levels were observed in the upper 16 feet of soil in any of the soil borings. However, visual staining of the soils and high PID readings were observed at certain intervals between 16 feet bgs and the water table in most of the borings. Borings SDPT-03, SDPT-04, SDPT-07, SDPT-08, and SDPT-09 had the darkest staining and highest PID readings, which generally occurred in a four-foot interval near the water table. Black, oily non-aqueous phase liquid (NAPL) was also observed in a thin gravel seam near the water table at borings SDPT-03 and SDPT-08. The largest vertical range in staining was observed in borings SDPT-03 (16 to 22 feet bgs) and SDPT-07 (18 to 22 feet bgs). These intervals correspond to an interval between 628 and 634 feet amsl. No visual staining was observed directly above the clay aquitard (at the bottom of the upper aquifer), indicating that the majority of the staining occurs near the water table, and thus the majority of the soil samples submitted for laboratory analysis were from the water table zone.

3.2.2 Organic Results

The VOC results for soil samples collected during Task 3 activities are summarized in Table 7. The laboratory analytical reports and validation summaries for these results are compiled in Appendix A.

Several VOCs were detected in the soil samples collected for analysis. The most commonly detected VOCs included BETX, isopropopylbenzene, 1,2-dichlorobenzene, chlorobenzene, and methylcyclohexane. Chloroethane was only detected in one soil sample. The VOCs detected at the highest concentrations were ethylbenzene and xylenes. The high concentrations of ethylbenzene and xylenes resulted in high detection limits for other compounds of interest (benzene) in several samples. Concentrations of isopropopylbenzene, 1,2-dichlorobenzene, and methylcyclohexane were significantly higher in soil than in groundwater from the same general area.

The concentrations of BETX in soil samples collected near the water table are shown on a map of the South Area in Figure 9. Results from samples collected from soil borings SDPT-03, SDPT-04, and SDPT-07 contained the highest concentrations of BETX near the water table. Concentrations of BETX in these samples are one to two orders of magnitude higher than surrounding samples collected at the water table.

The BETX concentrations in samples collected below the water table were one to two orders of magnitude lower than in samples collected at the water table. Figure 10 shows the BETX concentrations in soil samples collected below the water table on a map of the South Area. At SDPT-03, concentrations of total BETX were about 27,000 micrograms per kilogram (µg/kg) near the bottom of the upper aquifer, compared to 610,000 µg/kg near the water table. At SDPT-05, BETX concentrations were nearly twice as high near the bottom of the upper aquifer than near the water table, but were still significantly lower than concentrations detected near the water table at SDPT-03, SDPT-04, and SDPT-07.

The VOC detections in the study area consisted primarily of BETX, and the highest concentrations occurred near the water table in the vicinity of SDPT-03, SDPT-04, and SDPT-07. Concentrations of BETX in samples collected in surrounding borings and from below the water table were significantly lower.

3.2.3 Additional Soil Sampling Results

Results for DRO, GRO, and TOC analyses in soil samples collected during Task 3 activities are provided in Table 8. Figure 11 displays the concentrations of DRO and GRO on a map of the South Area. The highest concentrations of DRO and GRO were detected in samples collected near the water table at borings SDPT-03 and SDPT-04. In these samples, DRO concentrations ranged from 450,000 µg/kg to 2,100,000 µg/kg and GRO concentrations ranged from 220,000 µg/kg to 920,000 µg/kg. High concentrations were also detected near the water table at SDPT-08. Concentrations of DRO and GRO in other samples collected near the water table were significantly lower, as DRO concentrations ranged between 6,200 µg/kg and 67,000 µg/kg and GRO concentrations ranged from below detection limits to 13,000 µg/kg. Additionally, concentrations of DRO and GRO in samples collected below

the water table were significantly lower. Similar to the samples with the highest BETX concentrations, the samples with the highest concentrations of DRO and GRO occurred near the water table in the vicinity of borings SDPT-03, SDPT-04, and SDPT-08.

The TOC results in soil confirm that very high levels of organic carbon are present in the soil. The average value of TOC concentrations observed in the soils collected near the water table (5,990 milligrams per kilogram [mg/kg]) were approximately twice the average TOC concentration detected in soils collected below the water table (2,180 mg/kg). The values of TOC were also much higher than the combined VOC, DRO, and GRO results for the same sample. These high levels of organic material in the soil would generate a very large oxygen demand in the subsurface.

3.3 SUMMARY AND EVALUATION OF RESULTS

The soil and groundwater data indicate that there are significant amounts of organic contaminants near the water table outside of the barrier wall in the South Area. This material contains BETX, GRO, and DRO compounds, with minor amounts of other VOCs. Chlorinated solvents, such as tetrachloroethene (PCE) and trichloroethene (TCE), do not appear to be a major part of this material. The concentrations of GROs in soil and groundwater are generally much higher than the total VOC results, indicating that there are likely other organic compounds present in the shallow soils and groundwater that are not represented in VOC analyses.

Historical water levels from wells and piezometers near the South Area are listed in Table 9. These show that the water table in this area historically ranges between 634 and 630 feet amsl. The majority of the VOCs, DRO, and GRO were detected in an interval between 634 and 628 feet amsl, which indicates that these organic contaminants comprise a smear zone near the water table in the upper aquifer. The elevation of the water table observed during the soil sampling activities in February 2003 was about 628 feet asml, which explains why most of the organic contaminants were found to be above the water table during the investigation.

Figure 12 presents a conceptual cross-section across Colfax Avenue from the Off-Site Area to the residence at the corner of Colfax and Reder Road. This figure illustrates the correlation between the historical range in water table data and the observed smear zone. Based on the thickness of stained soils in other borings, this smear zone likely diminishes away from boring SDPT-03 and the barrier wall.

This Phase 3 investigation has identified and characterized this smear zone as a likely secondary source that exists in the subsurface outside of the barrier wall in the South Area. This source material consists of VOCs (mostly BETX), DRO, and GRO, and occurs primarily in a three to six foot interval near the water table between 628 and 634 feet amsl. These conclusions indicate that the source of the VOC plume is consistent with Scenario 2 described in Section 1.1 on Page 3.

Since high concentrations were detected in samples from northern-most borings SDPT-04 and SDPT-08, the source area likely extends just to the north of these borings, and extends southward to just north of SDPT-02 and SDPT-06. This area of organic contamination defined by the soil boring data occupies an area approximately 80 feet wide and 200 feet long. Thus, the total volume of the source area is approximately 96,000 cubic feet.

This source area has likely been feeding the VOC plume south of the site. The fluctuations in historical benzene concentrations observed at monitoring well MW06 may be directly related to fluctuation in the water table. Figure 13 presents a graph of historical groundwater elevations and benzene concentrations at MW06 in the South Area, and MW48 and MW49 in the North Area. Fluctuations in the water table are consistent in the North and South Areas; however, the benzene concentration fluctuation patterns appear to be generally opposite. This difference in benzene concentration fluctuation is interpreted as a 'lag time' effect. The general conceptual theory in the South Area is that rain (dilution) would take longer than in the North Area to reach the groundwater and also migrate downgradient to MW06. In summary, the variability in benzene concentrations seems to be directly related to the variability in water table elevation. However, because the monitoring wells are located at different distances from locations where the benzene is entrained in the groundwater, it is difficult to show a direct correlation between water level and benzene concentrations. However, by taking into consideration the lag time represented by downgradient distance, it appears that the highest water levels in the source area cause the peaks of concentration in the downgradient plume. If the organic contaminants present in the smear zone are treated, the source of the benzene plume south of the site will be removed as well.

4.0 RECOMMENDATIONS

Groundwater monitoring results indicate that VOCs, primarily benzene and chloroethane, have migrated away from the ACS facility in the upper aquifer groundwater. The Tracer Investigation, confirmed by the groundwater monitoring program, indicated that a zone of benzene impact in the upper aquifer at the Site in 1996 extended approximately 700 feet north from the ACS facility and 1,500 feet south from the Kapica-Pazmey Area. Recent groundwater data demonstrate that the plume has been decreasing in several areas outside of the barrier wall in the upper aquifer.

North of the Site, concentrations of benzene and chloroethane have been decreasing at monitoring wells MW48 and MW49 (Figure 2). Figure 13 shows the concentration trends of benzene and chloroethane at these wells since 1996. Despite the seasonal fluctuations, decreasing concentration trends are observed in the last four years, as concentrations of benzene at MW48, for example, have decreased from 9,500 µg/l in 1998 to 440 µg/l in 2003. These decreasing trends are likely the result of the installation of the barrier wall, the perimeter groundwater containment system, and the application of ORC in the area.

South of the Site, concentrations of benzene and chloroethane have been decreasing at monitoring wells MW19 and MW45. These wells are located in the distal parts of the plume south of the Site. Figure 14 shows the concentration trends for benzene and chloroethane at these wells. Benzene and chloroethane at well MW19 have remained at relatively low concentrations. Benzene concentrations at monitoring well MW45 have decreased from 1,100 µg/l in April 1997 to 3 µg/l in March 2002. These decreasing trends are likely the result of the installation of the barrier wall and natural attenuation in the groundwater plume.

Monitoring wells MW48, MW49, MW19, and MW45 are all located within the plume identified by the Tracer Investigation in 1996. While concentrations at these wells have shown decreasing trends over the last several years, the concentrations of benzene and chloroethane closer to the site at well MW06 have not shown similar decreasing trends (Figure 15). Instead, concentrations have not shown significant decreases since the barrier wall was installed in 1997. Concentrations of benzene did decrease after the ORC application in 2001; however, due to the presence of upgradient source material, benzene concentrations appear to be returning to pre-application concentrations.

Removal, treatment, and containment are among the components of the approved remedy for the ACS NPL Site. A barrier wall was installed in 1997 to surround and isolate buried waste on the site. An in-situ vapor extraction system (ISVE) is currently being installed within the barrier wall to remove and treat mobile compounds from materials buried at the Site. A PGCS was installed in 1997 and since then has been extracting and treating affected groundwater outside the barrier wall on the north side of the Site.

The Phase 3 Investigation was undertaken to collect data to determine which method would be most appropriate at reducing VOC concentrations in the shallow groundwater in the South Area. The results of the investigation indicate that the source of groundwater consists of

VOCs (mostly BETX), DRO, and GRO, and occurs primarily in a three to six foot interval near the water table between 628 and 634 feet amsl. This area of organic contamination defined by the soil boring data occupies an area approximately 80 feet wide and 200 feet long, for a total of 96,000 cubic feet. This is the zone that will need to be treated to limit the source of future groundwater contamination.

Possible options for source treatment in the South Area include installation of an air sparge and soil vapor extraction system, a pump and treat system, monitored natural attenuation, additional applications of ORC, or use of chemical oxidation. Several treatment approaches can be eliminated from consideration on the basis of the Phase 3 findings. Air sparge and pump and treat systems are suited to source areas with deep vertical dispersal of contaminants, not a thin smear zone. A pumping system would not be applicable to this situation, since groundwater pumping would lower the water table, and the source area is already at the top of the water table zone. The fact that a major part of the source material consists of organic compounds in the diesel range and non-volatile gasoline range is an indication the vapor extraction would be ineffective.

Monitored natural attenuation has been shown to be effective in the distal parts of the plume, and is likely responsible for plume stability and some decrease in concentrations within the plume. However, due to the elevated concentrations of VOCs still detected near the source area and the presence of residual organic material and NAPLs in the smear zone near the intersection of Colfax Avenue and Reder Road, MWH recommends additional steps to treat the residuals.

ORC would have been a good remedial choice, if it had turned out that the source of the groundwater impact was primarily benzene in the dissolved phase. However, it appears that the benzene is collocated in an area with higher concentrations of organic compounds with relatively low volatility. While concentrations of these compounds do not exceed MCLs themselves, they will take a relatively large volume of oxygen to enhance the bioremediation in the zone and destroy both the benzene and associated organic carbon compounds.

It appears that a more cost-effective approach would be to increase oxygen concentrations to directly oxidize the compounds. Chemical oxidation (Chem-Ox) is potentially more effective in treating the secondary source contained in groundwater and the aquifer matrix in the water table zone. It is an in-situ treatment process that uses a proportioned mixture of oxidizers, catalysts, and chelating agents to chemically transform organic contaminants into harmless byproducts, mainly carbon dioxide and water. The materials can be mixed and directly injected into the source area. It is feasible for use in unsaturated soils at the top of the water table and where NAPLs and residual contamination may be present.

Therefore, MWH is proposing to investigate the use of Chem-Ox to reduce the mass of organic compounds in the water table smear zone in the area that is acting as the source for the south area benzene plume. The area is shown in Figure 16. It is the area proposed for treatment by Chem-Ox. The conceptual design of the process of implementing a Chem-Ox treatment would be as follows:

- **Bench Test** - Several soil samples would be collected and sent to the vendor selected for the chemical oxidation treatment. The vendor would then treat aliquots of the soil to determine if Chem-Ox is appropriate for the Site, and the optimum mixture of the reagent. If the test indicates that Chem-Ox is not viable option for the Site, then no further applications of Chem-Ox would be reviewed.

- **Full Scale Application** – This event would apply the optimum formulation of reagent to the entire treatment area. The treatment would be injected either through DPT holes or through temporary well points, and would target the smear zone near the water table. Following treatment, soil samples would be collected from the treated areas and would be analyzed for VOCs, GRO, DRO, and TOC. This data would evaluate the destruction of the organic contaminants.

- **Follow-up Injections** – If soil samples indicate that certain areas of elevated concentrations remain, smaller targeted application(s) of the chemical oxidant would be completed. It is anticipated that at least one follow-up application would be needed.

- **Groundwater monitoring** – Monitoring of groundwater concentrations at wells in the area would be completed as necessary to document the reduction of VOCs in the area.

The Chem-Ox treatment will be applied specifically to the secondary source material in the "smear zone." The application will not be extended further downgradient along the plume which contains dissolved benzene. The seasonal variability at MW06 shows that benzene concentrations in the plume derive directly from this secondary source. So, when the source is removed, the plume can be expected to dissipate.

Upon comment and approval of the approach by the U.S. EPA, a formal Work Plan would be submitted outlining the specific procedures, anticipated schedule, health and safety plan, and the Chem-Ox vendor's proposal. It is anticipated that the work outlined above could be completed within 12 to 18 months from the start of activities.

5.0 REFERENCES

Montgomery Watson, 1998. *Conceptual Work Plan.*

Montgomery Watson, November 2000. *ORC® Pilot Study Report –Summary of the Oxygen Release Compound (ORC®) Pilot Study in the North Area.*

MWH, November 2001. *Quality Assurance Project Plan.*

MWH, September 2002. *Revised Long-Term Groundwater Monitoring Plan.*

MWH, September 2002. *South Area ORC Pilot Study Evaluation.*

MWH, November 1, 2002. *Work Plan for Phase 3 Investigation, ORC Pilot Study.*

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Tables

MWH

Table 1
Summary of Parameters Analyzed in Groundwater Samples - Tasks 1 and 2
ORC Phase 3 Investigation
American Chemical Service NPL Site
Griffith, Indiana

	FIELD SAMPLING					ORGANIC COMPOUNDS			NATURAL ATTENUATION PARAMETERS									
Analytical Parameter	**DO**	**pH**	**Temp.**	**Spec. Cond.**	**ORP**	**VOCs**	**Diesel Range Organics**	**Gasoline Range Organics**	**Dissolved Organic Carbon**	**Chemical Oxygen Demand**	**Nitrate**	**Nitrite**	**Ammonia-N**	**Total Kjedahl Nitrogen**	**Total Iron and Manganese**	**Dissolved Iron and Manganese**	**Sulfate**	**Methane Ethane Ethene**
Analytical Method	**Field Probe**	**Field Probe**	**Field Probe**	**Field Probe**	**Field Probe**	**SW-8260B**	**SW-8015B**	**SW-8015B**	**EPA 415.1**	**EPA 410**	**EPA 300.0**	**EPA 300.0**	**EPA 350.1**	**EPA 351.3**	**SW6010B**	**SW6010B**	**EPA 300.0**	**RSK 175**
TASK 1 - Groundwater Samples																		
3th Quarter 2002																		
MW06	1	1	1	1	1	1												
ORCPZ102	1	1	1	1	1	1												
ORCPZ103	1	1	1	1	1	1												
4th Quarter 2002																		
MW06	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ORCPZ102	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ORCPZ103	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TASK 1 TOTAL	**6**	**6**	**6**	**6**	**6**	**6**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
TASK 2 - DPT Groundwater Samples																		
DPT-01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DPT-02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DPT-03	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DPT-04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DPT-05	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DPT-06	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DPT-07	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DPT-07B	1	1	1	1	1	1												
TASK 2 TOTAL	**8**	**8**	**8**	**8**	**8**	**8**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**

Notes
Blank cells indicate that sample was not analyzed for that parameter
DO - Dissolved Oxygen
Temp - Temperature (°C)
Spec. Cond. - Specific Conductivity
ORP - Oxidation Reduction Potential
VOCs - Volatile Orgnanic Compounds
Analytical Methods with the prefix "SW" indicate SW-846 Methods.
Total iron and manganese analyses were conducted on unfiltered samples
Dissolved iron and manganese samples were conducted on field filtered samples using disposable .45 micron filters.

Table 2
Summary of Parameters Analyzed in Soil Samples
ORC Phase 3 Investigation - Task 3
American Chemical Service NPL Site
Griffith, Indiana

Analytical Parameter	Sample Depth (feet bgs)	Location in Aquifer	VOCs	Diesel Range Organics	Gasoline Range Organics	Total Organic Carbon
Analytical Method			**SW8260B/5035**	**SW8015B**	**SW8015B**	**EPA 415.1**
Task 3 - DPT Soil Samples						
SDPT-01	27	Middle	1	1	1	1
SDPT-02	22	Top	1	1	1	1
	27	Middle	1	1	1	1
SDPT-03	19	Top	1	1	1	1
	22	Top	1	1	1	1
	29	Bottom	1	1	1	1
SDPT-04	18	Top	1	1	1	1
	22	Top	1	1	1	1
SDPT-05	24	Top	1	1	1	1
	33	Bottom	1	1	1	1
SDPT-06	23	Top	1	1	1	1
SDPT-07	23	Top	1	1	1	1
SDPT-08	19	Top	1	1	1	1
SDPT-09	22	Top	1	1	1	1
TASK 3 TOTAL			**14**	**14**	**14**	**14**

Notes
Analytical Methods with the prefix "SW" indicate SW-846 Methods.
DPT - Direct Push Technology
VOCs - Volatile Orgnanic Compounds

Table 3
Groundwater Field Parameters
ORC Phase 3 Investigation - Tasks 1 and 2
American Chemical Service NPL Site
Griffith, Indiana

Sample Identification	Sample Date	Sample Depth	pH	Conductivity (S/m)	Turbidity (NTU)	DO (mg/l)	Temperature (°C)	ORP (mV)
Task 1 - Groundwater Samples								
ORCPZ102	09/23/02	NA	6.70	0.213	5	0.0	15.0	-118
	12/05/02	NA	6.71	0.260	15	0.0	13.9	-3
ORCPZ103	09/23/02	NA	6.65	0.252	39	0.0	15.7	85
	12/05/02	NA	6.67	0.280	1	0.0	13.9	54
MW06	09/23/02	NA	6.65	0.403	7	1.8	19.0	43
	12/05/02	NA	6.64	0.421	11	0.9	15.8	92
Task 2 - DPT Groundwater Samples								
DPT-01	12/19/02	23-26	6.95	0.226	539	7.3	12.8	-148
DPT-02	12/19/02	23-26	7.13	0.149	88	4.8	13.4	-147
DPT-03	12/19/02	23-26	7.05	0.205	65	5.1	13.6	-127
DPT-04	12/19/02	23-26	6.98	0.256	96	5.3	13.0	-108
DPT-05	12/19/02	23-26	7.03	0.240	51	4.5	13.5	-127
DPT-06	12/19/02	23-26	7.37	0.272	44	3.5	13.4	-163
DPT-07	12/20/02	23-26	7.11	0.261	47	3.2	12.7	-128
DPT-07B	12/20/02	27-30	7.26	0.339	68	3.4	12.6	-126

Notes:
S/m - Siemens per meter
NTU - nephelometric turbidity units
mg/l - milligrams per liter
C - degrees centigrade
mV - millivolts

Table 4
Summary of Organic Compound Analytical Results - Task 1
ORC Phase 3 Investigation
American Chemical Service NPL Site, Griffith, Indiana

	South Area ORC Pilot Study						Phase 3 - Task 1	
Sample Date	**Apr-01**	**May-01**	**Jun-01**	**Jul-01**	**Sep-01**	**Nov-01**	**Sep-02**	**Dec-02**
ORCPZ102								
Acetone					6 J/UJ	9 J/	190 DJB/	230 DJ/
Benzene	650	290 /J	65 /J	6,000	6,200 D/	7,200 D/	7,400 D/	3,300 D/B
Chlorobenzene					6 J/	7 J/		4 J/
Chloroethane	200	99	93	580	370 D/	500 DJ/	400 D/	180 D/
Cyclohexane					4 J/	6 J/		
Ethylbenzene	16 J/	4 J/		53 J/	98	110	58	
Methylene Chloride					4 J/UJ	4 J/	3 J/	2 J/
Methylcyclohexane						0.5 J/		
Isopropylbenzene					13	13	12	9
Toluene					1 J/	2 J/	1 J/	2 J/UB
trans-1,2-Dichloroethene			2 J/		11	9 J/	4 J/	1 J/
1,4-Dichlorobenzene					3 J/	3 J/	3 J/	
1,2-Dichlorobenzene					16	16	15	12
Xylenes (total)	310	28		810	1,600 D/	2,100 D/	1,900 D/	470 D/
Diesel Range Organics								3,600
Gasoline Range Organics								3,000
ORCPZ103								
Benzene	800				58	220 D/	79	360 D/B
Chloroethane	73				34	67	79	79
Ethylbenzene	14 J/					1 J/		
Methylene Chloride							3 J/	2 J/
Isopropylbenzene								
Xylene	470					12		
Diesel Range Organics								990
Gasoline Range Organics								57
MW06	(Mar-01)							
Benzene	2,000		26					54 /JB
Chloroethane	270		18					56 /J
Ethylbenzene								
Toluene								1 J/UB
Isopropylbenzene								
Xylene								
Diesel Range Organics								1,600
Gasoline Range Organics								170

Notes:
Blank cells indicate analyte was not detected
Shaded cells indicate analyte was not analyzed.
All concentrations in micrograms per liter (ug/L)
Only detected compounds reported
X/ - Indicates laboratory flag
/X - Indicates data validation flag
J - Estimated value; concentration is below the reporting limit
D - Results based on diluted sample.
B - Compound was detected in laboratory blank
JB - Compound was detected at an estimated concentration below reporting limt, and in laboratory blank.
UB - Analyte is not detected at or above the indicated concetration due to blank contamination.

Table 5
Summary of Organic Compound Analytical Results
ORC Phase 3 Investigation - Task 2
American Chemical Service NPL Site, Griffith, Indiana

DPT Sample Location	DPT-01	DPT-02	DPT-03	DPT-04	DPT-05	DPT-06	DPT-07	DPT-07B
Sample Date	12/19/02	12/19/02	12/19/02	12/19/02	12/19/02	12/19/02	12/20/02	12/20/02
Sample Interval (feet bgs)	23-26	23-26	23-26	23-26	23-26	23-26	23-26	27-30
1,2-Dichlorobenzene	2 JB/UB	3 JB/B	25 B/B	24 B/B	14 B/B	16 B/B	11 B/B	9 B/B
1,2-Dichloroethane								27
1,3-Dichlorobenzene	0.4 JB/UB	0.3 JB/UB	1 JB/UB	2 JB/B	2 JB/B	2 JB/B	1 JB/UB	1 JB/UB
1,4-Dichlorobenzene	0.7 JB/UB	2 JB/B	6 B/B	11 B/B	10 B/B	11 B/B	7 B/B	6 B/B
Benzene	0.5 J/	1 J/	7	230 DJ/	42	180	720 D/	1,700 D/
Chlorobenzene	0.7 J/	6	12	84	45	91	120	110
Chloroethane				110	14	43	100	170
Cyclohexane			5	12	8	12	7	6
Ethylbenzene			200	1,800 D/	550 D/	1,400 D/		33
Isopropylbenzene		6	60	80	84	72	35	28
Methylcyclohexane		7	60	45	73	42	3 J/	2 J/
Methylene Chloride				0.6 J/	0.3 J/	0.6 J/	0.8 J/	1 J/
Toluene	0.8 JB/UB	3 JB/UB	4 JB/UB	12 B/UB	8 B/UB	17 B/UB	9 B/UB	11 B/UB
trans-1,2-Dichloroethene							1 J/	0.6 J/
Xylenes (total)			790 D/	7,700 D/	1,900 D/	5,500 D/	2,100 D/	5,200 D/
Diesel Range Organics	1,200	<1,000	4,500	21,000	8,000	12,000	3,300	
Gasoline Range Organics	72 J/	210 J/	7,200	40,000 D/	16,000	30,000 D/	8,100	

Notes:
Blank cells indicate analyte was not detected
Shaded cells indicate analyte was not analyzed
DPT - Direct Push Technology
bgs - below ground surface
All concentrations in micrograms per liter (ug/L)
Only detected compounds reported
X/ - Indicates laboratory flag
/X - Indicates data validation flag
J - Estimated value; concentration is below the reporting limit
D - Results based on diluted sample.
B - Compound was detected in laboratory blank
JB - Compound was detected at an estimated concentration below reporting limt, and in laboratory blank.
UB - Analyte is not detected at or above the indicated concetration due to blank contamination.

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Table 6
Summary of Natural Attenuation Parameter Results - Tasks 1 and 2
ORC Phase 3 Investigation
American Chemical Service NPL Site
Griffith, Indiana

		Task 1			Task 2						
Sample Location		**MW06**	**ORCPZ102**	**ORCPZ103**	**DPT-01**	**DPT-02**	**DPT-03**	**DPT-04**	**DPT-05**	**DPT-06**	**DPT-07**
Sample Date		**12/05/02**	**12/05/02**	**12/05/02**	**12/19/02**	**12/19/02**	**12/19/02**	**12/19/02**	**12/19/02**	**12/19/02**	**12/20/02**
Sample Depth		**NA**	**NA**	**NA**	**23-26**	**23-26**	**23-26**	**23-26**	**23-26**	**23-26**	**23-26**
Dissolved Organic Carbon	mg/l	33.87	13.08	13.26	89.14	111	118	7.097	109	124	7.275
Chemical Oxygen Demand	mg/l	39	45	45	17	<10	13	28	17	28	21
Nitrate	mg/l	<0.05	<0.05	0.57	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate + Nitrite	mg/l	0.05	<0.05	0.745	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia-N	mg/l	5.85	7.63	5.67	1.01	0.854	1.27	2.54	1.52	1.41	3.43
Total Kjedahl Nitrogen	mg/l	6.824	6.612	8.566	1.214	0.9896	1.453	3.037	1.809	1.834	3.775
Total Iron	ug/l	2,430	23,700	1970	13,100	9,030	8,790	12,500	13,600	9,900	13,900
Dissolved Iron	ug/l	1,520 /B	23,600 /B	1,870 /B	12,800	8,650	8,780	12,500	13,800	9,670	13,200
Total Manganese	ug/l	1,810	335	4,290	1,950	766	496	106	215	186	238
Dissolved Manganese	ug/l	1,720	299	4,090	1,960	740	492	107	213	172	219
Sulfate	mg/l	231	104	130	70.6	6.55	<5	<5	<5	<5	<5
Methane	ug/l	140 B/	840 B/	420 B/	0.4 JB/	85 B/	120 B/	520 B/	410 B/	0.7 JB/	720 B/
Ethane	ug/l	52 J/	49 J/	15 J/	0.9 J/	0.9 J/	4 J/	10 J/	6 J/	0.04 J/	35 J/
Ethene	ug/l	50 J/	<150	5 J/	0.3 JB/	0.8 JB/	4 JB/	<75	2 JB/	<2	<150

Notes
DPT - Direct Push Technology
ug/l - micrograms per liter
mg/l - milligrams per liter
X/ - Indicates laboratory flag
B - Compound was detected in laboratory blank
JB - Compound was detected at an estimated concentration below reporting limt, and in laboratory blank.
J - Estimated value; concentration is below the reporting limit
NA - Not applicable

Table 7
Summary of Volatile Organic Compound Results - Task 3
ORC Phase 3 Investigation
American Chemical Service NPL Site
Griffith, Indiana

DPT Sample Location	SDPT-01		SDPT-02				SDPT-03						SDPT-04	
Sample Depth (feet)	27		22		27		19		22		29		18	
Sample Date	02/19/03	DL	02/19/03	DL	02/19/03	DL	02/19/03	DL	02/19/03	DL	02/19/03	DL	02/19/03	DL
1,1,1-Trichloroethane	U	5	8	5	10	5	U	830	U	4,800	U	240	U	15,000
1,1,2,2-Tetrachloroethane	U	5	U	5	U	5	U	830	U	4,800	U	240	U	15,000
1,1,2-Trichloroethane	U	5	U	5	1 J	5	U	830	U	4,800	U	240	U	15,000
1,1-Dichloroethane	U	5	U	5	U	5	U	830	U	4,800	U	240	U	15,000
1,2,4-Trichlorobenzene	U	5	U	5	U	5	U	830	U	4,800	110 JB/UB	240	U	15,000
1,2-Dibromo-3-Chloropropane	U	5	U	5	U	5	U	830	U	4,800	U	240	U	15,000
1,2-Dichlorobenzene	1 J	5	11 B/B	5	56 B/B	5	1,300	830	4,100 J	4,800	140 J	240	11,000 J	15,000
1,4-Dichlorobenzene	U	5	2 J	5	8	5	U	830	U	4,800	U	240	U	15,000
2-Butanone	U	13	16 B/B	12	10 JB/B	14	U	2100	U	12,000	U	600	U	38,000
2-Hexanone	U	13	0.9 JB/UB	12	1 JB/UB	14	U	2100	U	12,000	U	600	U	38,000
4-Methyl-2-Pentanone	U	13	5 J	12	3 J	14	U	2100	U	12,000	U	600	U	38,000
Acetone	17	13	52 B/B	12	27 B/B	14	U	2100	U	12,000	U	600	U	38,000
Benzene	4 J	5	7	5	100	5	U	830	U	4,800	1,600	240	U	15,000
Bromomethane	U	5	1 J	5	1 J	5	U	830	U	4,800	U	240	U	15,000
Carbon Disulfide	2 J	5	12	5	0.6 J	5	U	830	U	4,800	U	240	U	15,000
Chlorobenzene	U	5	0.5 J	5	3 J	5	U	830	U	4,800	U	240	U	15,000
Chloroethane	U	5	U	5	U	5	U	830	U	4,800	U	240	U	15,000
Chloroform	U	5	U	5	U	5	U	830	U	4,800	U	240	U	15,000
Chloromethane	U	5	U	5	3 J	5	U	830	U	4,800	U	240	U	15,000
Cis-1,2-Dichloroethene	0.5 J	5	1 J	5	1 J	5	U	830	U	4,800	U	240	U	15,000
Cyclohexane	2 J	5	8	5	17	5	U	830	U	4,800	U	240	U	15,000
Ethylbenzene	0.5 J	5	3 J	5	7	5	17,000	830	110,000	4,800	3,300	240	190,000	15,000
Isopropylbenzene	U	5	1 J	5	36	5	2,600	830	11,000	4,800	130 J	240	32,000	15,000
Methyl Acetate	U	5	U	5	U	5	U	830	U	4,800	U	240	U	15,000
Methylcyclohexane	4 J	5	19	5	59	5	2,500	830	21,000	4,800	U	240	45,000	15,000
Methylene Chloride	U	5	0.6 J	5	0.8 J	5	U	830	U	4,800	U	240	U	15,000
Styrene	U	5	U	5	0.3 J	5	U	830	1,200 J	4,800	U	240	U	15,000
Toluene	3 J	5	11	5	9	5	1,500	830	19,000	4,800	7,300	240	19,000	15,000
Trans-1,3-Dichloropropene	U	5	U	5	3 J	5	U	830	U	4,800	U	240	U	15,000
Trichloroethene	0.4 J	5	U	5	U	5	U	830	U	4,800	U	240	U	15,000
Xylenes (total)	2 J	16	11 J	15	31	16	83,000	830	480,000	4,800	15,000	240	830,000	15,000

Notes

DPT - Direct Push Technology
All depths in feet below ground surface
All concentrations in micrograms per kilogram (ug/kg)
X/X - Lab Qualifier/Data Validation Qualifier
DL - Detection (reporting) limit
U - Compound was not detected above detection limit

UB - Analyte is not detected at or above the indicated concetration due to blank contamination.
J - Estimated value; concentration is below the reporting limit
B - Compound was detected in laboratory blank
D - Results based on diluted sample.
Sample SDPT05-31 was labeled SDPT05-33 on chain-of-custody

Table 7
Summary of Volatile Organic Compound Results - Task 3
ORC Phase 3 Investigation
American Chemical Service NPL Site
Griffith, Indiana

DPT Sample Location	SDPT-04			SDPT-05						SDPT-06			SDPT-07			SDPT-08						SDPT-09		
Sample Depth (feet)	22			24			31			23			23			19			DUP			22		
Sample Date	02/19/03		DL	02/20/03		DL	02/20/03		DL	02/20/03		DL	02/20/03		DL	02/20/03		DL	02/20/03		DL	02/20/03		DL
1,1,1-Trichloroethane	**16**		5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
1,1,2,2-Tetrachloroethane	**4**	J	5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
1,1,2-Trichloroethane	**7**		5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
1,1-Dichloroethane	**36**		5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
1,2,4-Trichlorobenzene	**0.4**	JB/UB	5	U		290	U		240	U		270	**190**	JB/UB	490	U		270	**110**	JB/UB	260	U		250
1,2-Dibromo-3-Chloropropane	**0.7**	J	5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
1,2-Dichlorobenzene	**89**	B/B	5	U		290	**79**	J	240	U		270	**320**	J	490	**130**	J	270	U		260	**160**	J	250
1,4-Dichlorobenzene	**12**		5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
2-Butanone	**13**	JB/B	13	U		720	U		600	U		670	U		1200	U		660	U		650	U		620
2-Hexanone		U	13	U		720	U		600	U		670	U		1200	U		660	U		650	U		620
4-Methyl-2-Pentanone	**20**		13	U		720	U		600	U		670	U		1200	U		660	U		650	U		620
Acetone	**23**	B/B	13	U		720	U		600	U		670	U		1200	U		660	U		650	U		620
Benzene	**69**		5	**130**	J	290	**970**		240	U		270	**140**	J	490	U		270	U		260	U		250
Bromomethane	**1**	J	5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
Carbon Disulfide	**0.6**	J	5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
Chlorobenzene		U	5	**98**	J	290	**56**	J	240	U		270	**90**	J	490	U		270	U		260	U		250
Chloroethane		U	5	U		290	**37**	J	240	U		270	U		490	U		270	U		260	U		250
Chloroform	**4**	J	5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
Chloromethane		U	5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
Cis-1,2-Dichloroethene	**4**	J	5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
Cyclohexane	**10**		5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
Ethylbenzene	**4,000**	D	270	U		290	U		240	**610**		270	**8,200**		490	**820**		270	**240**	J	260	**1,200**		250
Isopropylbenzene	**61**		5	**120**	J	290	**67**	J	240	**59**	J	270	**610**		490	**420**		270	**190**	J	260	**190**	J	250
Methyl Acetate	**4**	J	5	U		290	U		240	U		270	U		490	U		270	**260**	J	260	U		250
Methylcyclohexane	**69**		5	**46**	J	290	U		240	U		270	**830**		490	**470**		270	**69**	J	260	**63**	J	250
Methylene Chloride	**1**	J	5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
Styrene		U	5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
Toluene	**3,400**	D	270	U		290	U		240	U		270	U		490	U		270	U		260	U		250
Trans-1,3-Dichloropropene		U	5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
Trichloroethene		U	5	U		290	U		240	U		270	U		490	U		270	U		260	U		250
Xylenes (total)	**18,000**	D	270	**8,400**		290	**17,000**		240	**2,900**		270	**34,000**		490	**3,600**		270	**1,200**		260	**3,500**		250

Notes

DPT - Direct Push Technology
All depths in feet below ground surface
All concentrations in micrograms per kilogram (ug/kg)
X/X - Lab Qualifier/Data Validation Qualifier
DL - Detection (reporting) limit
U - Compound was not detected above detection limit

UB - Analyte is not detected at or above the indicated concetration due to blank contamination.
J - Estimated value; concentration is below the reporting limit
B - Compound was detected in laboratory blank
D - Results based on diluted sample.
Sample SDPT05-31 was labeled SDPT05-33 on chain-of-custody

Table 8
Summary of Additional Soil Sampling Results - Task 3
ORC Phase 3 Investigation
American Chemical Service NPL Site
Griffith, Indiana

DPT Sample Location	SDPT-01	SDPT-02		SDPT-03			SDPT-04		SDPT-05		SDPT-06	SDPT-07	SDPT-08	SDPT-09
Sample Depth (feet)	27	22	27	19	22	29	18	22	24	31	23	23	19	22
Sample Date	02/19/03	02/19/03	02/19/03	02/19/03	02/19/03	02/19/03	02/19/03	02/19/03	02/20/03	02/20/03	02/20/03	02/20/03	02/20/03	02/20/03
Diesel Range Organics	6,200 J	8,100 J	21,000	450,000 D/	2,100,000 D/	21,000	1,500,000 D/	33,000	22,000	46,000	33,000	67,000	360,000 D/	50,000
Gasoline Range Organics	<1,600	<560	760	220,000 B/	920,000 B/	8,900	240,000 B/	11,000	2,400	3,500	2,700	13,000	74,000 B/	2,100
Total Organic Carbon	1,800,000	8,929,000	2,557,000	3,710,000	5,219,000	2,275,000	4,742,000	2,739,000	3,851,000	2,104,000	15,400,000	4,490,000	6,657,000	4,140,000

Notes
DPT - Direct Push Technology
All depths in feet below ground surface
All concentrations in micrograms per kilograms (ug/kg)
X / - Indicates laboratory flag
B - Compound was detected in laboratory blank
J - Estimated value; concentration is below the reporting limit
D - Results based on diluted sample.

Table 9
Historical Water Elevations in the South Area
ORC Phase 3 Investigation
American Chemical Service NPL Site
Griffith, Indiana

	Upper Aquifer Wells		BWES Piezometer Pairs				ORC Piezometers		
Well Identification	**MW06**	**MW17**	**P101**	**P111**	**P103**	**P109**	**ORCPZ102**	**ORCPZ103**	**ORCPZ105**
TOC Elevation	**655.28**	**647.10**	**650.08**	**650.03**	**644.97**	**644.30**	**652.47**	**653.15**	**649.71**
Measurement Date									
Jun-98	NM	634.74	635.19	NI	635.01	NI	NI	NI	NI
Sep-98	631.82	NM	632.53	NI	632.27	NI	NI	NI	NI
Dec-98	631.04	NM	631.68	NI	Dry	NI	NI	NI	NI
Mar-99	632.88	NM	633.75	NI	633.77	NI	NI	NI	NI
Jun-99	633.84	NM	634.76	NI	634.67	NI	NI	NI	NI
Sep-99	630.78	NM	631.50	NI	Dry	NI	NI	NI	NI
Nov-99	630.07	NM	630.68	NI	Dry	NI	NI	NI	NI
Mar-00	630.59	NM	631.37	NI	Dry	NI	NI	NI	NI
Jun-00	632.51	NM	633.44	NI	633.86	NI	NI	NI	NI
Sep-00	630.49	NM	632.08	NI	631.81	NI	NI	NI	NI
Nov-00	631.12	NM	631.68	NI	631.46	NI	NI	NI	NI
Mar-01	632.90	633.26	633.86	NI	633.89	NI	NI	NI	NI
Jun-01	632.63	633.02	633.55	NI	633.43	NI	632.76	632.76	633.13
Sep-01	631.02	631.19	A	631.44	A	631.85	631.07	631.09	631.22
Mar-02	633.23	633.68	A	634.08	A	635.05	633.32	NM	NM
Sep-02	631.02	631.15	A	631.54	A	631.80	631.06	NM	NM
Dec-02	NM	NM	A	630.17	A	630.57	629.73	NM	NM
Mar-03	629.68	629.86	A	630.07	A	630.58	629.08	NM	NM
Maximum Elevation	**633.84**	**634.74**	**635.19**	**634.08**	**635.01**	**635.05**	**633.32**	**632.76**	**633.13**
Minimum Elevation	**629.68**	**629.86**	**630.68**	**630.07**	**631.46**	**630.57**	**629.08**	**631.09**	**631.22**
Elevation Range (in feet)	**4.16**	**4.88**	**4.51**	**4.01**	**3.55**	**4.48**	**4.24**	**1.67**	**1.91**

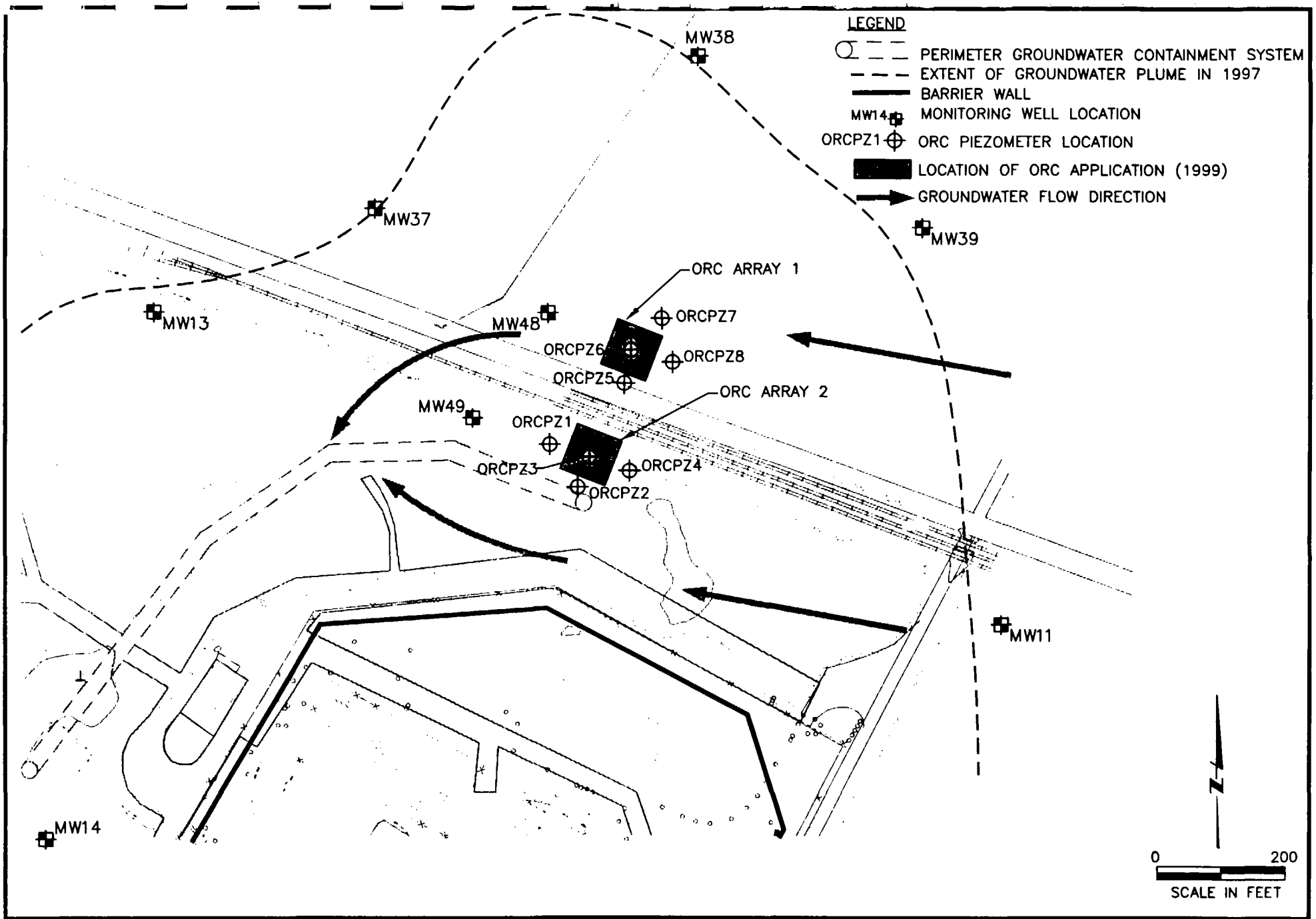
Notes:
Elevations in feet above mean sea level
TOC - Top of casing
BWES - Barrier wall extraction system
ORC - Oxygen release compound

NI - Not installed (Did not exist)
NM - Not measured (Not in monitoring plan)
A - Abandoned

CAS/MBM
J:/209/0601/Phase 3/Report/HistWaterTable.xls

Figures

MWH



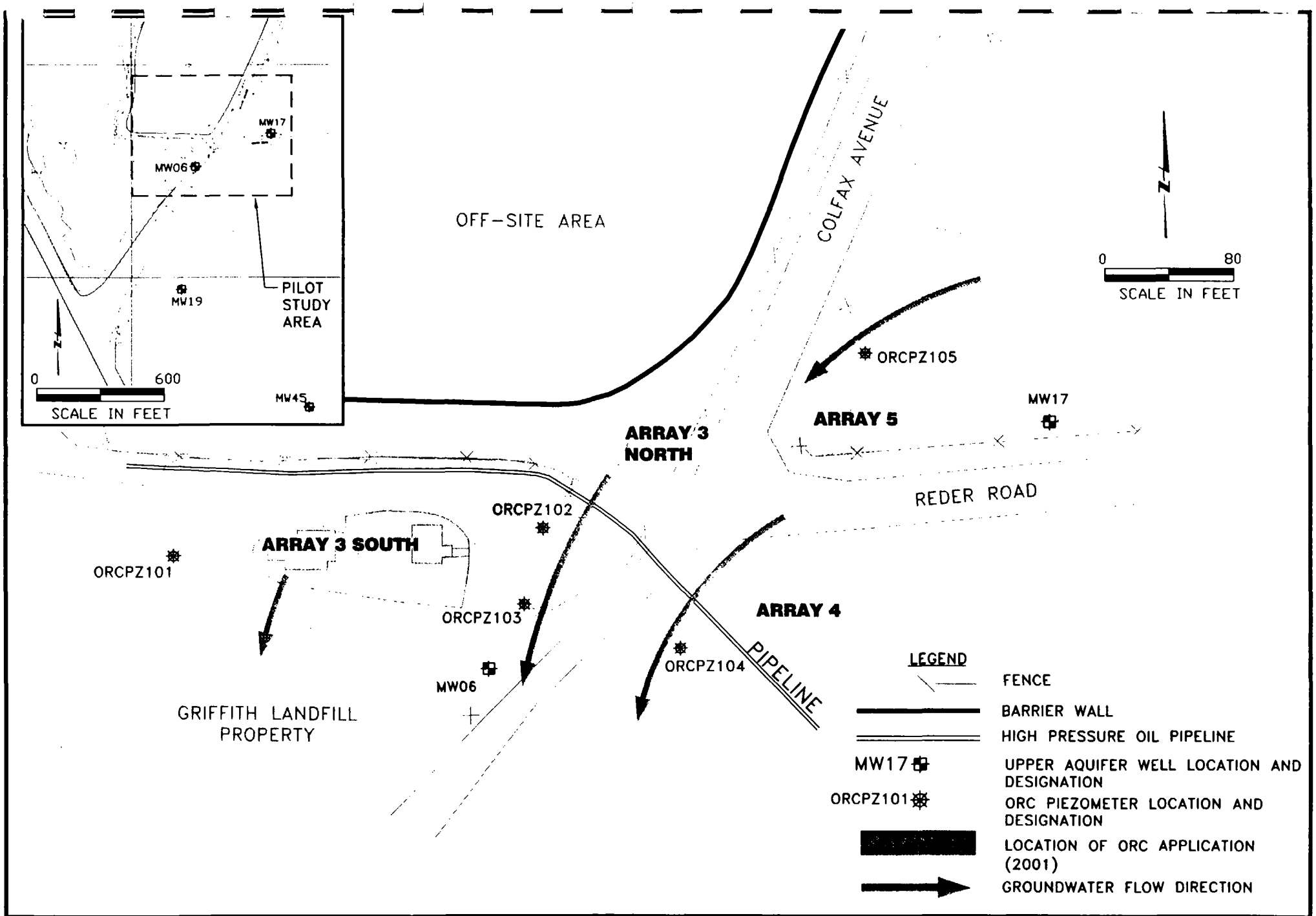
MWH

PHASE 3 INVESTIGATION REPORT
AMERICAN CHEMICAL SERVICE NPL SITE
GRIFFITH, INDIANA

NORTH AREA PILOT STUDY

FIGURE
1

J:\209\0601 ACS\0109 ORC_South\Drawings\2090601_orc_north_2.dwg, 09/03/03 01:20:24 PM



MWH	PHASE 3 INVESTIGATION REPORT AMERICAN CHEMICAL SERVICE NPL SITE GRIFFITH, INDIANA	SOUTH AREA PILOT STUDY	FIGURE 2

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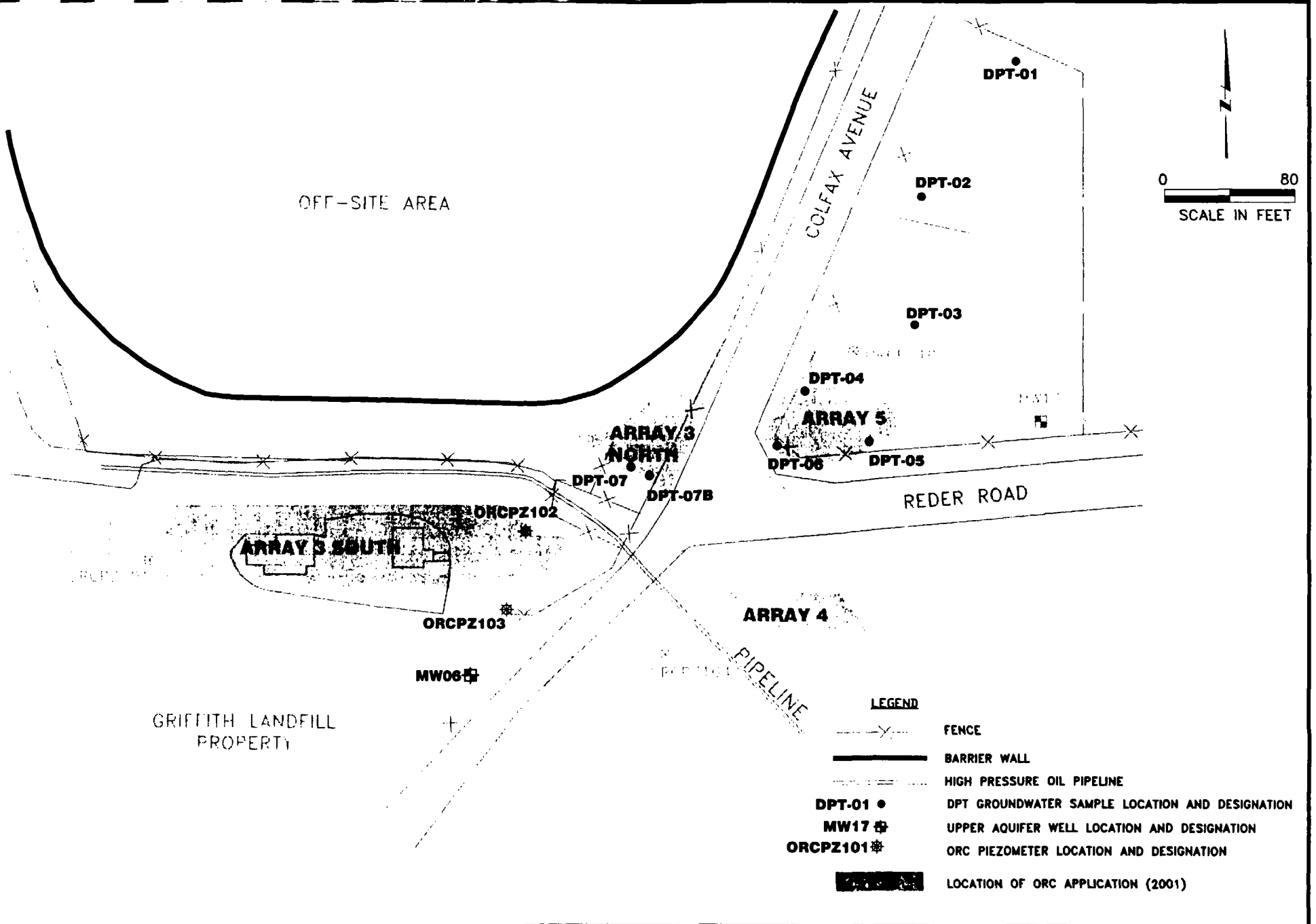


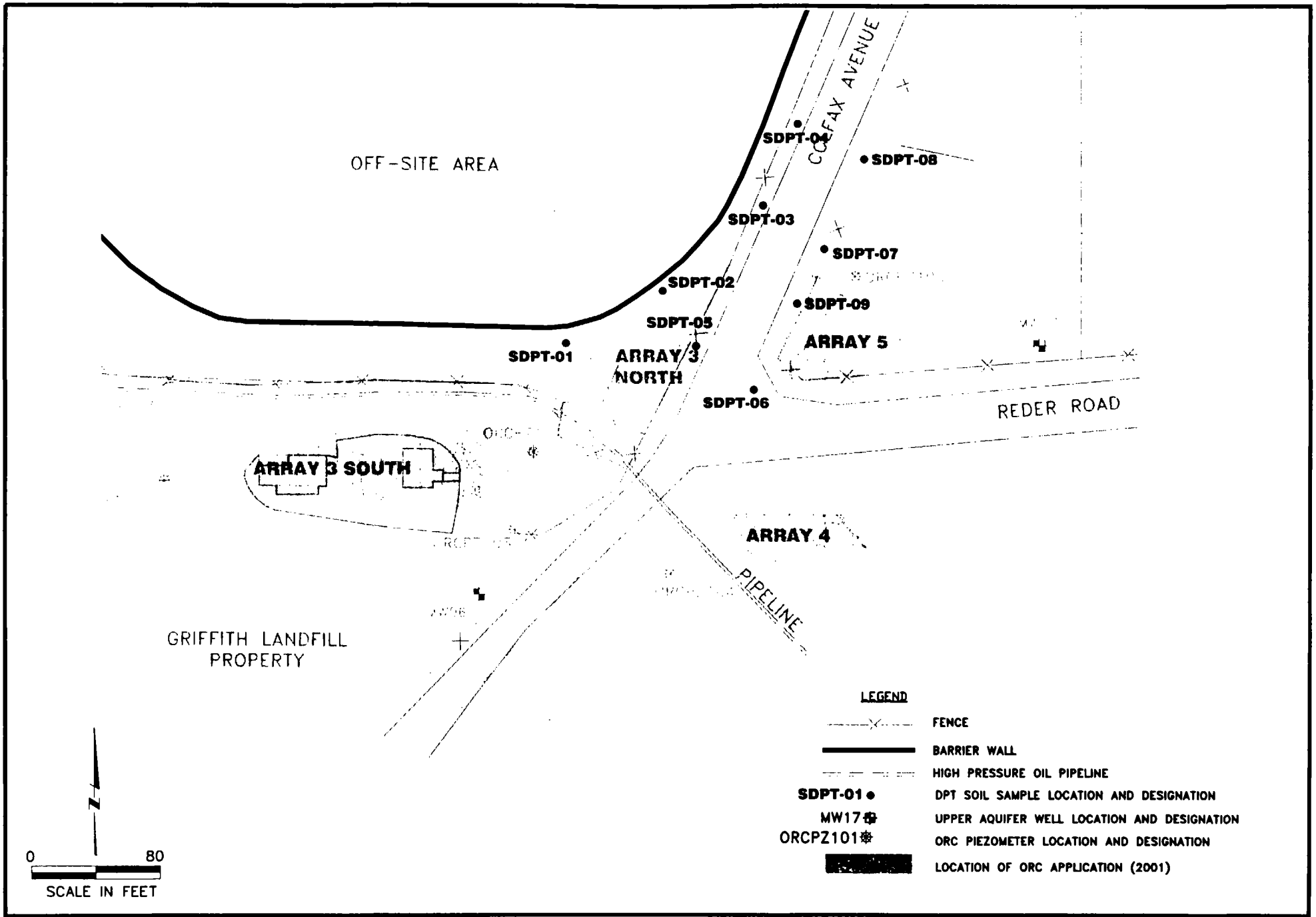
MWH

PHASE 3 INVESTIGATION REPORT
AMERICAN CHEMICAL SERVICE NPL SITE
GRIFFITH, INDIANA

TASK 1 AND 2 GROUNDWATER SAMPLING LOCATIONS

FIGURE 3

J:\209\0601 ACS\0109 ORC_South\Drawings\Task 1_2 GW samples.dwg, 09/03/03 01:22:10 PM



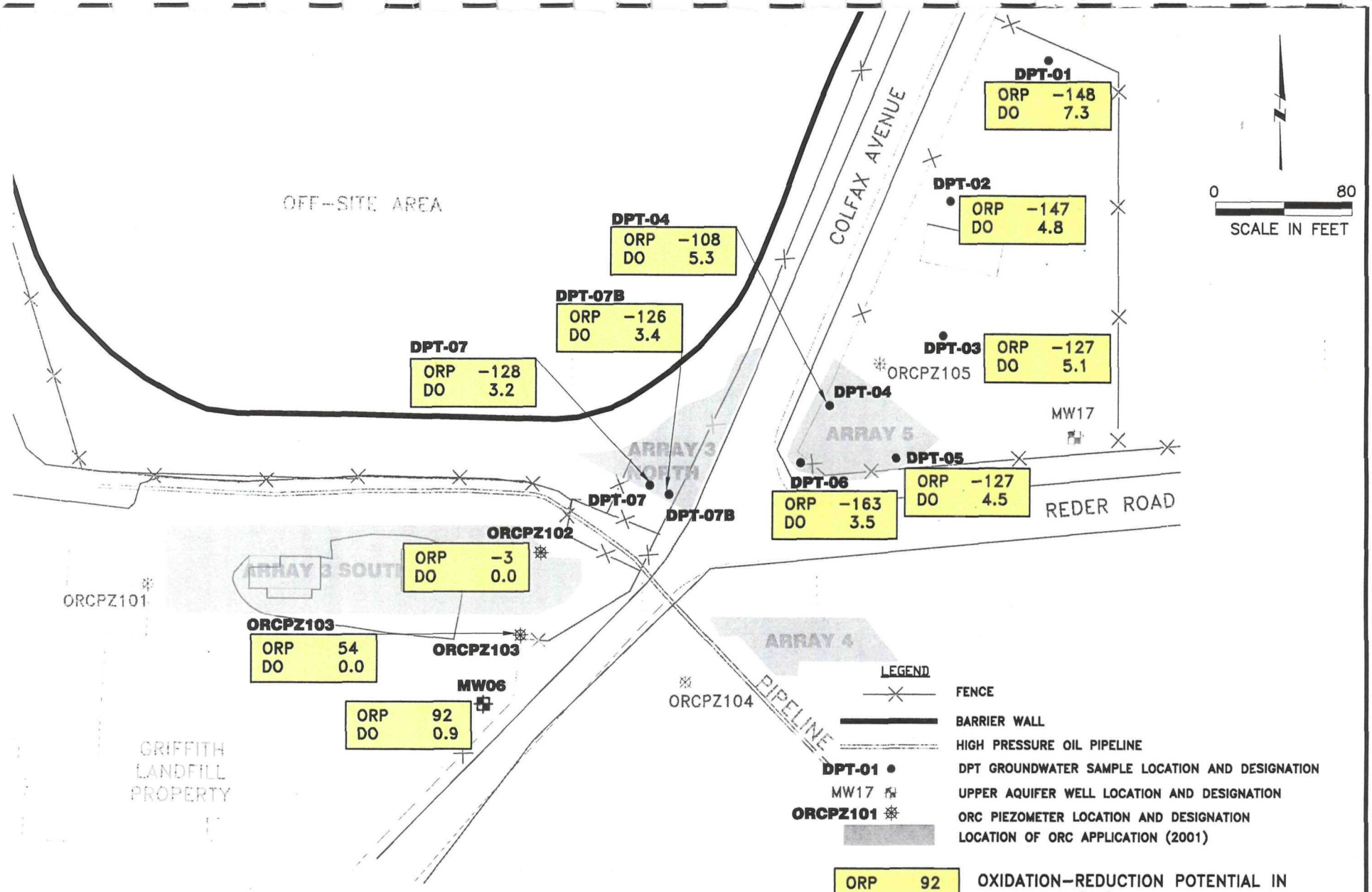
MWH

AMERICAN CHEMICAL SERVICE NPL SITE
GRIFFITH, INDIANA

TASK 3 SOIL SAMPLE
BOREHOLE LOCATIONS

FIGURE
4

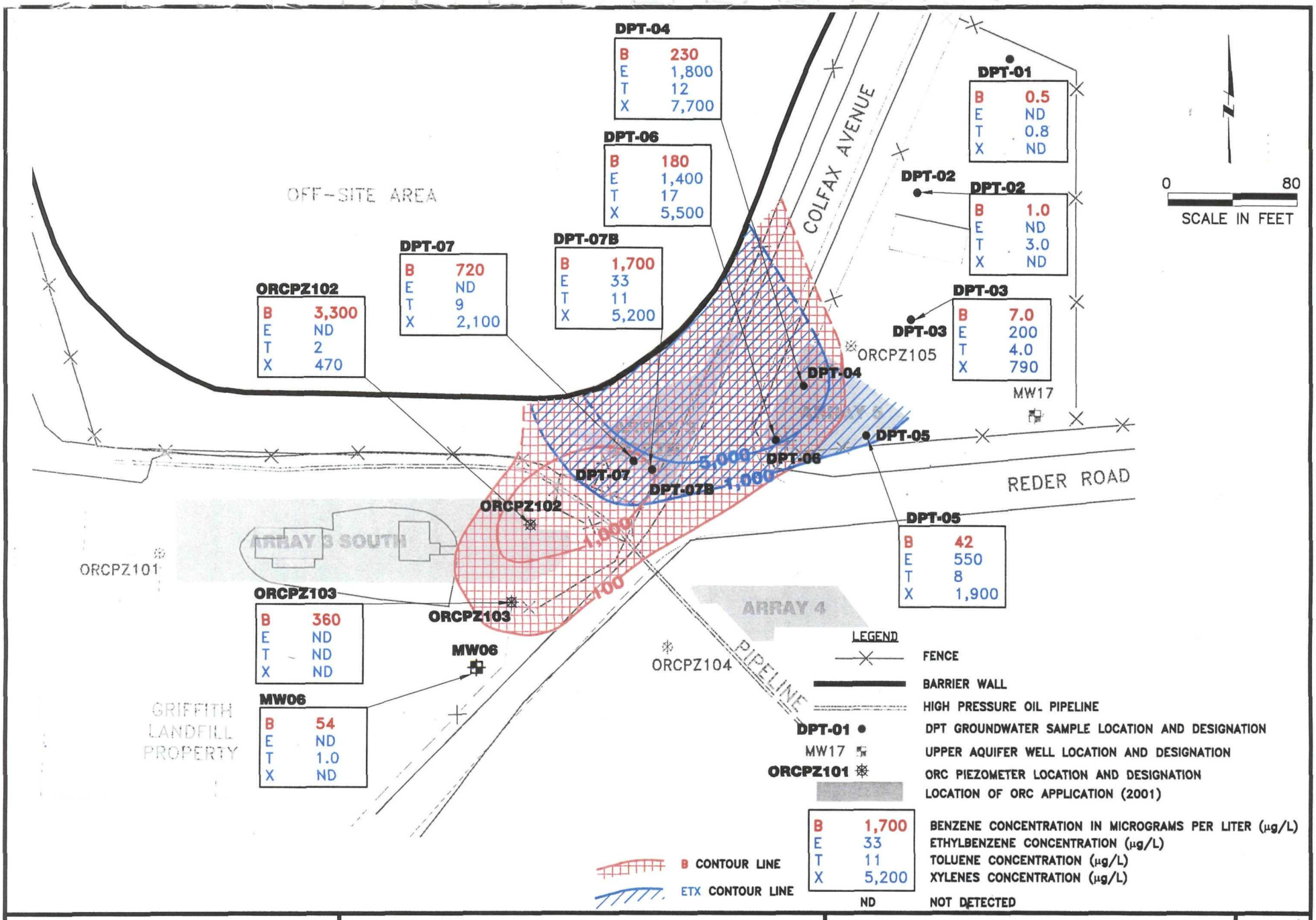
J:\209\0601 ACS\0109 ORC_South\Drawings\Task 3 Soil samples.dwg, 09/03/03 01:23:07 PM



NOTE: VALUES RECORDED UPON STABILIZATION

MWH	PHASE 3 INVESTIGATION REPORT AMERICAN CHEMICAL SERVICE NPL SITE GRIFFITH, INDIANA	CONCENTRATIONS OF DISSOLVED OXYGEN AND ORP IN GROUNDWATER	FIGURE 5

J:\209\0601 ACS\0109 ORC_South\Drawings\RESULTS IN GW.dwg, 09/03/03 01:39:32 PM CAS/MBM



MWH

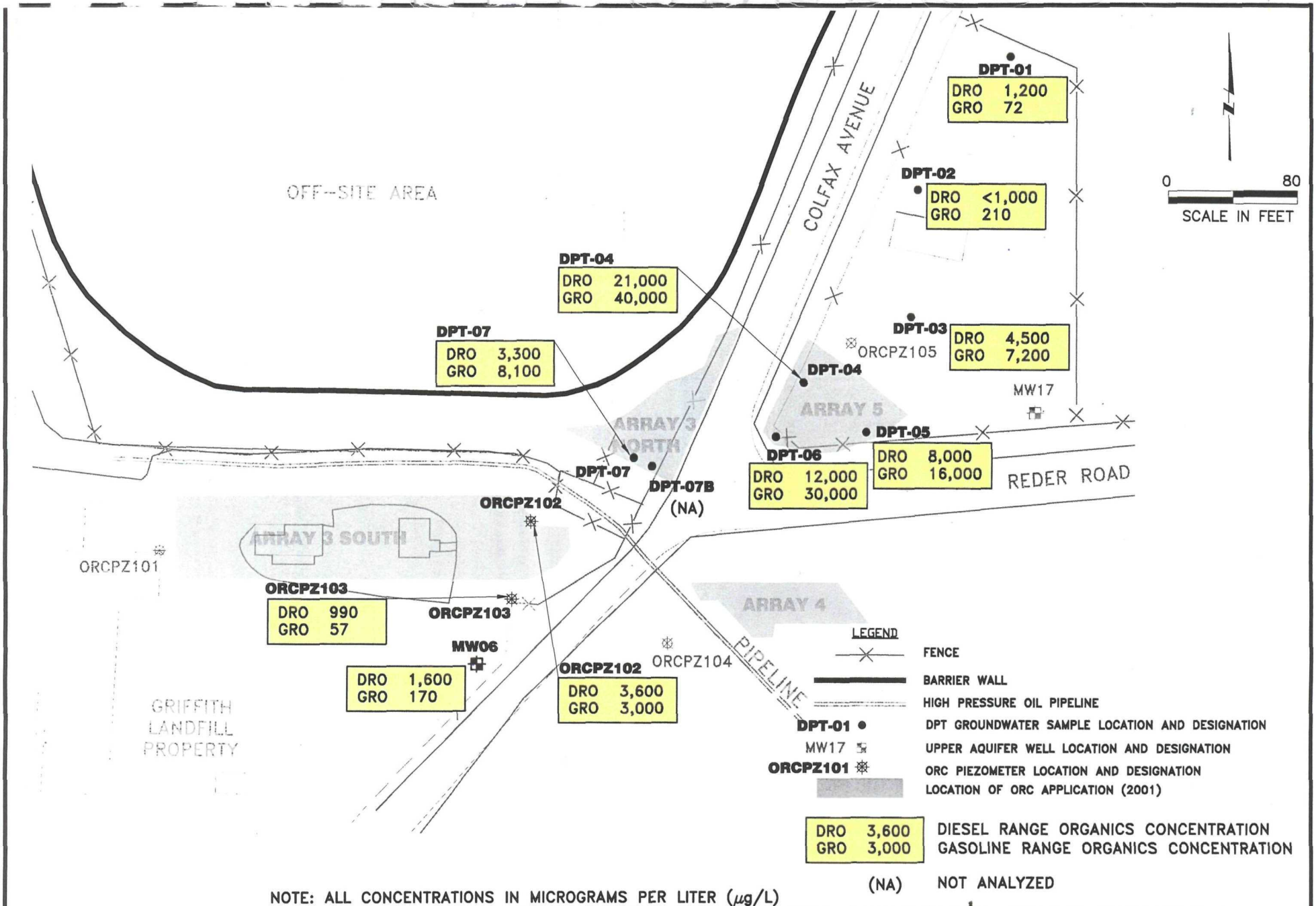
PHASE 3 INVESTIGATION REPORT
AMERICAN CHEMICAL SERVICE NPL SITE
GRIFFITH, INDIANA

CONCENTRATIONS OF BETX IN GROUNDWATER

FIGURE 6

J:\209\0601 ACS\0109 ORC_South\Drawings\RESULTS IN GW.dwg, 09/03/03 01:35:45 PM

CAS/MBM



NOTE: ALL CONCENTRATIONS IN MICROGRAMS PER LITER ($\mu g/L$)

MWH	PHASE 3 INVESTIGATION REPORT AMERICAN CHEMICAL SERVICE NPL SITE GRIFFITH, INDIANA	CONCENTRATIONS OF DRO AND GRO IN GROUNDWATER	FIGURE 7

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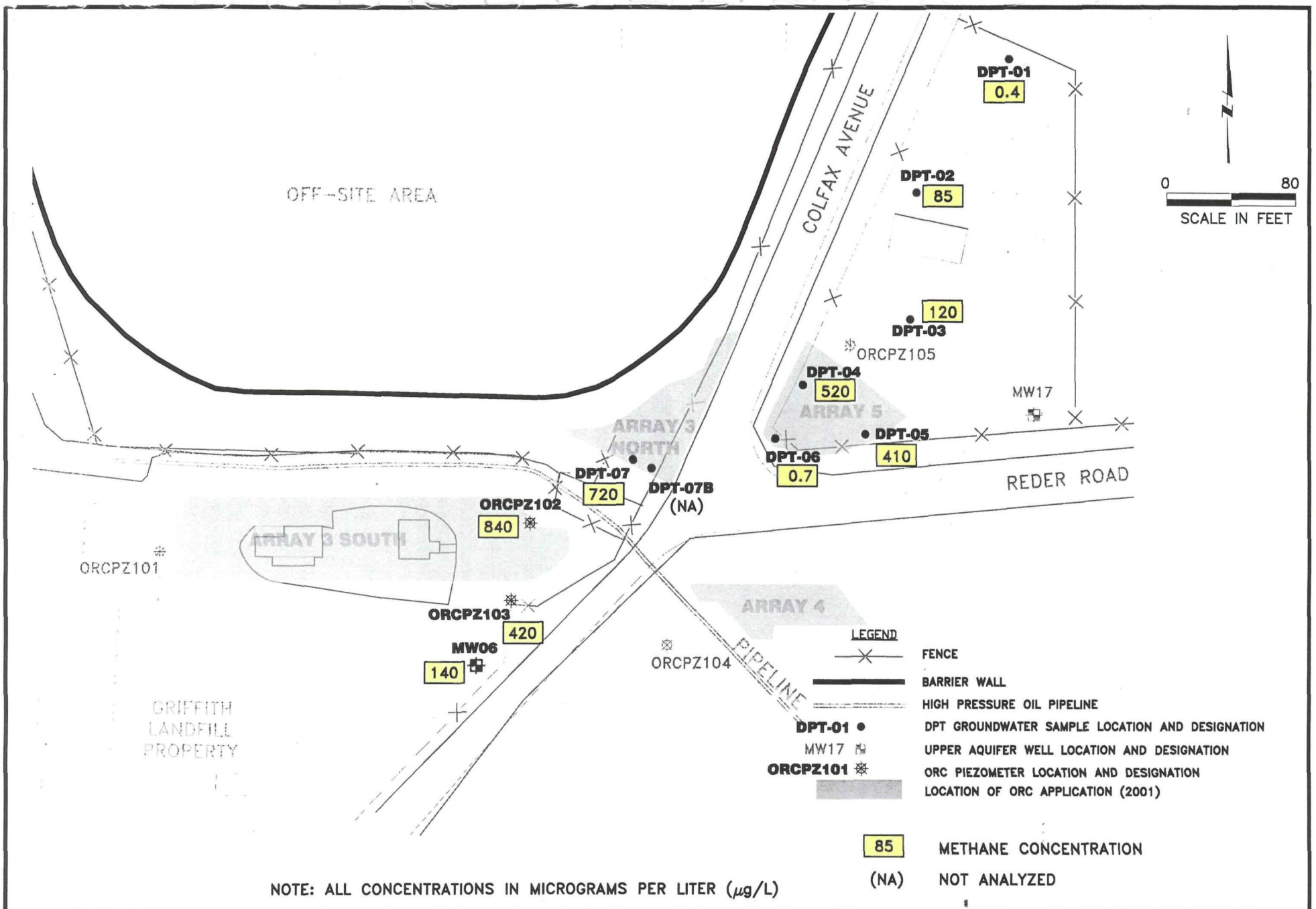

NOTE: ALL CONCENTRATIONS IN MICROGRAMS PER LITER ($\mu g/L$)

MWH	PHASE 3 INVESTIGATION REPORT AMERICAN CHEMICAL SERVICE NPL SITE GRIFFITH, INDIANA	CONCENTRATION OF METHANE IN GROUNDWATER	FIGURE 8

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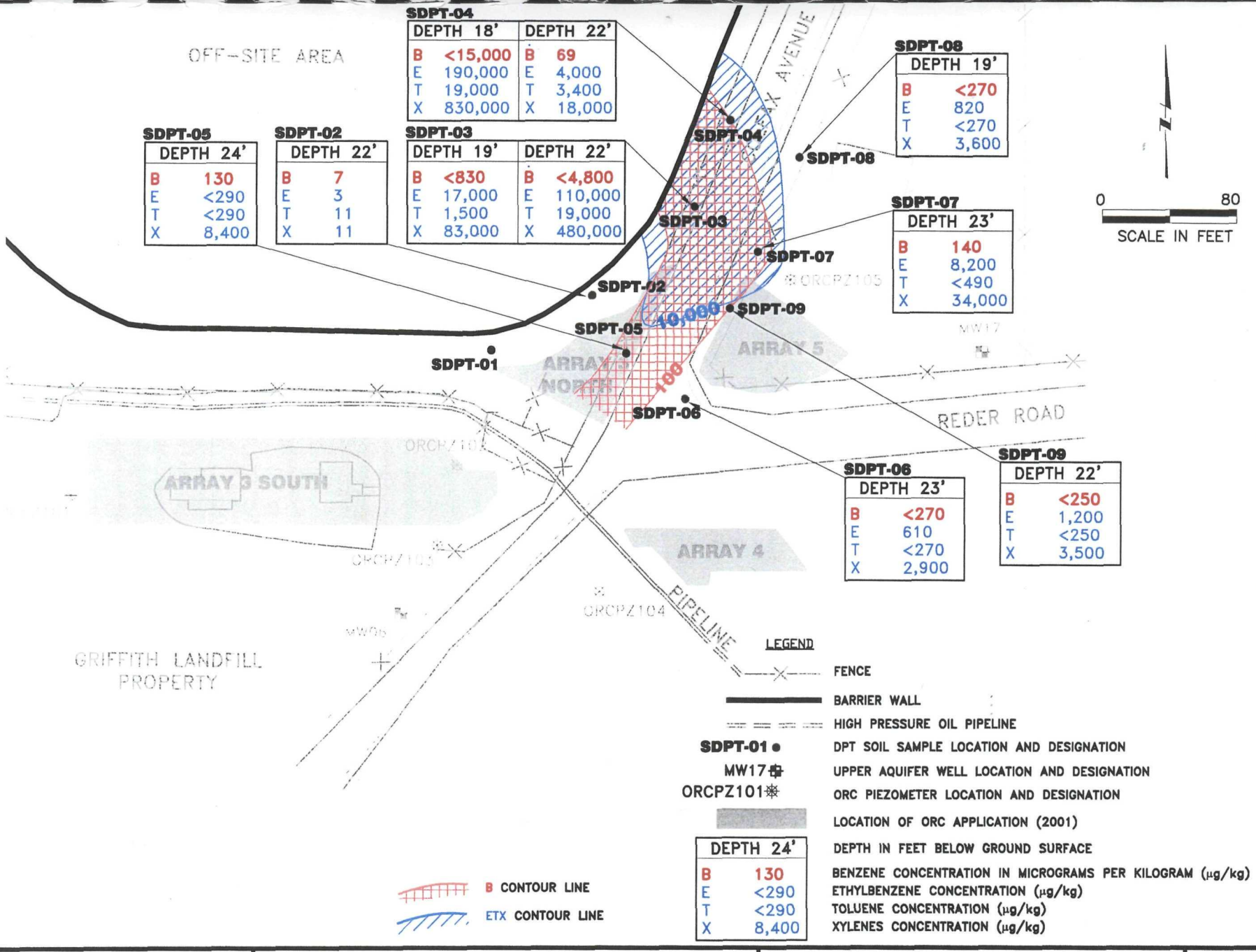


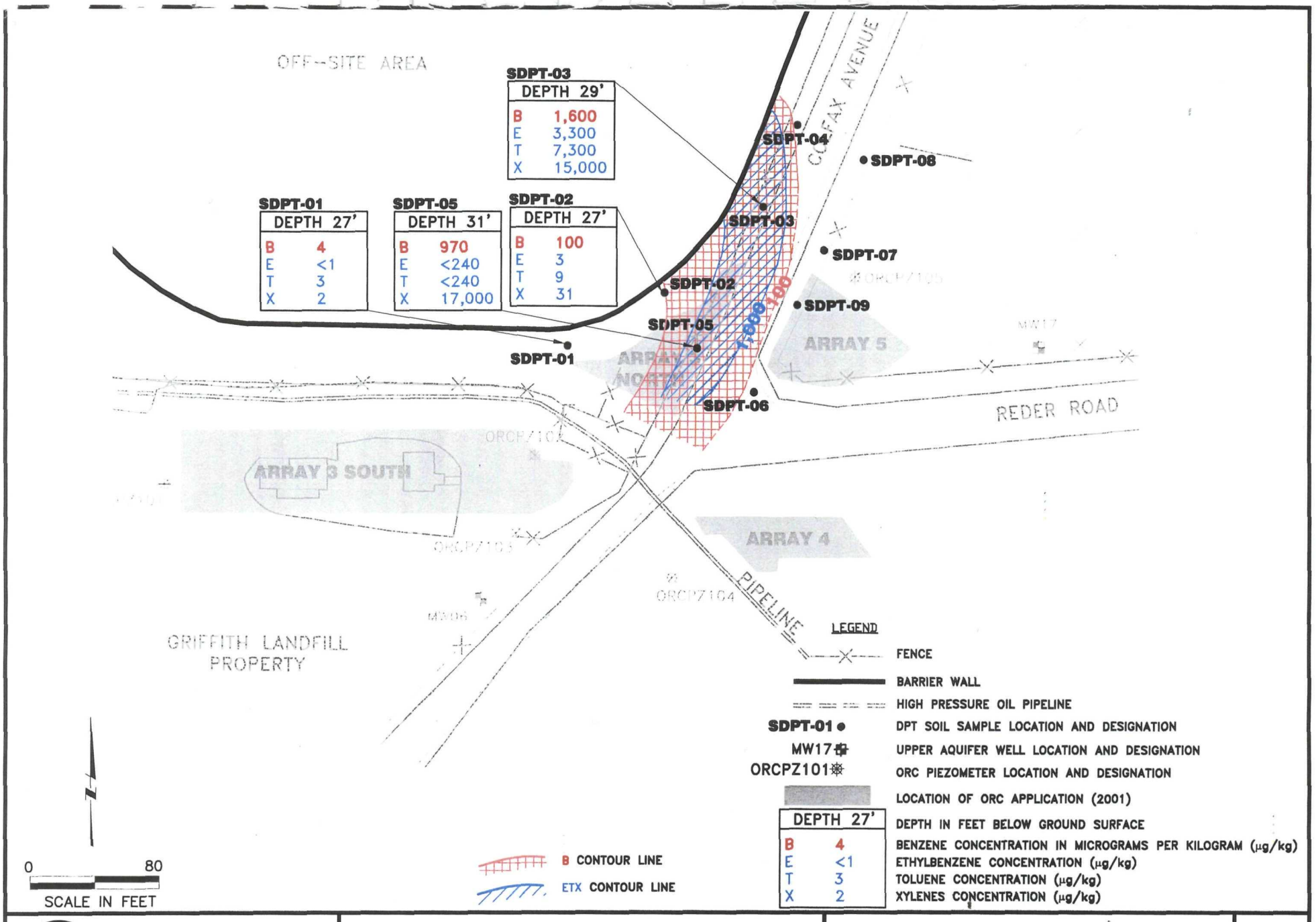
MWH

AMERICAN CHEMICAL SERVICE NPL SITE
GRIFFITH, INDIANA

CONCENTRATIONS OF BETX
IN SOIL NEAR THE WATER TABLE

FIGURE 9

J:\209\0601 ACS\0109 ORC_South\Drawings\RESULTS IN SOIL.dwg, 09/03/03 01:41:21 PM CAS/MBM



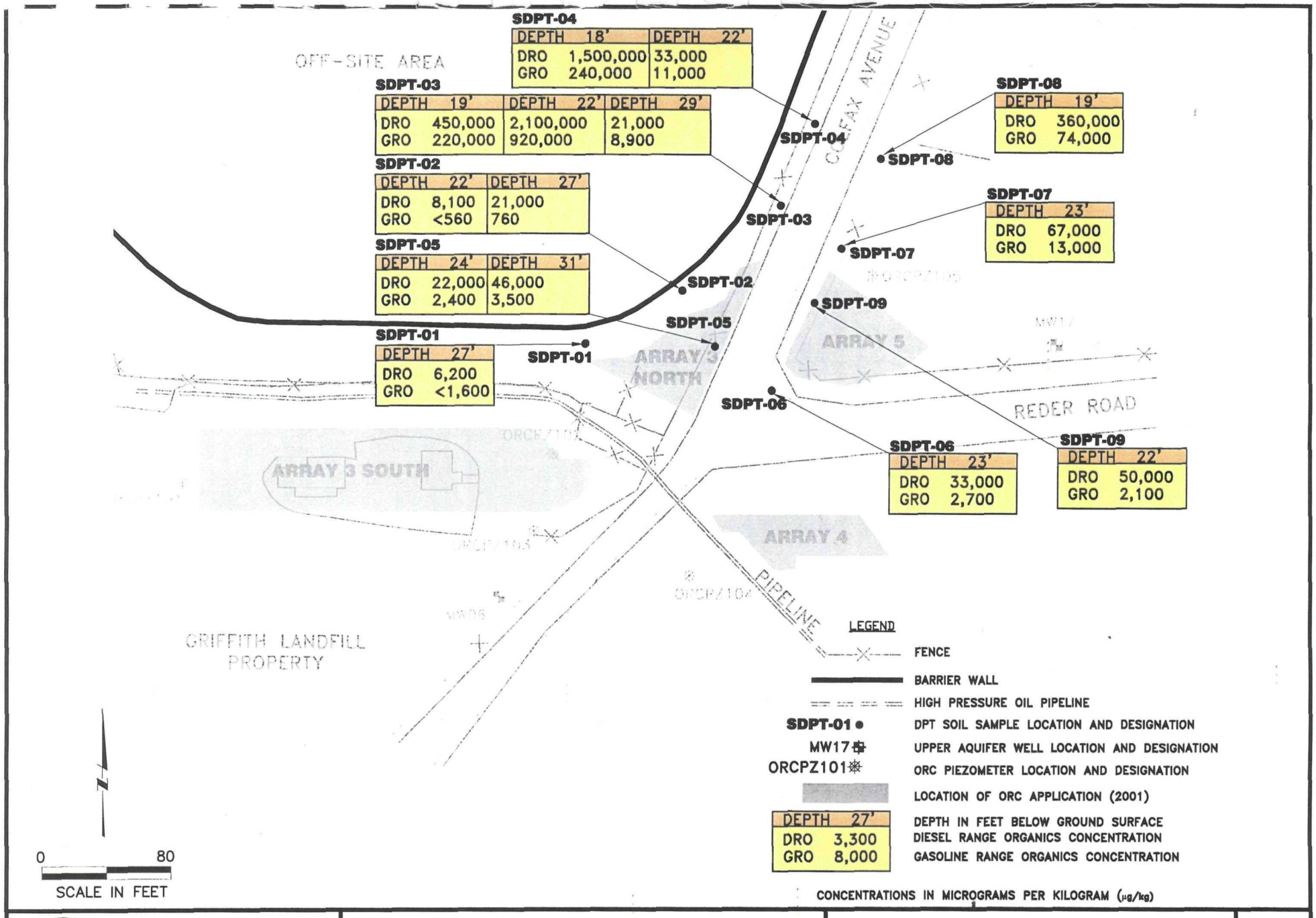
MWH

AMERICAN CHEMICAL SERVICE NPL SITE
GRIFFITH, INDIANA

CONCENTRATIONS OF BETX
IN SOIL BELOW THE WATER TABLE

FIGURE
10

J:\209\0601 ACS\0109 ORC_South\Drawings\RESULTS IN SOIL.dwg, 09/03/03 01:44:16 PM CAS/MBM



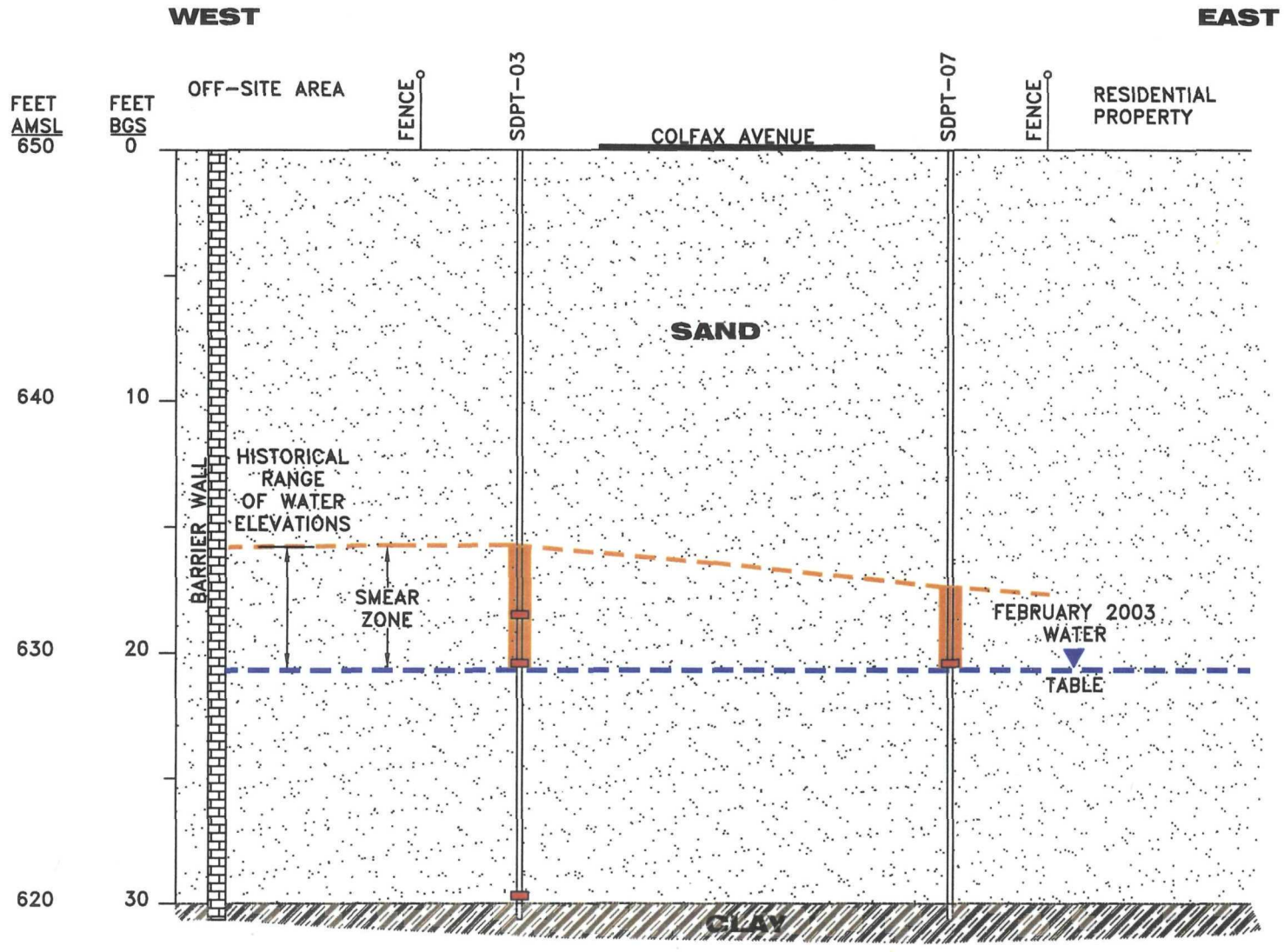
MWH

AMERICAN CHEMICAL SERVICE NPL SITE
GRIFFITH, INDIANA

CONCENTRATIONS OF DRO AND GRO IN SOIL

FIGURE 11

J:\209\0601 ACS\0109 ORC_South\Drawings\RESULTS IN SOIL.dwg, 09/03/03 01:48:28 PM CAS/MBM



LEGEND:

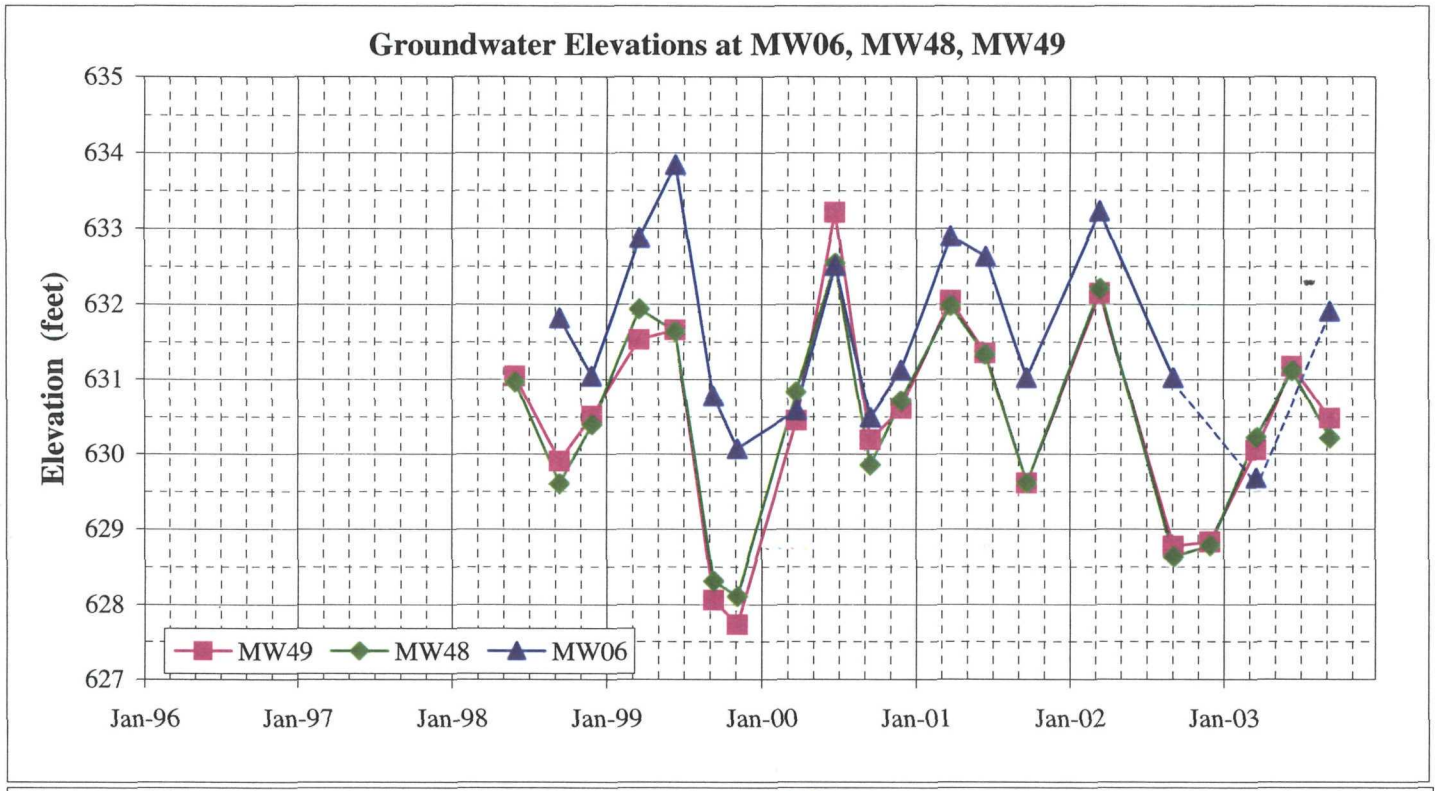
- STAINED/IMPACTED SOILS
- SOIL SAMPLE LOCATION
- BGS BELOW GROUND SURFACE
- AMSL ABOVE MEAN SEA LEVEL

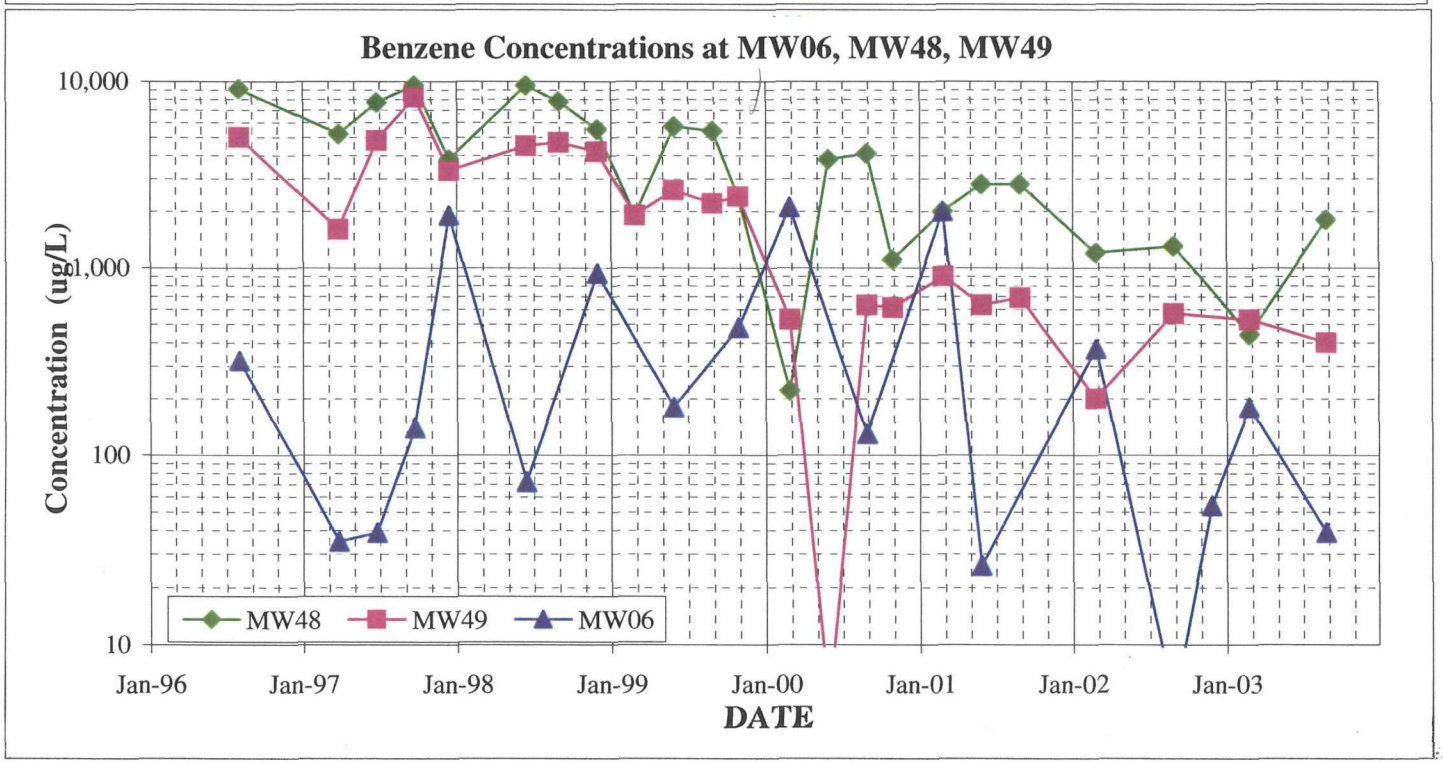
NOT TO SCALE

MWH	AMERICAN CHEMICAL SERVICE NPL SITE GRIFFITH, INDIANA	CONCEPTUAL CROSS-SECTION ACROSS COLFAX AVENUE	FIGURE 12

J:\209\0601 ACS\0109 ORC_South\Drawings\CROSS SECTION.dwg, 09/04/03 01:31:55 PM

Figure 13
Groundwater Elevation Trends and Benzene Concentrations at Monitoring Wells MW06, MW48, and MW49
American Chemical Service NPL Site
Griffith, Indiana

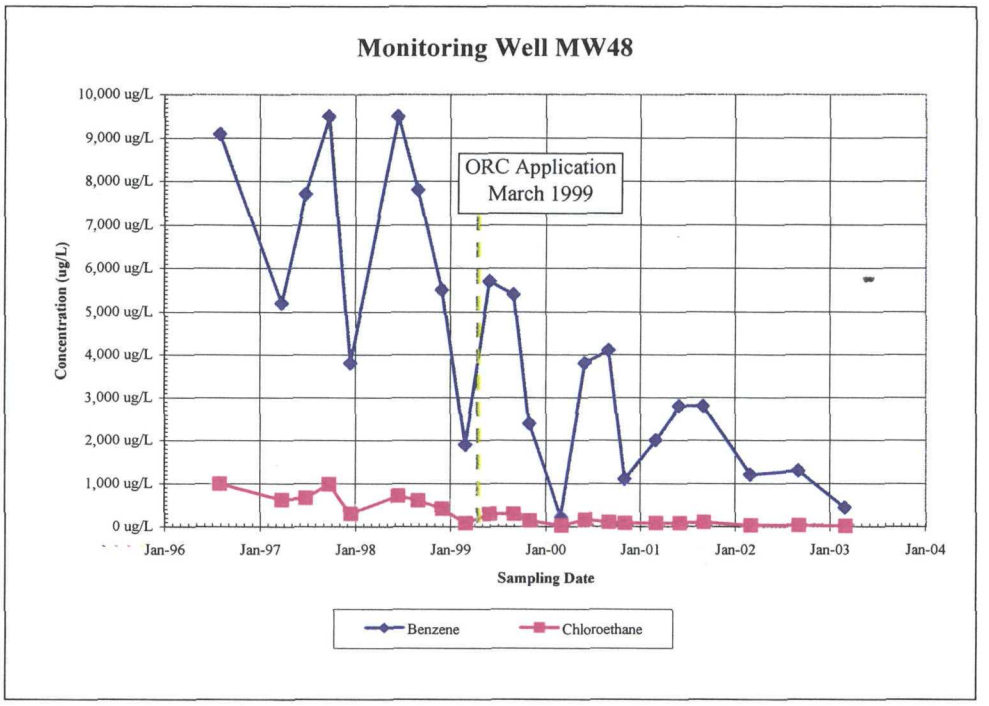




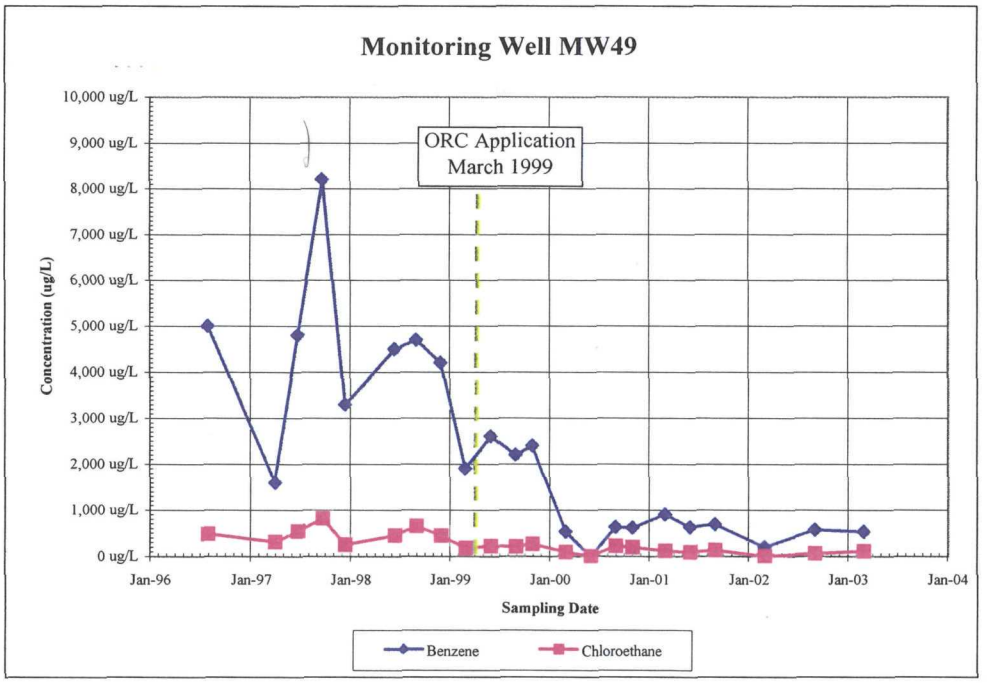
CAS/PJV/jmf
J:/209/0601/0109/Phase 3/Report/Figure13.xls[Figure 13]

Figure 14. Benzene and Chloroethane Concentration Trends at MW48 and MW49
ORC Phase 3 Investigation
American Chemical Service NPL Site
Griffith, Indiana

MW48		
Date	**Benzene**	**Chloroethane**
August-96	9,100 ug/L	1,000 ug/L
March-97	5,200 ug/L	620 ug/L
June-97	7,700 ug/L	670 ug/L
September-97	9,500 ug/L	980 ug/L
December-97	3,800 ug/L	300 ug/L
June-98	9,500 ug/L	720 ug/L
September-98	7,800 ug/L	610 ug/L
December-98	5,500 ug/L	420 ug/L
March-99	1,900 ug/L	83 ug/L
June-99	5,700 ug/L	290 ug/L
September-99	5,400 ug/L	290 ug/L
November-99	2,400 ug/L	140 ug/L
March-00	220 ug/L	24 ug/L
June-00	3,800 ug/L	160 ug/L
September-00	4,100 ug/L	100 ug/L
November-00	1,100 ug/L	78 ug/L
March-01	2,000 ug/L	78 ug/L
June-01	2,800 ug/L	80 ug/L
September-01	2,800 ug/L	100 ug/L
March-02	1,200 ug/L	33 ug/L
September-02	1,300 ug/L	32 ug/L
March-03	440 ug/L	15 ug/L



MW49		
Date	**Benzene**	**Chloroethane**
August-96	5,000 ug/L	480 ug/L
April-97	1,600 ug/L	310 ug/L
June-97	4,800 ug/L	540 ug/L
September-97	8,200 ug/L	810 ug/L
December-97	3,300 ug/L	250 ug/L
June-98	4,500 ug/L	450 ug/L
September-98	4,700 ug/L	650 ug/L
December-98	4,200 ug/L	440 ug/L
March-99	1,900 ug/L	180 ug/L
June-99	2,600 ug/L	220 ug/L
September-99	2,200 ug/L	210 ug/L
November-99	2,400 ug/L	260 ug/L
March-00	530 ug/L	91 ug/L
June-00	BDL	BDL
September-00	630 ug/L	220 ug/L
November-00	610 ug/L	190 ug/L
March-01	900 ug/L	120 ug/L
June-01	630 ug/L	91 ug/L
September-01	690 ug/L	130 ug/L
March-02	200 ug/L	BDL
September-02	570 ug/L	60 ug/L
March-03	530 ug/L	110 ug/L

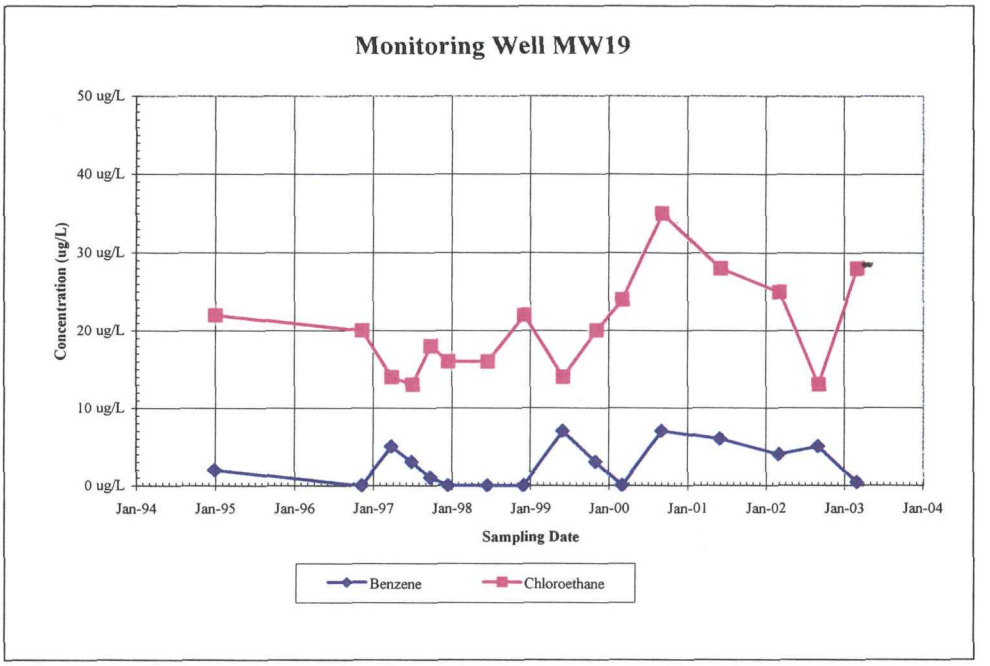


Notes:
BDL = Below the Detection Limit
ug/L = micrograms per liter

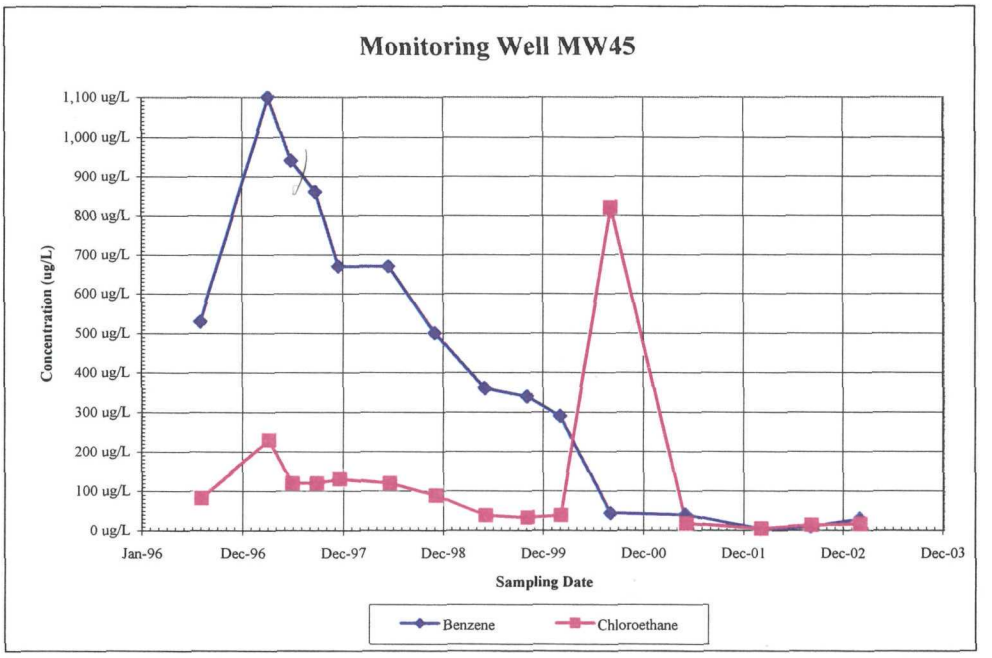
CAS/MBM
J:209\0601\Phase 3\Repor\Figure14_15_16.xls[FIG14]

Figure 15. Benzene and Chloroethane Concentration Trends at MW19 and MW45
ORC Phase 3 Investigation
American Chemical Service NPL Site
Griffith, Indiana

MW19		
Date	**Benzene**	**Chloroethane**
December-94	2 ug/L	22 ug/L
November-96	BDL	20 ug/L
March-97	5 ug/L	14 ug/L
June-97	3 ug/L	13 ug/L
September-97	1 ug/L	18 ug/L
December-97	BDL	16 ug/L
June-98	BDL	16 ug/L
December-98	BDL	22 ug/L
June-99	7 ug/L	14 ug/L
November-99	3 ug/L	20 ug/L
March-00	BDL	24 ug/L
September-00	7 ug/L	35 ug/L
June-01	6 ug/L	28 ug/L
March-02	4 ug/L	25 ug/L
September-02	5 ug/L	13 ug/L
March-03	0.4 ug/L	28 ug/L

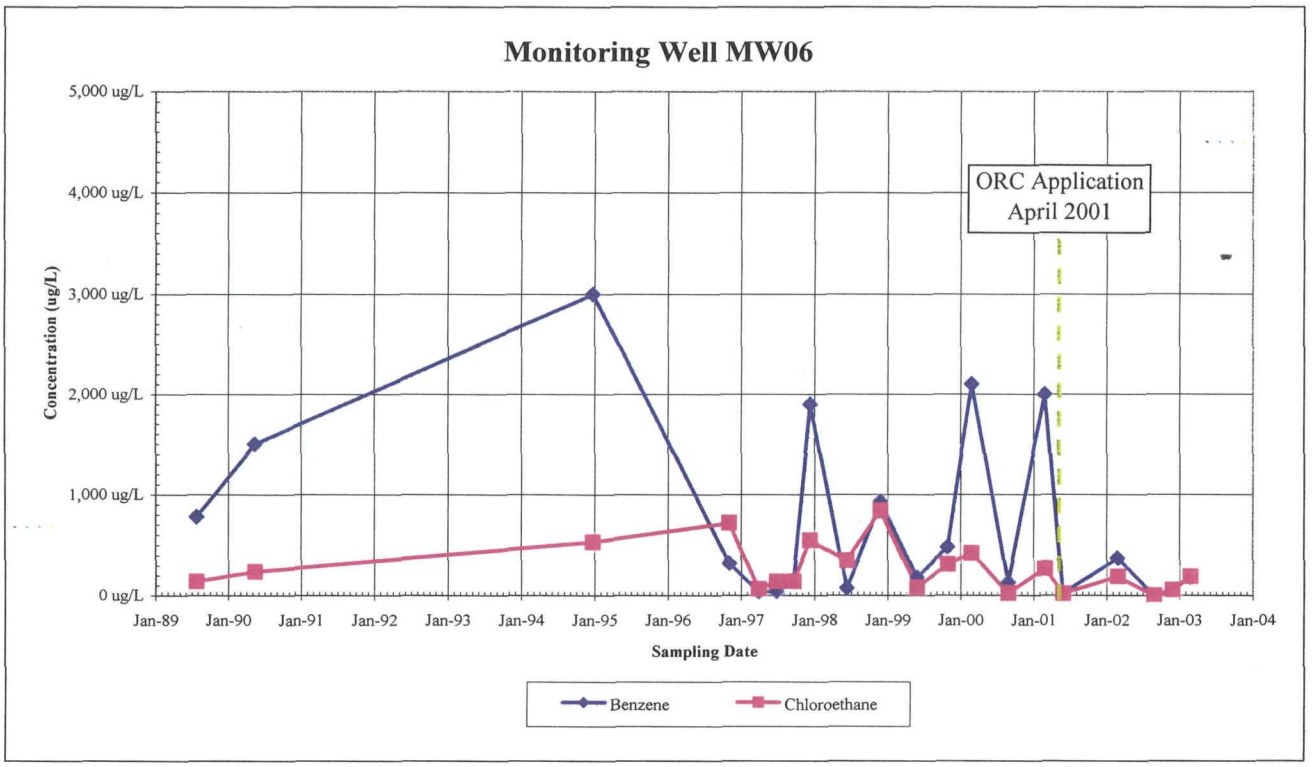


MW45		
Date	**Benzene**	**Chloroethane**
August-96	530 ug/L	82 ug/L
April-97	1,100 ug/L	230 ug/L
June-97	940 ug/L	120 ug/L
September-97	860 ug/L	120 ug/L
December-97	670 ug/L	130 ug/L
June-98	670 ug/L	120 ug/L
December-98	500 ug/L	88 ug/L
June-99	360 ug/L	38 ug/L
November-99	340 ug/L	32 ug/L
March-00	290 ug/L	38 ug/L
September-00	43 ug/L	820 ug/L
June-01	39 ug/L	17 ug/L
March-02	3 ug/L	4 ug/L
September-02	8 ug/L	13 ug/L
March-03	29 ug/L	15 ug/L



Notes:
BDL = Below the Detection Limit
ug/L = micrograms per liter

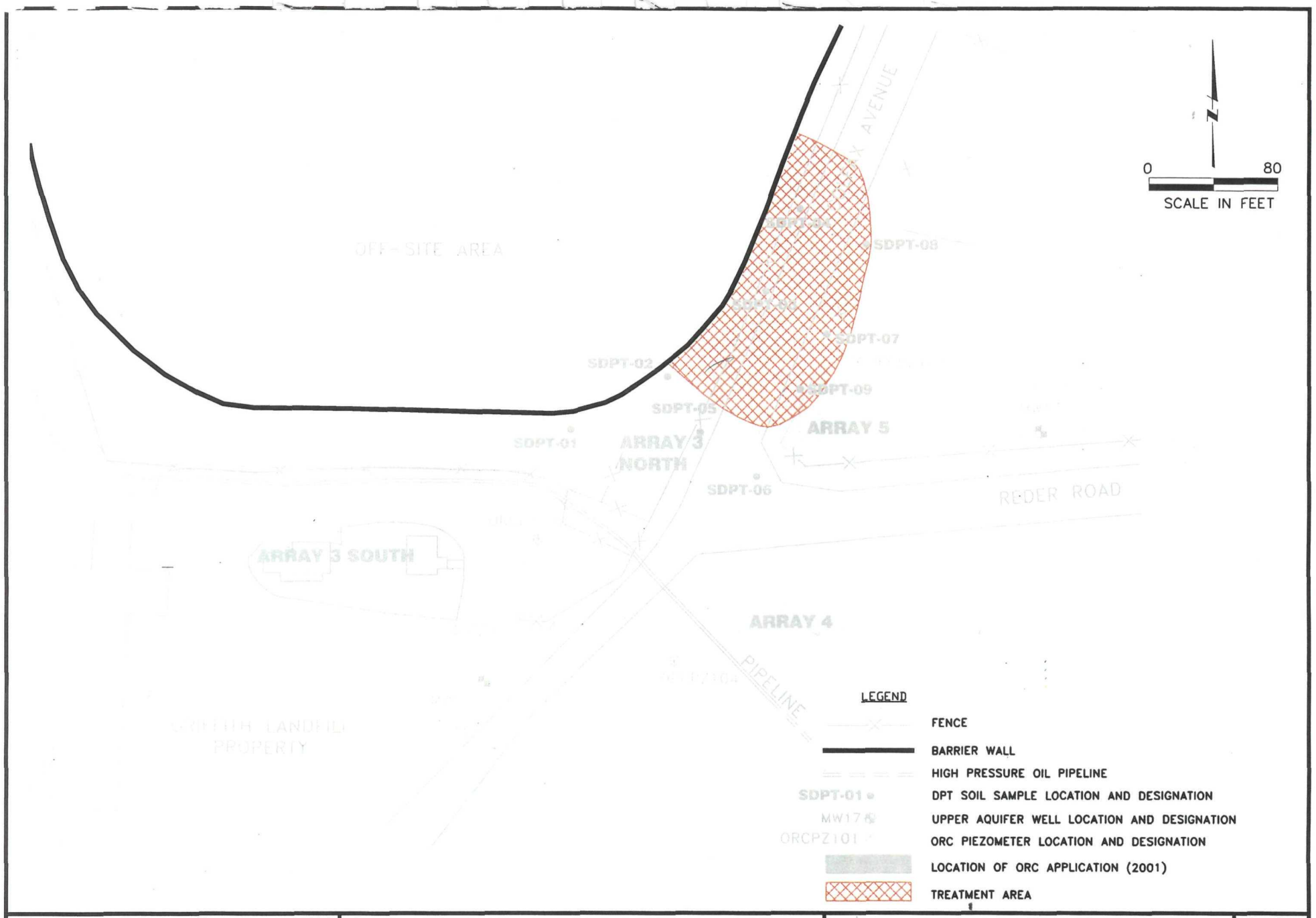
Figure 16. Benzene and Chloroethane Concentration Trends at MW06
ORC Phase 3 Investigation
American Chemical Service NPL Site
Griffith, Indiana



Date	Benzene	Chloroethane
August-89	780 ug/L	140 ug/L
May-90	1,500 ug/L	240 ug/L
December-94	3,000 ug/L	530 ug/L
November-96	320 ug/L	720 ug/L
April-97	35 ug/L	67 ug/L
July-97	39 ug/L	140 ug/L
September-97	140 ug/L	140 ug/L
December-97	1,900 ug/L	550 ug/L
June-98	72 ug/L	350 ug/L
December-98	930 ug/L	840 ug/L
June-99	180 ug/L	78 ug/L
November-99	480 ug/L	310 ug/L
March-00	2,100 ug/L	420 ug/L
September-00	130 ug/L	22 ug/L
March-01	2,000 ug/L	270 ug/L
June-01	26.0 ug/L	18 ug/L
March-02	370 ug/L	190 ug/L
September-02	BDL	BDL
December-02	54 ug/L	56 ug/L
March-03	180 ug/L	190 ug/L

Notes:
BDL = Below the Detection Limit
ug/L = micrograms per liter

CAS/MBM
J:209\0601\Phase 3\Repor\Figure14_15_16.xls[FIG16]



MWH

AMERICAN CHEMICAL SERVICE NPL SITE
GRIFFITH, INDIANA

EXTENT OF POTENTIAL
TREATMENT AREA

FIGURE
17

J:\209\0601 ACS\0109 ORC_South\Drawings\TREATMENT AREA.dwg, 04/02/2004 11:25:50 AM CAS/MBM

APPENDIX A

Soil Boring Logs

MWH
MONTGOMERY WATSON HARZA

SOIL BORING LOG

Facility/Project Name: ACS NPL Site
Location: Griffith, IN

Boring No.: SDPT-01
Project No.: 20[illegible]

Drilling Company: Mid-America Drilling
Driller's Name: Jeff Acosta
Driller's Helper: —
Drill Method: DPT Rig
Water Level: 22.
Sample Hammer Torque: N/A

State Plane: N/A N, N/A E
Local Grid Location: N/A ft ☐ N ☐ S N/A ft ☐ E ☐ W
____ 1/4 of ____ 1/4 of Section ____, T ____ N,R ____ E/W
Surface Elevation: 652.4
Borehole Diameter at Screen: N/A

Logger: C. Smith / R. Stein
Editor: C. Smith
Start Date: 2/19/03 0850
End Date: 1050

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Depth	VISUAL CLASSIFICATION	Penetrometer (Tons/sq. ft.)	PID	Description	Remarks
1	D	—	—	100%	1	SILTY CLAY (CL), black gray to lt. yellow gray, organic-rich, hard to stiff, low plasticity, dry (clay cap); no observable contamination		0.0		picture
2	D	—	—	100%	4	SILTY CLAY (CL); dk. brown, w/ some mottling (black + red), trace moisture, hard, no evident contamination. (clay cap?)		0.0		
					5					
3	D	—	—	100%	8	SILTY CLAY (CL), dk. gray, stiff, trace sand + roots/organic matter.		0.4		
					10					
4	M	—	—	60%	12	SAND (SW), yellow, fine grained, well graded, loose, moist, no odor or noticable impacts 2" silt seam @ 15.5'; sand coarsening slightly with depth to fine-med. grained w/ trace gravel		.6		
					15					
5	M	—	—	60%	16	SAND (SW) same as above.		15		picture
6	M/S	—	—	80%	20	SAND (SW) same as above. no odor or visible contamination water at 22'. Bottom 2" turning gray in color.		20		▼ @ 22'
7	S	—	—	100%	24	SAND (SW) same as above gray color diminishes @ 27'. Very slight odor.		80		2 pictures
					25					sampled 27'
									X	SDPT 01-27
8	S	—	—	100%	28	SAND (SW) same as above; lt. gray color very slight odor		440		@1050
					30					picture
9	S	—	—	100%	32	SAND (SW) same as above; very slight odor high PID readings likely due to high moisture content.		550		no odor in sands above clay
10	S	—	—	100%	35	36.5' SILTY CLAY (CL) very stiff, gray color. no odor		700	36.5'	EOB = 40'

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MWH
MONTGOMERY WATSON HARZA

SOIL BORING LOG

Facility/Project Name: ACS NPL Site
Location: Griffith IN

Boring No.: SDPT-02
Project No.: 2040EC1.0109

Drilling Company: Mid-America Drilling
Driller's Name: Jeff Austa
Driller's Helper: —
Drill Method: DPT Rig
Water Level: 22
Sample Hammer Torque: N/A

State Plane: — N, — E
☐ N ☐ E
Local Grid Location: — ft ☐ S — ft ☐ W
— 1/4 of — 1/4 of Section —, T — N, R — E/W
Surface Elevation: 652.6
Borehole Diameter at Screen: —

Logger: C Smith / R. Stein
Editor: C. Smith
Start Date: 2/19/03 1100
End Date: 1245

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Depth	VISUAL CLASSIFICATION	Penetrometer (Tons/sq. ft.)	PID	Description	Remarks
1	D	—	—	100%	1	SILTY CLAY (CL) black to dk. grey + tan organic rich at surface, stiff, low plasticity, dry (clay cap)		N/A		
2	D	—	—	100%	4	SILTY CLAY, same as above (clay cap) to 8'		N/A		
					5					
						8-10'				
3	D	—	—	100%	8	SAND (SP), yellow, fine grained, well sorted, dry, loose, no odor		N/A		picture
					10	10'-10.2' SILT (ML) olive gray, moist				
						10.2'-12' SAND (SP), yellow, dense, well sorted, dry				
4	M	—	—	100%	12	12'-16' SAND (SP), yellow, fine grained med. dense, moist, no odors or visible contamination.		N/A		
					15					
5	M	—	—	90%	16	16'-18' SAND, same as above		NA		
						18'-22' SAND (SP), yellow-orange, coarsening w/ depth to med. grained, moist, little to trace small gravel, sub rounded to well rounded				picture
6	M/S	—	—	90%	20			50		
						22'-22.3' SAND (SP) BLACK (STAINED) medium grained, wet, slight odor		70	☒	Sampled SDPT02-22 @ 1140 (picture) (staining)
7	S	—	—	100%	24	22.3'-24' SAND (SW), dark gray, wet, medium dense, coarse grained, well graded, no odor				
					25					
						24'-25' SAND, same as above		145	☒	Sampled @ 1240 SDPT02-27 (high PID)
8	S	—	—	30%	28	25'-33' SAND (SP) dark gray, fine grained dense, saturated, slight odor				
					30			20		
9	S	—	—	30%	32	33' SILTY CLAY (CL); olive gray, stiff, dry to moist				
					36	EOB @ 36'				

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MWH
MONTGOMERY WATSON HARZA

SOIL BORING LOG

Facility/Project Name: ACS NPL Site
Location: Griffith, IN

Boring No.: SDPT-03
Project No.: 2010601 0109

Drilling Company: Mid-America Drilling
Driller's Name: Jeff Acosta
Driller's Helper: —
Drill Method: DPT Rig
Water Level: 22
Sample Hammer Torque: —

State Plane: — N, — E
☐ N ☐ E
Local Grid Location: — ft ☐ S — ft ☐ W
— 1/4 of — 1/4 of Section —, T — N, R — E/W
Surface Elevation: 649.6
Borehole Diameter at Screen: —

Logger: C. Smith / R. Stein
Editor: C. Smith
Start Date: 2/19/03 1315
End Date: 1440

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Depth	VISUAL CLASSIFICATION	Penetrometer (Tons/sq. ft.)	PID	Description	Remarks
1	D	—	—	100%	1	0'-1.5' GRAVEL (GW) black-gray - road gravel		1		
						1.5'-2.5' SAND (SW) yellow, stiff, trace gravel dry, no odor				
2	D	—	—	100%	4	2.5'-3.5' SILTY SAND (SW), very dense				
					5	3.5'-13' SAND (SP), yellow-orange fine to medium grained,				
								4		
3	D	—	—	100%	8					
					10					
4	D	—	—	100%	12			25		
						13'-16' SAND (SP), gray-green, med. grained trace gravel, slight discoloration at 14'				
					15					
5	D/M	—	—	80%	16	16'-18' SAND/GRAVELLY SAND (SW), same as above strong odor				
						18'-20' GRAVELLY SAND (SW) - dk. brown/black to dk green-gray, strong staining very strong odors, med. dense				sampled @ 1415 SDPT03-19
								400		
6	M/W	—	—	80%	20					
						21.9'-22.5' GRAVEL (GW), dk brown - very strong odor, product/NAPL on soil		485		sampled @ 1350 SDPT03-22
						22.5'-24' GRAVELLY SAND (SW) dk. gray				
7	W	—	—	80%	24	24'-27' GRAVELLY SAND (SW), same as above increasing gravel content + size to 1" diam. at 27', subrounded				
					25			12		
						27'-29.5' SAND (SP) gray, fine grained, saturated odor present, but no staining. STRONG ODOR AT 29', above clay				
8	S	—	—	80%	28					sampled @ 1430 SDPT03-29
					30	29.5' CLAY (CL)				
					32	EOB @ 32'				
					35					

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MWH
MONTGOMERY WATSON HARZA

SOIL BORING LOG

Facility/Project Name: ALS NPL SITE
Location: GRIFFITH, IN

Boring No.: SDPT04
Project No.: 2090601.0104

Drilling Company: Mid America Drilling
Driller's Name: Jeff Acosta
Driller's Helper: —
Drill Method: DPT Rig
Water Level: 21.5
Sample Hammer Torque: —

State Plane: — N, — E
Local Grid Location: — ft ☐ N ☐ S — ft ☐ E ☐ W
— 1/4 of — 1/4 of Section —, T — N,R — E/W
Surface Elevation: 648.7
Borehole Diameter at Screen: —

Logger: C. Smith / R. Stein
Editor: C. Smith
Start Date: 2/19/03 1440
End Date: 1550

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Depth	VISUAL CLASSIFICATION	Penetrometer (Tons/sq. ft.)	PID	Description	Remarks
						BLIND DRILL TO 12 FT. Below ground surface				
					5					
					10					
1	M	—	—	50%	12					
						SAND (SW), lt. brown to yellow-orange, fine to medium grained, w/ trace gravel + coarse sand, moist, well graded, slight odor @ 16'		10		
					15					
					16			32		sampled @ 1510
						17.5'-18' GRAVEL (GW), dry, black stained strong odor				SDPT04-18
						18.-18.3 SILTY CLAY (CH), high plasticity, soft.				✓ (staining)
						18.5-28 SAND (SW). wet at 21.5', dk. gray to gray color; visual impacts diminish w/ depth, as do PID readings		398		
					20					
								450		sampled @ 1550
								500	▼	SDPT04-22
										(high PID)
					24	gravelly sands, grading to fine sand + silt at 27. (coarsening upward sequence)		40		
					25	slight odor, no visible impacts		35		
								18		
					28					
						28'- CLAY (CL)				
					30					
					32					
						EOB @ 32'				
					35					

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MWH
MONTGOMERY WATSON HARZA

SOIL BORING LOG

Facility/Project Name: ACS NPL Site
Location: Griffith, IN

Boring No.: SDPT05
Project No.: 20[illegible]

Drilling Company: Mid America Drilling
Driller's Name: Jeff Acosta
Driller's Helper: —
Drill Method: DPT Rig

Water Level: 24
Sample Hammer Torque: —

State Plane: — N, — E
Local Grid Location: — ft ☐ N ☐ S — ft ☐ E ☐ W
— 1/4 of — 1/4 of Section —, T — N,R — E/W
Surface Elevation: 651.9
Borehole Diameter at Screen: —

Logger: C. Smith / R. Stein
Editor: C. Smith
Start Date: 2/20/03 1435
End Date: 1550

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Depth	VISUAL CLASSIFICATION	Penetrometer (Tons/sq. ft.)	PID	Description	Remarks
						Blind drill to 16 feet below ground surface				
					5					
					10					
					15					
1	D	—	—	100%	16	16'-18.8' SAND (SW), yellow orange, dry, loose to medium dense, no odor, fine grained		3		
								4		
						18.8'-24 SAND (SP) lt. brown, coarse, trace fine gravel, + fine sand, no odor or visual contamination		2		
								2		
2	D	—	—	100%	20					
						coarser lenses at 23'		6		
								7		
						no odors				wet @ 24'
3	W	—	—	60%	24	24'-31.5 SAND (SP), gray, fine grained, grading to coarse sand w/ trace gravel @ 26'		2		
					25	very slight odor		12		Sampled @ 1525 SDPT05-24 (water table/odor)
4	S	—	—	100%	28	SAND (SP) gray, fine grained slight odor		6		
					30					sampled @ 1545
						31.5-32 clay (CL) gray, stiff		12		SDPT05-33 (31)
					32					(high PID/clay
						EOB @ 32		6		interface)
					35					

sblog.xls

MWH
MONTGOMERY WATSON HARZA

SOIL BORING LOG

Facility/Project Name: ACS NPL Site
Location: Griffith, IN

Boring No.: SDPT06
Project No.: [illegible]

Drilling Company: Mid America Drilling
Driller's Name: Jeff Acosta
Driller's Helper: —
Drill Method: DPT Rig
Water Level: 23
Sample Hammer Torque: —

State Plane: — N, — E
Local Grid Location: — ft ☐ N ☐ S — ft ☐ E ☐ W
— 1/4 of — 1/4 of Section —, T — N,R — E/W
Surface Elevation: 651.9
Borehole Diameter at Screen: —

Logger: C.Smith / R.Stein
Editor: C.Smith
Start Date: 2/20/03 1300
End Date: 1415

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Depth	VISUAL CLASSIFICATION	Penetrometer (Tons/sq. ft.)	PID	Description	Remarks
						Blind drill to 16 ft. below ground surface				
					5					
					10					
					15					
1	D	—	—	100%	16	16.0 19.8' SAND (SP) yellow, fine sand, med. dense, no odor, dry		15		
								35		
								20		
						19.8'-20 silty CLAY (CH), gray, soft, plastic, moist		15		
2	D/W	—	—	100%	20	20'-21' SAND (SP) yellow, fine grained poorly graded, loose, dry		30		
								70		
								80		Sampled @ 1410
						21'-27' SAND (SW) dark gray to black, w/ little gravel, coarse sand, slight odor		145		SDPT06-23
3	W	—	—	60%	24			45		
					25			50		
						27'-28' SAND (SP) dark gray, fine, slight odor		65		
					28	EOB @ 28'; no clay encountered.				
					30					
					35					

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MWH
MONTGOMERY WATSON HARZA

SOIL BORING LOG

Facility/Project Name: ACS NPL Site
Location: Griffith, IN

Boring No.: SDPT 07
Project No.: 20.0601.0104

Drilling Company: Mid-America Drilling
Driller's Name: Jeff Acosta
Driller's Helper: —
Drill Method: DPT Rig

Water Level: 22.5
Sample Hammer Torque: —

State Plane: — N, — E
Local Grid Location: — ft ☐ N ☐ S — ft ☐ E ☐ W
— 1/4 of — 1/4 of Section —, T — N,R — E/W
Surface Elevation: 650.5
Borehole Diameter at Screen: —

Logger: C. Smith / R. Stein
Start Date: 0830
Editor: C. Smith
End Date: 0950

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Depth	VISUAL CLASSIFICATION	Penetrometer (Tons/sq. ft.)	PID	Description	Remarks
						Blind drill to 12' below ground surface				
					5					
					10					
1	D	—	—	100%	12	12'-18' SAND (SP) yellow, fine to med. grained, loose, dry, no odor.		N/A		
					15	1cm silty clay seam @ 15'				
2	D	—	—	50%	16	18'-22.5' SAND (SW) olive gray to gray (staining) medium grained, w/ little gravel + coarse sand, strong odor		13		
								41		
3	D/W	—	—	60%	20	22.5'-23.5 SAND (SW) same as above, coarse grained very strong odor, wet at 22.5'		75		
										sampled ~~above~~ 0905
						1cm clay seam @ 23.5 w/ very high PID + strong odor above clay.		374		SDPT07-23
4	S	—	—	40%	24					
					25	23.5'-29.0' Gravelly SANDS (SW) gray, strong odor, no visible impacts, wet, fine grained matrix, med. dense.		26		
5	S	—	—	60%	28			38		
						29.0'-29.5' CLAY (CL)		23		
					30	29.5'-30' SAND (SW) white to med.		23		
						30'-32' CLAY (CL) stiff, gray, slight odor in clay				
					32					
						EOB @ 32'				
					35					

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MWH
MONTGOMERY WATSON HARZA

SOIL BORING LOG

Facility/Project Name: ACS NPL Site
Location: Griffith IN

Boring No.: SDPT08
Project No.: 2090601.010

Drilling Company: Mid America Drilling
Driller's Name: Jeff Arasta
Driller's Helper: —
Drill Method: DPT Rig

State Plane: — N, — E
Local Grid Location: — ft N/S — ft E/W
___ 1/4 of ___ 1/4 of Section ___, T ___ N, R ___ E/W

Water Level: 22.5
Sample Hammer Torque: —
Surface Elevation: 649.7
Borehole Diameter at Screen: —

Logger: C. Smith / R. Stein
Editor: C. Smith
Start Date: 2/20/03 1015
End Date: 1130

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Depth	VISUAL CLASSIFICATION	Penetrometer (Tons/sq. ft.)	PID	Description	Remarks
						Blind drill to 12 ft below ground surface				
					5					
					10					
1	D	—	—	80%	12	12 - 14.5 SAND (SP) yellow-tan, fine-grained dry, no odor		10		
					15	14.5 - 15.0 - SILTY SAND (SM) tan, fine grained, dry, no odor		20		
2	D	—	—	90%	16	15'-20' - SAND (SW) gray, coarse grained well graded, dry, no odor		25		sampled @ 1100
						darker-gray color very strong odor		150		SDPT08-19 +
								160		SDPT-DUP (1200)
3	D/W	—	—	100%	20	20-22.5 SAND (SP) yellow, fine grained, dry (slough?)		280		(high PID + stain)
						22.5'-23.0' GRAVEL (GW), black-stained well to sub rounded, black liquid (NAPL) present, strong odor		15		
								138		
4	S	—	—	50%	24	23'-31.8' SAND (SW), coarse, dark gray well graded, trace to little gravel slight odor		15		
					25			4		
5	S	—	—	30%	28					
					30			25		
					32	31.8'-32' CLAY (CL) dk gray, soft, plastic, trace gravel (slate)				
						EOB @ 32'				
					35					

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MWH
MONTGOMERY WATSON HARZA

SOIL BORING LOG

Facility/Project Name: ACS NPL Site
Location: Griffith, IN

Boring No.: SDPT-09
Project No.: 2090601.0109

Drilling Company: Mid America Drilling
Driller's Name: Jeff Acosta
Driller's Helper: —
Drill Method: DPT Rig
Water Level: 22
Sample Hammer Torque: —

State Plane: — N, — E
Local Grid Location: — ft ☐ N ☐ S — ft ☐ E ☐ W
— 1/4 of — 1/4 of Section —, T — N,R — E/W
Surface Elevation: 650.5
Borehole Diameter at Screen: —

Logger: C. Smith / R. Stein
Editor: C. Smith
Start Date: 2/20/03 1200
End Date: 1250

Sample No.	Moisture	Blows on Sampler 0/6	Blows on Sampler 6/12	Sample Recovery	Depth	VISUAL CLASSIFICATION	Penetrometer (Tons/sq. ft.)	PID	Description	Remarks
						Blind drill to 16' below ground surface				
					5					
					10					
					15					
1	D	—	—	100%	16	16'-19.5' SAND (SP) fine, yellow-orange darkyellow + bright orange bands at 19.3'-19.4', above stained layers		7		picture
										sampled @ 1245
						19.5'-21' GRAVELLY SAND (SW), black-stained sand is coarse, very strong odor, dry (upper limit of smear zones)		32		SDPT09-22
2		—	—	100%	20					(staining + odor)
						21'-28' SAND (SW) black color, grading to lighter shades of gray with depth, coarse to fine sand, strong odors diminishing w/ depth, saturated. no gravel to 24		44		
					24					
					25			49		
						trace gravel from 24'-28', no visible staining (lt gray), some odors.				
					28			55		
						EOB @ 28' no clay encountered.				
					30					
					35					

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APPENDIX B

Laboratory Analytical Reports and Data Validation Narratives

DATA VALIDATION NARRATIVES

Introduction

The following text is based on the validation of water samples collected at American Chemical Service, Inc. in December 2002.

Eleven groundwater samples and seven QA/QC samples were analyzed by CompuChem Laboratories of Cary, North Carolina for the following parameters.

- Volatile Organic Compounds (VOCs), SW-846 8260B (Sample Delivery Group (SDG) M2231, samples: ACSGWMW06-8, ACSORCPZ102-8, ACSORCPZ103-8; SDG P2231, samples: ACSGWDPT01, ACSGWDPT02, ACSGWDPT03, ACSGWDPT04, ACSGWDPT05, ACSGWDPT06, ACSGWDPT07, ACSGWDPT07B)

- Total and Dissolved Iron and Manganese SW-846 6010B (Sample Delivery Groups (SDGs) M2231, N2231, P2231, Q2231 samples: ACSGWMW06-8, ACSORCPZ102-8, ACSORCPZ103-8, ACSGWDPT01, ACSGWDPT02, ACSGWDPT03, ACSGWDPT04, ACSGWDPT05, ACSGWDPT06, ACSGWDPT07)

Data validation was conducted in accordance with procedures specified in the following as applicable to each method:

- Quality Assurance Plan: For the Remedial Design/Remediation Action at the American Chemical Service, Inc. NPL Site (MWH, 2001)

- USEPA Contract Laboratory Program Statement of Work for Organic Analysis OLM03.1 (U.S. EPA, August 1994)

- USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis Multi-Media, Multi-Concentration ILM04.1 (U.S. EPA, February 2000)

- National Functional Guidelines for Organic Data Review (U.S. EPA, 1999)

- National Functional Guidelines for Inorganic Data Review (U.S. EPA, 1994)

The following quality control samples were collected during the December 2002 sampling round:

- Field blanks ACSEB01-8, ACSORCEB02-8, ACSGWEB01

- Field duplicates ACSDUP01-8, ACSGWDUP01

- Trip blanks ACSTB01-8, ACSGWTB01

Volatiles Data Review (SW8260B)

1. Holding Times

All holding times and cooler temperatures met requirements for all samples except for some of the diluted sample analyses. However, because the original undiluted samples were analyzed within the acceptable holding time window and the holding time for the diluted sample analyses was only exceeded by one day, no data qualification is necessary. The results of the diluted and undiluted analyses are comparable.

2. GC/MS Instrument Performance Check

Instrument performance was checked at 12-hour intervals and all ion abundance requirements were met for all SDGs.

3. Initial Calibration

Initial calibration was performed using the required standard concentrations. Percent relative standard deviations (%RSD) were less than or equal to 30% for all compounds. Average relative response factors (RRF) for all VOCs and system performance check compounds (SPCCs) were within method and validation criteria for all SDGs.

4. Continuing Calibration

Continuing calibration was performed at the required frequencies. All continuing calibration RRFs for target compounds were greater than or equal to 0.05. The percent differences (%D) between the initial and continuing calibration RRFs were less than or equal to 25%.

5. Blanks

No volatile contaminants were found in the method blanks except for the following:

SDG	Method Blank ID	Compound	Conc.	Associated Samples	Conc.	Flag
M2231	VBLKCL	1,2,4-Trichlorobenzene	1 µg/L	None	NA	NA
P2231	VBLKGH	Toluene	4 µg/L	ACSGWDPT01	0.8 µg/L	UB
				ACSGWDPT02	3 µg/L	UB
				ACSGWDPT03	4 µg/L	UB
				ACSGWDPT04	12 µg/L	UB
				ACSGWDPT05	8 µg/L	UB
				ACSGWDPT06	17 µg/L	UB
				ACSGWDPT07	9 µg/L	UB
				ACSGWDPT07B	11 µg/L	UB
				ACSGWDUP01	23 µg/L	B
		1,3-Dichlorobenzene	0.3 µg/L	ACSGWDPT01	0.4 µg/L	UB
				ACSGWDPT02	0.3 µg/L	UB
				ACSGWDPT03	1 µg/L	UB
				ACSGWDPT04	2 µg/L	B
				ACSGWDPT05	2 µg/L	B
				ACSGWDPT06	2 µg/L	B
				ACSGWDPT07	1 µg/L	UB
				ACSGWDUP01	2 µg/L	B
				ACSGWDPT07B	1 µg/L	UB

SDG	Method Blank ID	Compound	Conc.	Associated Samples	Conc.	Flag
P2231	VBLKGH	1,4-Dichlorobenzene	0.3 µg/L	ACSGWDPT01	0.7 µg/L	UB
				ACSGWDPT02	2 µg/L	B
				ACSGWDPT03	6 µg/L	B
				ACSGWDPT04	11µg/L	B
				ACSGWDPT05	10 µg/L	B
				ACSGWDPT06	11 µg/L	B
				ACSGWDPT07	7 µg/L	B
				ACSGWDUP01	10 µg/L	B
				ACSGWDPT07B	6 µg/L	B
		1,2-Dichlorobenzene	0.4 µg/L	ACSGWDPT01	2 µg/L	UB
				ACSGWDPT02	3 µg/L	B
				ACSGWDPT03	25 µg/L	B
				ACSGWDPT04	24 µg/L	B
				ACSGWDPT05	14 µg/L	B
				ACSGWDPT06	16 µg/L	B
				ACSGWDPT07	11 µg/L	B
				ACSGWDUP01	23 µg/L	B
				ACSGWDPT07B	9 µg/L	B
P2231	VBLKKH	Toluene	0.1µg/L	ACSGWEB01	3 µg/L	B
				ACSGWTB01	3 µg/L	B
		Isopropyl Benzene	0.2 µg/L	None	NA	NA
		1,4-Dichlorobenzene	0.5 µg/L	ACSGWEB01	0.2 µg/L	UB
				ACSGWTB01	0.2 µg/L	UB
		1,2-Dichlorobenzene	0.5 µg/L	None	NA	NA
P2231	VBLKKJ	Toluene	0.3 µg/L	ACSGWDPT03 DL	2 µg/L	B
				ACSGWDPT04 DL	23 µg/L	B
				ACSGWDPT05 DL	4 µg/L	B
				ACSGWDPT06 DL	9 µg/L	B
				ACSGWDPT07 DL	4 µg/L	B
				ACSGWDPT07B DL	6 µg/L	B
				ACSGWDUP01	17 µg/L	B
		1,3-Dichlorobenzene	0.4 µg/L	ACSGWDPT03 DL	2 µg/L	UB
				ACSGWDPT05 DL	3 µg/L	B
				ACSGWDPT07 DL	2 µg/L	UB
		1,4-Dichlorobenzene	0.6 µg/L	ACSGWDPT03 DL	8 µg/L	B
				ACSGWDPT04 DL	32 µg/L	B
				ACSGWDPT05 DL	12 µg/L	B
				ACSGWDPT06 DL	22 µg/L	B
				ACSGWDPT07 DL	9 µg/L	B
				ACSGWDPT07B DL	11 µg/L	B
				ACSGWDUP01	27 µg/L	B
		1,2-Dichlorobenzene	0.5 µg/L	ACSGWDPT03 DL	23 µg/L	B
				ACSGWDPT04 DL	23 µg/L	B
				ACSGWDPT05 DL	13 µg/L	B
				ACSGWDPT06 DL	13 µg/L	B
				ACSGWDPT07 DL	10 µg/L	B
				ACSGWDPT07B DL	10 µg/L	B
				ACSGWDUP01	20 µg/L	B

Sample concentrations were compared to concentrations detected in the method blanks. The results for the above listed samples were at concentrations less than five times the concentration in the associated blanks, resulting in 'UB' sample data qualification. Where associated sample concentrations were detected at levels greater than five times the concentration in the associated blank, the data were qualified with a 'B'.

No volatile contaminants were found in the field blanks except for the following:

SDG	Field Blank ID	Compound	Conc.	Associated Samples	Conc.	Flag
P2231	ACSGWEB01	Acetone	2 µg/L	None	NA	NA
		Chloroform	0.6 µg/L	None	NA	NA
		Toluene	3 µg/L UB	Compound considered ND in field blank sample. No further qualification of associated sample data is necessary.	NA	NA
		1,4-Dichlorobenzene	0.2 µg/L UB	Compound considered ND in field blank sample. No further qualification of associated sample data is necessary.	NA	NA
M2231	ACSEB01-8	Carbon Disulfide	0.8 µg/L	None	NA	NA
		Benzene	4 µg/L	ACSDUP01-8	46	B
				ACSGWMW06-8	54	B
		Toluene	1 µg/L	ACSGWMW06-8	1	UB
		Xylene	2 µg/L	None	NA	NA
M2231	ACSORCEB02-8	Benzene	1 µg/L	ACSORCPZ102-8DL	3300	B
				ACSORCPZ103-8DL	360	B
		Toluene	1 µg/L	ACSORCPZ102-8	2	UB

Volatile contaminants found in the field blanks that were qualified with a 'UB' are considered not detected in the field blank sample. Sample concentrations were compared to concentrations detected in the associated field blanks. The results for the samples listed above at concentrations less than five times the concentration in the blanks, resulting in 'UB' sample data qualification. Where associated sample concentrations were detected at levels greater than five times the concentration in the associated blank, the data were qualified with a 'B'.

No volatile contaminants were found in the trip blanks with the following exceptions:

SDG	Trip Blank ID	Compound	Conc.	Associated Samples	Conc.	Flag
M2231	ACSTB01-8	Toluene	1 µg/L	ACSGWMW06-8	1 µg/L	UB
				ACSORCPZ102-8	2 µg/L	UB
P2231	ACSGWTB01	Toluene	3 µg/L B	Toluene data associated with this trip blank has been previously qualified based on the method blank evaluation.	NA	NA
		1,4-Dichlorobenzene	0.2 µg/L UB	Compound considered ND in trip blank sample. No further qualification of associated sample data is necessary.	NA	NA

Volatile contaminants found in the trip blanks that were qualified with a 'UB' are considered not detected in the trip blank sample. Sample concentrations were compared to concentrations detected in the associated trip blanks. The results for the samples listed above at concentrations less than five times the concentration in the blanks, resulting in 'UB' sample data qualification.

6. System Monitoring Compounds

System monitoring compounds (surrogate spike compounds) recoveries were within the QAPP QC limits with the following exceptions:

Sample ID	Surrogate	Percent Recovery	Control Limits	Compounds	Conc. (µg/L)	Flag
ACSGWMW06-8	Dibromofluoromethane	77	80-120	Chloroethane	56	J
	Toluene-d8	71		Benzene	54	J
	Bromofluorobenzene	73		Toluene	1	J
				All ND Compounds	<Reporting Limit	UJ

The percent recovery for the surrogates listed above was low for sample ACSGWMW06-8. The compounds that were detected above the reporting limit were qualified with a 'J' to indicate the low bias. All other compounds that were not detected above the reporting limit were qualified with a 'UJ'.

7. Matrix Spike/Matrix Spike Duplicates

Matrix Spike (MS) and matrix spike duplicate (MSD) samples were within QAPP QC limits except for the following:

Sample ID	Compound	Percent Recovery	Control Limits	Sample Conc. (µg/L)	Flag
ACSGWMW06-8 MS	Benzene	56%	60-140	54	J
ACSGWMW06-8 MSD		54%			

The percent recovery for benzene was low for both the matrix spike and matrix spike duplicate of sample ACSGWMW06-8. The benzene data for this sample was qualified with a 'J' to indicate the low bias.

8. Laboratory Control Samples

Laboratory control samples percent recoveries were within QAPP QC limits for all samples.

9. Regional Quality Assurance and Quality Control

Not applicable.

10. Internal Standards

All internal standard areas and retention times were within QAPP QC limits.

11. Target Compound Identification

All target compounds were identified appropriately by the laboratory. There was no significant shift in the retention times for the internal standard.

12. Compound Quantitation and Reported CRQLs

The reporting limits for each compound met the criteria outlined in the QAPP. Any concentrations reported below the reporting limit are qualified with a 'J' flag to indicate the data are estimated.

13. Tentatively Identified Compounds

Tentatively identified compounds were not evaluated.

14. System Performance

System performance was acceptable based on the instrument tune and calibration standards.

15. Overall Assessment of Data

The data reported are acceptable as qualified. The data that were qualified are the data that are summarized and discussed in Sections 5, 6 and 7 (Blanks, Surrogates, and Matrix Spikes/Matrix Spike Duplicates) of this report.

16. Field Duplicates

No VOCs were detected above the reporting limit in the field duplicate samples except for the following:

		Concentration (µg/L)		
SDG M2231	**Compound**	ACSGWMW06-8	ACSDUP01-8	**RPD**
	Chloroethane	56	53	5.5 %
	Benzene	54	46	16 %
	Toluene	1	<5	NA
SDG P2231	**Compound**	ACSGWDPT04 DL	ACSGWDUP01	**RPD**
	Chloroethane	98 J	150 J	NA
	Acetone	<630	310 J	NA
	Methylene chloride	16 J	<280	NA
	Benzene	230 J	280	NA
	Toluene	23 J	17 J	NA
	Chlorobenzene	66 J	76 J	NA
	Ethylbenzene	1800	2100	15.38%
	Isopropyl Benzene	41 J	40 J	NA
	1,4-Dichlorobenzene	32 J	27 J	NA
	1,2-Dichlorobenzene	23 J	20 J	NA
	Total Xylene	7700	9200	17.75%
	Methylcyclohexane	23	20 J	NA

Metals Data Review (SW6010B)

1. Holding Times

All holding times, cooler temperatures, and preservation met requirements for all samples.

2. Calibration

The calibration was performed using the required ICV and CCV standards. The calibration met the QAPP QC limits.

3. Blanks

There were no metals detected in the preparation blank samples except for the following:

Blank ID	Metal	Blank Concentration (µg/L)	Associated Samples	Sample Concentration (µg/L)	Flag
Preparation Blank	Iron	15.351	ACSGWMW06-8	1520	B
			ACSORCPZ102-8	23600	B
			ACSORCPZ103-8	1870	B

Sample concentrations were compared to concentrations detected in the blanks. The results for the samples listed above have greater than five times the concentration in the blanks resulting in 'B' sample data qualification.

4. ICP Interference Check Sample (ICS)

The ICS was analyzed at the proper frequency. The percent recoveries of the ICS samples were acceptable.

5. Laboratory Control Sample

Laboratory control samples percent recoveries were within QAPP QC limits for all samples.

6. Duplicate Sample Analysis

The duplicate sample analysis was acceptable and met method QC limits.

7. Spike Sample Analysis

All spike sample analyses were within QAPP QC requirements except for the following:

Sample ID	Compound	Percent Recovery	Control Limits	Sample Conc. (µg/L)	Flag
ACSGWMW06-8 MS	Total Mn	125.8%	75-125%	1810	NA
ACSGWMW06-8 MSD		120.8%			

The matrix spike percent recovery for total manganese on sample ACSGWMW06-8 is 125.8%. This recovery is higher than the acceptance limits (75-125%), however, because the matrix spike duplicate recovery was within the acceptance limits and the laboratory control sample data were acceptable, the data were not qualified.

8. Graphite Furnace Atomic Absorption QC

Not applicable.

9. ICP Serial Dilution

The ICP serial dilutions were performed in accordance with the QAPP. The sample concentrations were within control limits.

10. Field Duplicates

Field duplicate samples were not submitted to the laboratory for metals analysis.

11. Overall Assessment

The data reported are acceptable as qualified.

12. Compound Quantitation and Reported CRQLs

The reporting limits for manganese met the criteria outlined in the QAPP. However, the MDL for iron outlined in the QAPP is 12.24 micrograms/liter. The laboratory reported MDL is 13.7 micrograms/liter.

Data Quality Assessment

All data collected during the twenty-first groundwater-sampling event are definitive. The following sections provide details on the precision, accuracy, representativeness, completeness, and comparability (PARCC) of the environmental samples, field QC samples, and laboratory data reported for this field event. The sample cross references are listed in Table 1 and the sample holding times are listed in Table 2.

1. Precision

The relative percent difference (RPD) calculated from data generated from the primary and field duplicate samples and the matrix spike and matrix spike duplicate (MS/MSD) samples provide a measurement of field and laboratory precision. Summaries of the RPDs generated from primary and field duplicates and MS/MSD samples are provided in Tables 3 and 4, respectively.

2. Accuracy

Percent recoveries calculated from surrogate spike compounds added to samples analyzed for organic parameters and from target compounds added to laboratory control samples (LCS) provide a measurement of laboratory accuracy. Summaries of the spike recoveries for LCS samples are provided in Table 5. A summary of the surrogate recovery data is provided in Table 6.

3. Representativeness

Representativeness was achieved through the use of standard field sampling and analytical procedures. All field sampling and analytical procedures were implemented per the Quality Assurance Project Plan (QAPP).

4. Completeness

The percent completeness is calculated for each method and analyte combination. Completeness is defined as the number of valid results (i.e., those not rejected) minus the number of possible results not reported (i.e., samples that could not be analyzed for any reason), divided by the total number of possible results. The completeness by method is summarized below and listed in Table 7. The completeness goal for each analytical method is 95 percent. The overall method percent completeness for volatile organic compounds and total and dissolved metals is 100 percent, which exceeds the completeness goal of 95 percent.

5. Comparability

Comparability was achieved by using standard methods for sampling and analysis and reporting data in standard units.

Table 1
Sample Cross Reference
Round 21
(Page 1 of 11)

Field Sample Identification	Matrix	Field Location Identification	Collection Depth (feet)	Collection Date	Laboratory Sample Identification	Sample Type
ACSGWMW06-8	Water	MW06	NA	12/5/02	M2231-1	Normal Sample
ACSGWMW06-8MS	Water	MW06	NA	12/5/02	M2231-1	Matrix Spike
ACSGWMW06-8MSD	Water	MW06	NA	12/5/02	M2231-1	Matrix Spike Duplicate
ACSDUP01-8	Water	MW06	NA	12/5/02	M2231-2	Field Duplicate
ACSEB01-8	Water	FIELDQC	NA	12/5/02	M2231-5	Equipment Blank
ACSORCPZ102-8	Water	ORCPZ102	NA	12/5/02	M2231-4	Normal Sample
ACSORCPZ103-8	Water	ORCPZ103	NA	12/5/02	M2231-3	Normal Sample
ACSORCEB02-8	Water	FIELDQC	NA	12/5/02	M2231-6	Equipment Blank
ACSTB01-8	Water	FIELDQC	NA	12/5/02	M2231-7	Trip Blank
ACSGWDPT01	Water	DPT01	NA	12/19/02	P2231-1	Normal Sample
ACSGWDPT02	Water	DPT02	NA	12/19/02	P2231-2	Normal Sample
ACSGWDPT03	Water	DPT03	NA	12/19/02	P2231-3	Normal Sample
ACSGWDPT04	Water	DPT04	NA	12/19/02	P2231-4	Normal Sample
ACSGWDPT04MS	Water	DPT04	NA	12/19/02	P2231-4	Matrix Spike
ACSGWDPT04MSD	Water	DPT04	NA	12/19/02	P2231-4	Matrix Spike Duplicate
ACSGWDPT05	Water	DPT05	NA	12/19/02	P2231-5	Normal Sample
ACSGWDPT06	Water	DPT06	NA	12/19/02	P2231-6	Normal Sample
ACSGWDPT07	Water	DPT07	NA	12/20/02	P2231-7	Normal Sample
ACSGWDPT07B	Water	DPT07B	NA	12/20/02	P2231-8	Normal Sample
ACSGWDUP01	Water	DPT04	NA	12/20/02	P2231-9	Field Duplicate
ACSGWTB01	Water	FIELDQC	NA	12/20/02	P2231-10	Trip Blank
ACSGWEB01	Water	FIELDQC	NA	12/20/02	P2231-11	Equipment Blank

Notes:
NA - Not Applicable

Table 2
Holding Time Evaluation: Summary of Extraction and Analysis Dates
Round 21
(Page 2 of 11)

Analytical Method	Sample Identification	Sample Collection Date	Sample Analysis Date	Sample Analysis Holding Time (days)
SW8260B	ACSGWMW06-8	12/5/02	12/10/02	5
	ACSGWMW06-8MS	12/5/02	12/13/02	8
	ACSGWMW06-8MSD	12/5/02	12/13/02	8
	ACSDUP01-8	12/5/02	12/10/02	5
	ACSEB01-8	12/5/02	12/10/02	5
	ACSORCPZ102-8	12/5/02	12/10/02	5
	ACSORCPZ102-8DL	12/5/02	12/13/02	8
	ACSORCPZ103-8	12/5/02	12/10/02	5
	ACSORCPZ103-8DL	12/5/02	12/13/02	8
	ACSORCEB02-8	12/5/02	12/10/02	5
	ACSTB01-8	12/5/02	12/10/02	5
	ACSGWDPT01	12/19/02	12/26/02	7
	ACSGWDPT02	12/19/02	12/26/02	7
	ACSGWDPT03	12/19/02	12/26/02	7
	ACSGWDPT03DL	12/19/02	1/3/03	15*
	ACSGWDPT04	12/19/02	12/26/02	7
	ACSGWDPT04DL	12/19/02	1/3/03	15*
	ACSGWDPT04MS	12/19/02	1/3/03	15*
	ACSGWDPT04MSD	12/19/02	1/3/03	15*
	ACSGWDPT05	12/19/02	12/26/02	7
	ACSGWDPT05DL	12/19/02	1/3/03	15*
	ACSGWDPT06	12/19/02	12/26/02	7
	ACSGWDPT06DL	12/19/02	1/3/03	15*
	ACSGWDPT07	12/20/02	12/26/02	6
	ACSGWDPT07DL	12/20/02	1/3/03	14
	ACSGWDPT07B	12/20/02	12/26/02	6
	ACSGWDPT07BDL	12/20/02	1/3/03	14
	ACSGWDUP01	12/20/02	12/26/02	6
	ACSGWDUP01DL	12/20/02	1/3/03	14
	ACSGWTB01	12/20/02	12/30/02	10
	ACSGWEB01	12/20/02	12/30/02	10
SW6010 Total	ACSGWMW06-8	12/5/02	12/12/02	7
	ACSGWMW06-8MS	12/5/02	12/12/02	7
	ACSGWMW06-8MSD	12/5/02	12/12/02	7
	ACSORCPZ102-8	12/5/02	12/12/02	7
	ACSORCPZ103-8	12/5/02	12/12/02	7
	ACSGWDPT01	12/19/02	1/3/03	15
	ACSGWDPT02	12/19/02	1/3/03	15
	ACSGWDPT03	12/19/02	1/3/03	15
	ACSGWDPT04	12/19/02	1/3/03	15
	ACSGWDPT04MS	12/19/02	1/3/03	15
	ACSGWDPT04MSD	12/19/02	1/3/03	15
	ACSGWDPT05	12/19/02	1/3/03	15
	ACSGWDPT06	12/19/02	1/3/03	15
	ACSGWDPT07	12/20/02	1/3/03	14

Table 2
Holding Time Evaluation: Summary of Extraction and Analysis Dates
Round 21
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Analytical Method	Sample Identification	Sample Collection Date	Sample Analysis Date	Sample Analysis Holding Time (days)
SW6010 Dissolved	ACSGWMW06-8	12/5/02	12/12/02	7
	ACSGWMW06-8MS	12/5/02	12/12/02	7
	ACSGWMW06-8MSD	12/5/02	12/12/02	7
	ACSORCPZ102-8	12/5/02	12/12/02	7
	ACSORCPZ103-8	12/5/02	12/12/02	7
	ACSGWDPT01	12/19/02	12/31/02	12
	ACSGWDPT02	12/19/02	12/31/02	12
	ACSGWDPT03	12/19/02	12/31/02	12
	ACSGWDPT04	12/19/02	12/31/02	12
	ACSGWDPT04MS	12/19/02	12/31/02	12
	ACSGWDPT04MSD	12/19/02	12/31/02	12
	ACSGWDPT05	12/19/02	12/31/02	12
	ACSGWDPT06	12/19/02	12/31/02	12
	ACSGWDPT07	12/20/02	12/31/02	11

Notes:

* The holding times of these diluted samples exceed the acceptable holding time of 14 days. However, because the original undiluted samples were analyzed within the acceptable holding time window and the holding time was only exceeded by one day, no data qualification is necessary.

EB - Equipment Blank Sample
TB - Trip Blank Sample
MS - Matrix Spike
MS - Matrix Spike Duplicate
DL - Diluted Sample

Table 3
Field Duplicate RPD Summary
Round 21
(Page 4 of 11)

Sample Identification	Compound	Primary Sample		Field Duplicate		Units	RPD
		Concentration	Flag	Concentration	Flag		
ACSGWMW06-8	Chloroethane	56		53		µg/L	5.50%
	Benzene	54		46		µg/L	16.00%
	Toluene	1	J	<5	U	µg/L	NA
ACSGWDPT04DL	Chloroethane	98	DJ	150	DJ	µg/L	NA
	Acetone	<630	U	310	DJ	µg/L	NA
	Methylene Chloride	16	DJ	<280	U	µg/L	NA
	Benzene	230	DJ	280	D	µg/L	NA
	Toluene	23	DJ	17	DJ	µg/L	NA
	Chlorobenzene	66	DJ	76	DJ	µg/L	NA
	Ethylbenzene	1800	D	2100	D	µg/L	15.38%
	Isopropylbenzene	41	DJ	40	DJ	µg/L	NA
	1,4-Dichlorobenzene	32	DJ	27	DJ	µg/L	NA
	1,2-Dichlorobenzene	23	DJ	20	DJ	µg/L	NA
	Xylene (total)	7700	D	9200	D	µg/L	17.75%
	Methylcyclohexane	23	DJ	20	DJ	µg/L	NA

Notes:

µg/L - Micrograms per Liter

NA - Not Applicable

RPD - Relative Percent Difference

Flags:

D - Indicates the result is from a diluted sample.

U - Indicates the analyte is not present above the method detection limit.

J - Indicates an estimated value. The compound was positively detected, but the associated numerical value is above the method detection limit and below the practical quantitation limit.

Table 4
Matrix Spike and Matrix Spike Duplicate RPD and Recovery Summary
Round 21

Sample Identification	Location ID	Compound	Matrix Spike (% Rec)	Duplicate (% Rec)	Control Limits Recovery (%)	Actual RPD	Control Limits (%)
ACSGWMW06-8	MW06	1,1-Dichloroethene	92	90	60-140	2.20	14
		Benzene	56*	54*	60-140	3.64	11
		Chlorobenzene	84	86	60-140	2.35	13
		Toluene	82	82	60-140	0.00	13
		Trichloroethene	100	100	60-140	0.00	14
		Dibromofluorobenzene (surrogate)	94	95	80-120	1.06	NA
		1,2-Dichloroethane-d4 (surrogate)	98	99	80-120	1.02	NA
		Toluene-d8 (surrogate)	94	94	80-120	0.00	NA
		Bromofluorobenzene (surrogate)	103	100	80-120	2.96	NA
ACSGWDPT04DL	DPT04	1,1-Dichloroethene	120	130	60-140	8.00	14
		Benzene	110	120	60-140	8.70	11
		Chlorobenzene	93	93	60-140	0.00	13
		Toluene	99	99	60-140	0.00	13
		Trichloroethene	120	120	60-140	0.00	14
		Dibromofluorobenzene (surrogate)	102	106	80-120	3.85	NA
		1,2-Dichloroethane-d4 (surrogate)	121**	125**	80-120	3.25	NA
		Toluene-d8 (surrogate)	103	105	80-120	1.92	NA
		Bromofluorobenzene (surrogate)	98	100	80-120	7.59	NA
ACSGWMW06-8	MW06	Total Iron	112.4	106	75-125	5.86	20
		Total Manganese	125.8***	120.8	75-125	4.06	20
	MW06	Dissolved Iron	98.1	101.5	75-125	3.41	20
		Dissolved Manganese	90.9	95.9	75-125	5.35	20
ACSGWDPT04	DPT04	Total Iron	112.7	107.5	75-125	4.72	20
		Total Manganese	103.5	102.5	75-125	0.97	20
	DPT04	Dissolved Iron	87.9	84.1	75-125	4.42	20
		Dissolved Manganese	100.6	100.4	75-125	0.20	20

Notes:

% Rec - Percent Recovery

NA - Not Applicable

RPD - Relative Percent Difference

* The low percent recovery indicates a low bias. The benzene result for the parent sample was qualified with a 'J' to indicate low bias.

** The surrogate recovery for 1,2-Dichloroethane-d4 was above the control limit, however, one surrogate is allowed to be out as long as recovery > 10%.

*** The matrix spike recovery for total manganese on sample MW06 was above the control limit. Please see the Spike Sample Analysis (Section 7) of the Metals Data Review for a discussion of this result.

Table 5
LCS and LCS Duplicate RPD and Recovery Summary
Round 21

Laboratory Identification	Sample Delivery Group	Compound	Laboratory Spike (% Rec)	Laboratory Spike Duplicate (% Rec)	Control Limits Recovery (%)	Actual RPD (%)	Control Limits (%)
VZULCS	M2231	1,1-Dichloroethene	105	NA	60-140	NA	NA
		Benzene	94	NA	60-140	NA	NA
		Trichloroethene	91	NA	60-140	NA	NA
		Toluene	89	NA	60-140	NA	NA
		Chlorobenzene	92	NA	60-140	NA	NA
		Dibromofluoromethane (surrogate)	90	NA	80-120	NA	NA
		1,2-Dichloroethane-d4 (surrogate)	100	NA	80-120	NA	NA
		Toluene-d8 (surrogate)	87	NA	80-120	NA	NA
		Bromofluorobenzene(surrogate)	79*	NA	80-120	NA	NA
VCLLCS	M2231	1,1-Dichloroethene	90	NA	60-140	NA	NA
		Benzene	86	NA	60-140	NA	NA
		Trichloroethene	100	NA	60-140	NA	NA
		Toluene	83	NA	60-140	NA	NA
		Chlorobenzene	83	NA	60-140	NA	NA
		Dibromofluoromethane (surrogate)	92	NA	80-120	NA	NA
		1,2-Dichloroethane-d4 (surrogate)	98	NA	80-120	NA	NA
		Toluene-d8 (surrogate)	90	NA	80-120	NA	NA
		Bromofluorobenzene(surrogate)	98	NA	80-120	NA	NA
VGHLCS	P2231	1,1-Dichloroethene	126	NA	60-140	NA	NA
		Benzene	114	NA	60-140	NA	NA
		Trichloroethene	112	NA	60-140	NA	NA
		Toluene	120	NA	60-140	NA	NA
		Chlorobenzene	112	NA	60-140	NA	NA
		Dibromofluoromethane (surrogate)	97	NA	80-120	NA	NA
		1,2-Dichloroethane-d4 (surrogate)	96	NA	80-120	NA	NA
		Toluene-d8 (surrogate)	102	NA	80-120	NA	NA
		Bromofluorobenzene(surrogate)	103	NA	80-120	NA	NA

Table 5
LCS and LCS Duplicate RPD and Recovery Summary
Round 21
(Page 7 of 11)

Laboratory Identification	Sample Delivery Group	Compound	Laboratory Spike (% Rec)	Laboratory Spike Duplicate (% Rec)	Control Limits Recovery (%)	Actual RPD (%)	Control Limits (%)
VKHLCS	P2231	1,1-Dichloroethene	104	NA	60-140	NA	NA
		Benzene	100	NA	60-140	NA	NA
		Trichloroethene	99	NA	60-140	NA	NA
		Toluene	84	NA	60-140	NA	NA
		Chlorobenzene	104	NA	60-140	NA	NA
		Dibromofluoromethane (surrogate)	99	NA	80-120	NA	NA
		1,2-Dichloroethane-d4 (surrogate)	98	NA	80-120	NA	NA
		Toluene-d8 (surrogate)	99	NA	80-120	NA	NA
		Bromofluorobenzene(surrogate)	97	NA	80-120	NA	NA
VIKLCS	P2231	1,1-Dichloroethene	121	NA	60-140	NA	NA
		Benzene	104	NA	60-140	NA	NA
		Trichloroethene	112	NA	60-140	NA	NA
		Toluene	98	NA	60-140	NA	NA
		Chlorobenzene	93	NA	60-140	NA	NA
		Dibromofluoromethane (surrogate)	106	NA	80-120	NA	NA
		1,2-Dichloroethane-d4 (surrogate)	124*	NA	80-120	NA	NA
		Toluene-d8 (surrogate)	109	NA	80-120	NA	NA
		Bromofluorobenzene(surrogate)	107	NA	80-120	NA	NA
	N2231	Dissolved Iron	98.8	NA	75-125	NA	NA
		Dissolved Manganese	98.3	NA	75-125	NA	NA
	M2231	Total Iron	107.4	NA	75-125	NA	NA
		Total Manganese	115.2	NA	75-125	NA	NA
	Q2231	Dissolved Iron	100.3	NA	75-125	NA	NA
		Dissolved Manganese	100.6	NA	75-125	NA	NA
	P2231	Total Iron	100.2	NA	75-125	NA	NA
		Total Manganese	101.2	NA	75-125	NA	NA

Notes:

% Rec - Percent Recovery

NA - Not Applicable

RPD - Relative Percent Difference

* The surrogate recovery is outside the control limit, however, one surrogates is allowed to be out as long as recovery > 10%.

Table 6
Surrogate Percent Recovery Summary
Round 21

Method	Sample Identification	Location ID	Collection Date	Laboratory Sample Identification	Compound	Percent Recovery
SW8260B	ACSGWMW06-8	MW06	12/5/02	M2231-1	Dibromofluoromethane	77*
					1,2-Dichloroethane-d4	90
					Toluene-d8	71*
					Bromofluorobenzene	73*
	ACSDUP01-8	MW06	12/5/02	M2231-2	Dibromofluoromethane	92
					1,2-Dichloroethane-d4	106
					Toluene-d8	86
					Bromofluorobenzene	87
	ACSORCPZ103-8	ORCPZ103	12/5/02	M2231-3	Dibromofluoromethane	96
					1,2-Dichloroethane-d4	115
					Toluene-d8	89
					Bromofluorobenzene	90
	ACSORCPZ102-8	OECPZ102	12/5/02	M2231-4	Dibromofluoromethane	94
					1,2-Dichloroethane-d4	128*
					Toluene-d8	87
					Bromofluorobenzene	85
	ACSEB01-8	FIELDQC	12/5/02	M2231-5	Dibromofluoromethane	94
					1,2-Dichloroethane-d4	112
					Toluene-d8	87
					Bromofluorobenzene	90
	ACSORCEB02-8	FIELDQC	12/5/02	M2231-6	Dibromofluoromethane	97
					1,2-Dichloroethane-d4	114
					Toluene-d8	87
					Bromofluorobenzene	89
	ACSTB01-8	FIELDQC	12/5/02	M2231-7	Dibromofluoromethane	94
					1,2-Dichloroethane-d4	109
					Toluene-d8	87
					Bromofluorobenzene	90
	ACSORCPZ103-8DL	ORCPZ103	12/5/02	M2231-3DL	Dibromofluoromethane	97
					1,2-Dichloroethane-d4	112
					Toluene-d8	92
					Bromofluorobenzene	89
	ACSORCPZ102-8DL	ORCPZ102	12/5/02	M2231-4DL	Dibromofluoromethane	96
					1,2-Dichloroethane-d4	101
					Toluene-d8	96
					Bromofluorobenzene	103
	ACSGWMW06-8MS	MW06	12/5/02	M2231-1MS	Dibromofluoromethane	94
					1,2-Dichloroethane-d4	98
					Toluene-d8	94
					Bromofluorobenzene	103
	ACSGWMW06-8MSD	MW06	12/5/02	M2231-1MSD	Dibromofluoromethane	95
					1,2-Dichloroethane-d4	99
					Toluene-d8	94
					Bromofluorobenzene	100
	ACSGWDPT01	DPT01	12/19/02	P2231-1	Dibromofluoromethane	102
					1,2-Dichloroethane-d4	98
					Toluene-d8	103
					Bromofluorobenzene	103

Table 6
Surrogate Percent Recovery Summary
Round 21

Method	Sample Identification	Location ID	Collection Date	Laboratory Sample Identification	Compound	Percent Recovery
SW8260B	ACSGWDPT02	DPT02	12/19/02	P2231-2	Dibromofluoromethane	104
					1,2-Dichloroethane-d4	106
					Toluene-d8	104
					Bromofluorobenzene	111
	ACSGWDPT03	DPT03	12/19/02	P2231-3	Dibromofluoromethane	104
					1,2-Dichloroethane-d4	105
					Toluene-d8	104
					Bromofluorobenzene	105
	ACSGWDPT04	DPT04	12/19/02	P2231-4	Dibromofluoromethane	96
					1,2-Dichloroethane-d4	96
					Toluene-d8	96
					Bromofluorobenzene	96
	ACSGWDPT05	DPT05	12/19/02	P2231-5	Dibromofluoromethane	91
					1,2-Dichloroethane-d4	84
					Toluene-d8	97
					Bromofluorobenzene	95
	ACSGWDPT06	DPT06	12/19/02	P2231-6	Dibromofluoromethane	95
					1,2-Dichloroethane-d4	90
					Toluene-d8	98
					Bromofluorobenzene	96
	ACSGWDPT07	DPT07	12/20/02	P2231-7	Dibromofluoromethane	96
					1,2-Dichloroethane-d4	89
					Toluene-d8	96
					Bromofluorobenzene	95
	ACSGWDPT07B	DPT07B	12/20/02	P2231-8	Dibromofluoromethane	100
					1,2-Dichloroethane-d4	93
					Toluene-d8	99
					Bromofluorobenzene	100
	ACSGWDUP01	DPT04	12/20/02	P2231-9	Dibromofluoromethane	97
					1,2-Dichloroethane-d4	90
					Toluene-d8	99
					Bromofluorobenzene	96
	ACSGWTB01	FIELDQC	12/20/02	P2231-10	Dibromofluoromethane	93
					1,2-Dichloroethane-d4	82
					Toluene-d8	102
					Bromofluorobenzene	120
	ACSGWEB01	FIELDQC	12/20/02	P2231-11	Dibromofluoromethane	90
					1,2-Dichloroethane-d4	80
					Toluene-d8	99
					Bromofluorobenzene	119
	ACSGWDPT03DL	DPT03	12/19/02	P2231-3DL	Dibromofluoromethane	110
					1,2-Dichloroethane-d4	129*
					Toluene-d8	109
					Bromofluorobenzene	108
	ACSGWDPT04DL	DPT04	12/19/02	P2231-4DL	Dibromofluoromethane	108
					1,2-Dichloroethane-d4	124*
					Toluene-d8	109
					Bromofluorobenzene	105

Table 6
Surrogate Percent Recovery Summary
Round 21
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Method	Sample Identification	Location ID	Collection Date	Laboratory Sample Identification	Compound	Percent Recovery
SW8260B	ACSGWDPT04DLMS	DPT04	12/19/02	P2231-4DLMS	Dibromofluoromethane	102
					1,2-Dichloroethane-d4	121*
					Toluene-d8	103
					Bromofluorobenzene	98
	ACSGWDPT04DLMSD	DPT04	12/19/02	P2231-4DLMSD	Dibromofluoromethane	106
					1,2-Dichloroethane-d4	125*
					Toluene-d8	105
					Bromofluorobenzene	100
	ACSGWDPT05DL	DPT05	12/19/02	P2231-5DL	Dibromofluoromethane	107
					1,2-Dichloroethane-d4	125*
					Toluene-d8	106
					Bromofluorobenzene	101
	ACSGWDPT06DL	DPT06	12/19/02	P2231-6DL	Dibromofluoromethane	107
					1,2-Dichloroethane-d4	124*
					Toluene-d8	107
					Bromofluorobenzene	102
	ACSGWDPT07DL	DPT07	12/20/02	P2231-7DL	Dibromofluoromethane	108
					1,2-Dichloroethane-d4	126*
					Toluene-d8	107
					Bromofluorobenzene	104
	ACSGWDPT07BDL	DPT07B	12/20/02	P2231-8DL	Dibromofluoromethane	105
					1,2-Dichloroethane-d4	126*
					Toluene-d8	108
					Bromofluorobenzene	100
	ACSGWDUP01DL	DPT04	12/20/02	P2231-9DL	Dibromofluoromethane	105
					1,2-Dichloroethane-d4	126*
					Toluene-d8	106
					Bromofluorobenzene	104

Notes:

* Indicates that the percent recovery lies outside of the acceptance criteria outlined in the QAPP.

One of the four surrogate recoveries is allowed to be out of the acceptance criteria. Samples that have more than one surrogate recoveries outside of the acceptance criteria have qualified results as discuseed in Section 6 of this report.

Table 7
Percent Completeness
Round 21
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Method	Matrix	Compound	Total Number of Samples	Number Rejected	Percent Complete (%)
SW8260B	Water	1,1,1-Trichloroethane	18	0	100
		1,1,2,2-Tetrachloroethane	18	0	100
		1,1,2-Trichloroethane	18	0	100
		1,1-Dichloroethane	18	0	100
		1,1-Dichloroethene	18	0	100
		1,2-Dichloroethane	18	0	100
		1,2-Dichloropropane	18	0	100
		2-Butanone (MEK)	18	0	100
		2-Hexanone	18	0	100
		4-Methyl-2-pentanone (MIBK)	18	0	100
		Acetone	18	0	100
		Benzene	18	0	100
		Bromodichloromethane	18	0	100
		Bromoform	18	0	100
		Bromomethane	18	0	100
		Carbon Disulfide	18	0	100
		Carbon Tetrachloride	18	0	100
		Chlorobenzene	18	0	100
		Chloroethane	18	0	100
		Chloroform	18	0	100
		Chloromethane	18	0	100
		cis-1,2-Dichloroethene	18	0	100
		cis-1,3-Dichloropropene	18	0	100
		Dibromochloromethane	18	0	100
		Ethylbenzene	18	0	100
		Methylene chloride	18	0	100
		Styrene	18	0	100
		Tetrachloroethene	18	0	100
		Toluene	18	0	100
		trans-1,2-Dichloroethene	18	0	100
		trans-1,3-Dichloropropene	18	0	100
		Trichloroethene	18	0	100
		Vinyl chloride	18	0	100
		Xylenes (total)	18	0	100
		1,2,4-Trichlorobenzene	18	0	100
		1,2-Dichlorobenzene	18	0	100
		1,3-Dichlorobenzene	18	0	100
		1,4-Dichlorobenzene	18	0	100
SW6010	Water	Total Iron	10	0	100
		Total Manganese	10	0	100
		Dissolved Iron	10	0	100
		Dissolved Manganese	10	0	100

Introduction

The following text presents the results of the validation of soil samples collected at American Chemical Service, Inc. in February 2003.

Fourteen soil samples and one QA/QC sample were analyzed by CompuChem Laboratories of Cary, North Carolina for the following parameters.

- Volatile Organic Compounds (VOCs), SW-846 8260B (Sample Delivery Group (SDG) QS2231, samples: SDPT01-27, SDPT02-22, SDPT02-27, SDPT03-22, SDPT03-19, SDPT03-29, SDPT04-18, SDPT04-22, SDPT07-23, SDPT08-19, SDPT09-22, SDPT06-23, SDPT05-24, SDPT05-33)

Data validation was conducted in accordance with procedures specified in the following as applicable to each method:

- Quality Assurance Plan: For the Remedial Design/Remediation Action at the American Chemical Service, Inc. NPL Site (MWH, 2001)
- USEPA Contract Laboratory Program Statement of Work for Organic Analysis OLM03.1 (U.S. EPA, August 1994)
- USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis Multi-Media, Multi-Concentration ILM04.1 (U.S. EPA, February 2000)
- National Functional Guidelines for Organic Data Review (U.S. EPA, 1999)
- National Functional Guidelines for Inorganic Data Review (U.S. EPA, 1994)

The following quality control samples were collected during the February 2003 sampling round:

- Field duplicate, SDPT-DUP.

Volatiles Data Review (SW8260B)

1. **Holding Times**

All holding times and cooler temperatures met requirements for all samples.

2. **GC/MS Instrument Performance Check**

Instrument performance was checked at 12-hour intervals and all ion abundance requirements were met for this SDG.

3. **Initial Calibration**

Initial calibration was performed using the required standard concentrations. Percent relative standard deviations (%RSD) were less than or equal to 30% for each compound. Average relative response factors (RRF) for all VOCs and system performance check compounds (SPCCs) were within method and validation criteria.

4. **Continuing Calibration**

Continuing calibration was performed at the required frequencies. All continuing calibration RRFs for system performance check compounds (SPCCs) within method and validation criteria. The percent differences (%D) between the initial and continuing calibration RRFs were less than or equal to 20%.

5. **Blanks**

No volatile contaminants were found in the method blanks except for the following:

SDG	Method Blank ID	Compound	Conc.	Associated Samples	Conc.	Flag
QS2231	VBLKBC	Acetone	4 µg/L	SDPT02-22	52 µg/L	B
				SDPT02-27	27 µg/L	B
				SDPT04-22	23 µg/L	B
		2-Butanone	1 µg/L	SDPT02-22	16 µg/L	B
				SDPT02-27	10 µg/L	B
				SDPT04-22	13 µg/L	B
		Bromodichloromethane	0.2 µg/L	None	NA	NA
		2-Hexanone	0.7 µg/L	SDPT02-22	0.9 µg/L	UB
				SDPT02-27	1 µg/L	UB
		1,2-Dibromoethane	0.2 µg/L	None	NA	NA
		1,3-Dichlorobenzene	0.4 µg/L	None	NA	NA
		1,2-Dichlorobenzene	0.4 µg/L	SDPT02-22	11 µg/L	B
				SDPT02-27	56 µg/L	B
				SDPT04-22	89 µg/L	B
		1,2,4-Trichlorobenzene	0.6 µg/L	SDPT04-22	0.4 µg/L	UB
QS2231	VBLKBN	1,2,4-Trichlorobenzene	150 µg/L	SDPT04-22 DL	110 µg/L	UB
				SDPT07-23	190 µg/L	UB
				SDPT-DUP	110 µg/L	UB

Sample concentrations were compared to concentrations detected in the method blanks. Where the associated sample concentrations were detected at levels less than five times the concentrations in the associated blank, the data were qualified with a 'UB' flag. Where associated sample concentrations were detected at levels greater than five times the concentration in the associated blank, the data were qualified with a 'B' flag.

6. System Monitoring Compounds

System monitoring compounds (surrogate spike compounds) recoveries were within the QAPP QC limits.

7. Matrix Spike/Matrix Spike Duplicates

Matrix Spike (MS) and matrix spike duplicate (MSD) samples were within QAPP QC limits.

8. Laboratory Control Samples

Laboratory control samples percent recoveries were within QAPP QC limits for all samples.

9. Regional Quality Assurance and Quality Control

Not applicable.

10. Internal Standards

All internal standard areas and retention times were within QAPP QC limits.

11. Target Compound Identification

All target compounds were identified appropriately by the laboratory. There was no significant shift in the retention times for the internal standard.

12. Compound Quantitation and Reported CRQLs

The reporting limits for each compound met the criteria outlined in the QAPP for samples SDPT01-27, SDPT02-22, and SDPT02-27. The other 12 samples were suspected to have high concentrations of volatile compounds based on the volatile screening data. The laboratoy performed medium level extractions for these 12 samples that resulted in elevated reporting limits. Any concentrations reported below the reporting limit are qualified with a 'J' flag to indicate the data are estimated.

13. Tentatively Identified Compounds

Tentatively identified compounds were not evaluated.

14. System Performance

System performance was acceptable based on the instrument tune and calibration standards.

15. Overall Assessment of Data

The data reported are acceptable as qualified. The only data that were qualified are the data that are summarized and discussed in Section 5 of this report.

16. Field Duplicates

No VOCs were detected above the reporting limit in the field duplicate sample except for the following:

		Concentration (µg/L)		
SDG	Compound	SDPT08-19	SDPT-DUP	RPD
QS2231	Ethylbenzene	820	240 J	NA
	Isopropylbenzene	420	190 J	NA
	1,2-Dichlorobenzene	130 J	260 U	NA
	1,2,4-Trichlorobenzene	270 U	110 JB	NA
	Total Xylenes	3600	1200	100%
	Methyl acetate	270 U	260 J	NA
	Methylcyclohexane	470	69 J	NA

Data Quality Assessment

All data collected during the twenty-second sampling event are definitive. The following sections provide details on the precision, accuracy, representativeness, completeness, and comparability (PARCC) of the environmental samples, field QC sample, and laboratory data reported for this field event. The sample cross references are listed in Table 1 and the sample holding times are listed in Table 2.

1. Precision

The relative percent difference (RPD) calculated from data generated from the primary and field duplicate samples and the matrix spike and matrix spike duplicate (MS/MSD) samples provides a measurement of field and laboratory precision. Summaries of the RPDs generated from primary and field duplicates and MS/MSD samples are provided in Tables 3 and 4, respectively.

2. Accuracy

Percent recoveries calculated from surrogate spike compounds added to samples analyzed for organic parameters and from target compounds added to laboratory control samples (LCS) provide a measurement of laboratory accuracy. Summaries of the spike recoveries for LCS samples are provided in Table 5. A summary of the surrogate recovery data is provided in Table 6.

3. Representativeness

Representativeness was achieved through the use of standard field sampling and analytical procedures. All field sampling and analytical procedures were implemented per the Quality Assurance Project Plan (QAPP).

4. Completeness

The percent completeness is calculated for each method and analyte combination. Completeness is defined as the number of valid results (i.e., those not rejected) minus the number of possible results not reported (i.e., samples that could not be analyzed for any reason), divided by the total number of possible results. The completeness by method is summarized below and listed in Table 7. The completeness goal for each analytical method is 95 percent. The overall method percent completeness for volatile organic compounds is 100 percent, which exceeds the completeness goal of 95 percent.

5. Comparability

Comparability was achieved by using standard methods for sampling and analysis and reporting data in standard units.

Table 1
Sample Cross Reference
Round 22
(Page 1 of 9)

Field Sample Identification	Matrix	Field Location Identification	Collection Depth (feet)	Collection Date	Laboratory Sample Identification	Sample Type
SDPT01-27	Soil	DPT01	27	2/19/2003	S2231-1	Normal Sample
SDPT02-22	Soil	DPT02	22	2/19/2003	S2231-2	Normal Sample
SDPT02-27	Soil	DPT02	27	2/19/2003	S2231-3	Normal Sample
SDPT03-22	Soil	DPT03	22	2/19/2003	S2231-4	Normal Sample
SDPT03-19	Soil	DPT03	19	2/19/2003	S2231-5	Normal Sample
SDPT03-29	Soil	DPT03	29	2/19/2003	S2231-6	Normal Sample
SDPT04-18	Soil	DPT04	18	2/19/2003	S2231-7	Normal Sample
SDPT04-22	Soil	DPT04	22	2/19/2003	S2231-8	Normal Sample
SDPT07-23	Soil	DPT07	23	2/20/2003	S2231-9	Normal Sample
SDPT07-23MS	Soil	DPT07	23	2/20/2003	S2231-9	Matrix Spike
SDPT07-23MSD	Soil	DPT07	23	2/20/2003	S2231-9	Matrix Spike Duplicate
SDPT08-19	Soil	DPT08	19	2/20/2003	S2231-10	Normal Sample
SDPT-DUP	Soil	DPT08	19	2/20/2003	S2231-11	Field Duplicate
SDPT09-22	Soil	DPT09	22	2/20/2003	S2231-12	Normal Sample
SDPT06-23	Soil	DPT06	23	2/20/2003	S2231-13	Normal Sample
SDPT05-24	Soil	DPT05	24	2/20/2003	S2231-14	Normal Sample
SDPT05-33	Soil	DPT05	33	2/20/2003	S2231-15	Normal Sample

Table 2
Holding Time Evaluation: Summary of Extraction and Analysis Dates
Round 22
(Page 2 of 9)

Analytical Method	Sample Identification	Sample Collection Date	Sample Analysis Date	Sample Analysis Holding Time (days)
SW8260B	SDPT01-27	2/19/2003	2/26/2003	7
	SDPT02-22	2/19/2003	2/23/2003	4
	SDPT02-27	2/19/2003	2/23/2003	4
	SDPT03-22	2/19/2003	2/28/2003	9
	SDPT03-19	2/19/2003	2/28/2003	9
	SDPT03-29	2/19/2003	2/28/2003	9
	SDPT04-18	2/19/2003	2/28/2003	9
	SDPT04-22	2/19/2003	2/23/2003	4
	SDPT04-22 DL	2/19/2003	2/28/2003	9
	SDPT07-23	2/20/2003	2/28/2003	8
	SDPT07-23MS	2/20/2003	2/28/2003	8
	SDPT07-23MSD	2/20/2003	2/28/2003	8
	SDPT08-19	2/20/2003	2/28/2003	8
	SDPT-DUP	2/20/2003	2/28/2003	8
	SDPT09-22	2/20/2003	2/28/2003	8
	SDPT06-23	2/20/2003	3/4/2003	12
	SDPT05-24	2/20/2003	3/4/2003	12
	SDPT05-33	2/20/2003	3/4/2003	12

Notes:

MS - Matrix Spike
MSD - Matrix Spike Duplicate
DL - Diluted Sample

Table 3
Field Duplicate RPD Summary
Round 22
(Page 3 of 9)

Sample Identification	Compound	Primary Sample		Field Duplicate		Units	RPD
		Concentration	Flag	Concentration	Flag		
SDPT08-19	Ethylbenzene	820		240	J	µg/L	NA
	Isopropylbenzene	420		190	J	µg/L	NA
	1,2-Dichlorobenzene	130	J	260	U	µg/L	NA
	1,2,4-Trichlorobenzene	270	U	110	JB	µg/L	NA
	Total Xylenes	3600		1200		µg/L	100%
	Methyl acetate	270	U	260	J	µg/L	NA
	Methylcyclohexane	470		69	J	µg/L	NA

Notes:

µg/L - Micrograms per Liter

NA - Not Applicable

RPD - Relative Percent Difference

Flags:

U - Indicates the analyte is not present above the method detection limit.

J - Indicates an estimated value. The compound was positively detected, but the associated numerical value is above the method detection limit and below the practical quantitation limit.

Table 4
Matrix Spike and Matrix Spike Duplicate RPD and Recovery Summary
Round 22
(Page 4 of 9)

Sample Identification	Location ID	Compound	Matrix Spike (% Rec)	Duplicate (% Rec)	Control Limits Recovery (%)	Actual RPD	Control Limits (%)
SDPT07-23	DPT07	1,1-Dichloroethene	71	80	59-172	11.9	22
		Benzene	95	93	66-142	3.6	21
		Chlorobenzene	94	94	78-122	0	21
		Toluene	92	90	59-139	2.2	21
		Trichloroethene	92	92	62-137	0	24
		Dibromofluorobenzene (surrogate)	107	113	33-150	NA	NA
		1,2-Dichloroethane-d4 (surrogate)	98	93	43-145	NA	NA
		Toluene-d8 (surrogate)	107	110	55-125	NA	NA
		Bromofluorobenzene (surrogate)	103	104	46-150	NA	NA

Notes:

% Rec - Percent Recovery

NA - Not Applicable

RPD - Relative Percent Difference

Table 5
LCS and LCS Duplicate RPD and Recovery Summary
Round 22

Laboratory Identification	Sample Delivery Group	Compound	Laboratory Spike (% Rec)	Laboratory Spike Duplicate (% Rec)	Control Limits Recovery (%)	Actual RPD (%)	Control Limits (%)
VBCLCS	QS2231	1,1-Dichloroethene	88	NA	75-138	NA	NA
		Benzene	93	NA	75-129	NA	NA
		Trichloroethene	93	NA	75-121	NA	NA
		Toluene	87	NA	76-119	NA	NA
		Chlorobenzene	87	NA	78-122	NA	NA
		Dibromofluoromethane (surrogate)	87	NA	33-150	NA	NA
		1,2-Dichloroethane-d4 (surrogate)	84	NA	43-145	NA	NA
		Toluene-d8 (surrogate)	82	NA	55-125	NA	NA
		Bromofluorobenzene(surrogate)	84	NA	46-150	NA	NA
VBGLCS	QS2231	1,1-Dichloroethene	127	NA	75-138	NA	NA
		Benzene	110	NA	75-129	NA	NA
		Trichloroethene	110	NA	75-121	NA	NA
		Toluene	108	NA	76-119	NA	NA
		Chlorobenzene	104	NA	78-122	NA	NA
		Dibromofluoromethane (surrogate)	113	NA	33-150	NA	NA
		1,2-Dichloroethane-d4 (surrogate)	101	NA	43-145	NA	NA
		Toluene-d8 (surrogate)	116	NA	55-125	NA	NA
		Bromofluorobenzene(surrogate)	108	NA	46-150	NA	NA
VBLLCS	QS2231	1,1-Dichloroethene	95	NA	75-138	NA	NA
		Benzene	98	NA	75-129	NA	NA
		Trichloroethene	96	NA	75-121	NA	NA
		Toluene	97	NA	76-119	NA	NA
		Chlorobenzene	98	NA	78-122	NA	NA
		Dibromofluoromethane (surrogate)	107	NA	33-150	NA	NA
		1,2-Dichloroethane-d4 (surrogate)	92	NA	43-145	NA	NA
		Toluene-d8 (surrogate)	108	NA	55-125	NA	NA
		Bromofluorobenzene(surrogate)	101	NA	46-150	NA	NA

Table 5
LCS and LCS Duplicate RPD and Recovery Summary
Round 22
(Page 6 of 9)

Laboratory Identification	Sample Delivery Group	Compound	Laboratory Spike (% Rec)	Laboratory Spike Duplicate (% Rec)	Control Limits Recovery (%)	Actual RPD (%)	Control Limits (%)
VFBLCS	QS2231	1,1-Dichloroethene	83	NA	75-138	NA	NA
		Benzene	87	NA	75-129	NA	NA
		Trichloroethene	103	NA	75-121	NA	NA
		Toluene	88	NA	76-119	NA	NA
		Chlorobenzene	94	NA	78-122	NA	NA
		Dibromofluoromethane (surrogate)	83	NA	33-150	NA	NA
		1,2-Dichloroethane-d4 (surrogate)	78	NA	43-145	NA	NA
		Toluene-d8 (surrogate)	86	NA	55-125	NA	NA
		Bromofluorobenzene(surrogate)	118	NA	46-150	NA	NA

Notes:

% Rec - Percent Recovery

NA - Not Applicable

RPD - Relative Percent Difference

Table 6
Surrogate Percent Recovery Summary
Round 22
(Page 7 of 9)

Method	Sample Identification	Location ID	Collection Date	Laboratory Sample Identification	Compound	Percent Recovery
SW8260B	SDPT01-27	DPT01	12/5/2002	QS2231-1	Dibromofluoromethane	119
					1,2-Dichloroethane-d4	122
					Toluene-d8	108
					Bromofluorobenzene	108
	SDPT02-22	DPT02	12/5/2002	QS2231-2	Dibromofluoromethane	98
					1,2-Dichloroethane-d4	105
					Toluene-d8	92
					Bromofluorobenzene	105
	SDPT02-27	DPT02	12/5/2002	QS2231-3	Dibromofluoromethane	103
					1,2-Dichloroethane-d4	112
					Toluene-d8	95
					Bromofluorobenzene	108
	SDPT03-22	DPT03	12/5/2002	QS2231-4	Dibromofluoromethane	116
					1,2-Dichloroethane-d4	98
					Toluene-d8	106
					Bromofluorobenzene	104
	SDPT03-19	DPT03	12/5/2002	QS2231-5	Dibromofluoromethane	111
					1,2-Dichloroethane-d4	96
					Toluene-d8	106
					Bromofluorobenzene	103
	SDPT03-29	DPT03	12/5/2002	QS2231-6	Dibromofluoromethane	110
					1,2-Dichloroethane-d4	92
					Toluene-d8	110
					Bromofluorobenzene	105
	SDPT04-18	DPT04	12/5/2002	QS2231-7	Dibromofluoromethane	116
					1,2-Dichloroethane-d4	100
					Toluene-d8	107
					Bromofluorobenzene	108
	SDPT04-22	DPT04	12/5/2002	QS2231-8	Dibromofluoromethane	96
					1,2-Dichloroethane-d4	105
					Toluene-d8	93
					Bromofluorobenzene	106
	SDPT07-23	DPT07	12/5/2002	QS2231-9	Dibromofluoromethane	115
					1,2-Dichloroethane-d4	105
					Toluene-d8	111
					Bromofluorobenzene	101
	SDPT07-23MS	DPT07	12/5/2002	QS2231-9MS	Dibromofluoromethane	107
					1,2-Dichloroethane-d4	98
					Toluene-d8	107
					Bromofluorobenzene	103
	SDPT07-23MSD	DPT07	12/5/2002	QS2231-9MSD	Dibromofluoromethane	113
					1,2-Dichloroethane-d4	93
					Toluene-d8	110
					Bromofluorobenzene	104
	SDPT08-19	DPT08	12/19/2002	QS2231-10	Dibromofluoromethane	112
					1,2-Dichloroethane-d4	94
					Toluene-d8	102
					Bromofluorobenzene	105

Table 6
Surrogate Percent Recovery Summary
Round 22
(Page 8 of 9)

Method	Sample Identification	Location ID	Collection Date	Laboratory Sample Identification	Compound	Percent Recovery
SW8260B	SDPT-DUP	DPT08	12/19/2002	QS2231-11	Dibromofluoromethane	109
					1,2-Dichloroethane-d4	93
					Toluene-d8	103
					Bromofluorobenzene	102
	SDPT09-22	DPT09	12/19/2002	QS2231-12	Dibromofluoromethane	108
					1,2-Dichloroethane-d4	92
					Toluene-d8	108
					Bromofluorobenzene	99
	SDPT06-23	DPT06	12/19/2002	QS2231-13	Dibromofluoromethane	83
					1,2-Dichloroethane-d4	80
					Toluene-d8	91
					Bromofluorobenzene	115
	SDPT05-24	DPT05	12/19/2002	QS2231-14	Dibromofluoromethane	82
					1,2-Dichloroethane-d4	78
					Toluene-d8	94
					Bromofluorobenzene	119
	SDPT05-33	DPT05	12/19/2002	QS2231-15	Dibromofluoromethane	80
					1,2-Dichloroethane-d4	78
					Toluene-d8	94
					Bromofluorobenzene	110

Table 7
Percent Completeness
Round 22
(Page 9 of 9)

Method	Matrix	Compound	Total Number of Samples	Number Rejected	Percent Complete (%)
SW8260B	Soil	Dichlorodifluoromethane	15	0	100
		Chloromethane	15	0	100
		Vinyl Chloride	15	0	100
		Bromomethane	15	0	100
		Chloroethane	15	0	100
		Trichlorofluoromethane	15	0	100
		1,1-Dichloroethene	15	0	100
		Carbon Disulfide	15	0	100
		1,1,2-trichloro-1,2,2-trifluoroethane	15	0	100
		Acetone	15	0	100
		Methylene chloride	15	0	100
		trans-1,2-Dichloroethene	15	0	100
		Methyl-tert-butyl ether	15	0	100
		1,1-Dichloroethane	15	0	100
		cis-1,2-dichloroethane	15	0	100
		cis-1,2-Dicloroethene	15	0	100
		2-butanone	15	0	100
		Chloroform	15	0	100
		1,1,1-Trichloroethane	15	0	100
		Carbon Tetrachloride	15	0	100
		Benzene	15	0	100
		1,2-Dichloroethane	15	0	100
		Trichloroethene	15	0	100
		1,2-Dichloropropane	15	0	100
		Bromodichloromethane	15	0	100
		cis-1,3-Dichloropropene	15	0	100
		4-Methyl-=2-pentanone	15	0	100
		Toluene	15	0	100
		trans-1,3-Dichloropropene	15	0	100
		1,1,2-Trichloroethane	15	0	100
		Tetrachloroethene	15	0	100
		2-hexanone	15	0	100
		Dibromochloromethane	15	0	100
		1,2-dibromoethane	15	0	100
		Chlorobenzene	15	0	100
		Ethylbenzene	15	0	100
		Styrene	15	0	100
		Bromoform	15	0	100
		Isopropyl Benzene	15	0	100
		1,1,2,2-Tetrachloroethane	15	0	100
		1,3-Dichlorobenzene	15	0	100
		1,4-Dichlorobenzene	15	0	100
		1,2-Dichlorobenzene	15	0	100
		1,2-Dibromo-3-chloropropane	15	0	100
		1,2,4-Trichlorobenzene	15	0	100
		Xylene (total)	15	0	100
		Methyl acetate	15	0	100
		Cyclohexane	15	0	100
		Methylcyclohexane	15	0	100

TASK 1

September 2002

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GW-ORCPZ102-07

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: J2231

Matrix: (soil/water) WATER Lab Sample ID: J2231-16

Sample wt/vol: 5 (g/ml) ML Lab File ID: J2231-16B52

Level: (low/med) LOW Date Received: 09/24/02

% Moisture: not dec. _____ Date Analyzed: 09/27/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	350	E
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	3	J
156-60-5	trans-1,2-Dichloroethene	4	J
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	3	JB
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	1400	E
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	1	J
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GW-ORCPZ102-07

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: J2231

Matrix: (soil/water) WATER Lab Sample ID: J2231-16

Sample wt/vol: 5 (g/ml) ML Lab File ID: J2231-16B52

Level: (low/med) LOW Date Received: 09/24/02

% Moisture: not dec. _____ Date Analyzed: 09/27/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	58	
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	12	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	3	J
95-50-1	1,2-Dichlorobenzene	15	
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	1000	E
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GW-ORCPZ
102-07DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: J2231

Matrix: (soil/water) WATER Lab Sample ID: J2231-16

Sample wt/vol: 5 (g/ml) ML Lab File ID: J2231-16D2A61

Level: (low/med) LOW Date Received: 09/24/02

% Moisture: not dec. _____ Date Analyzed: 10/02/02

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 40.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	200	U
74-87-3	Chloromethane	200	U
75-01-4	Vinyl Chloride	200	U
74-83-9	Bromomethane	200	U
75-00-3	Chloroethane	400	D
75-69-4	Trichlorofluoromethane	200	U
75-35-4	1,1-Dichloroethene	200	U
75-15-0	Carbon disulfide	200	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	200	U
67-64-1	Acetone	190	DJB
75-09-2	Methylene Chloride	120	DJ
156-60-5	trans-1,2-Dichloroethene	200	U
1634-04-4	Methyl-tert-butyl ether	200	U
75-34-3	1,1-Dichloroethane	200	U
156-59-2	cis-1,2-Dichloroethene	200	U
78-93-3	2-butanone	190	DJB
67-66-3	Chloroform	200	U
71-55-6	1,1,1-Trichloroethane	200	U
56-23-5	Carbon Tetrachloride	200	U
71-43-2	Benzene	7400	D
107-06-2	1,2-Dichloroethane	200	U
79-01-6	Trichloroethene	200	U
78-87-5	1,2-Dichloropropane	200	U
75-27-4	Bromodichloromethane	200	U
10061-01-5	cis-1,3-Dichloropropene	200	U
108-10-1	4-Methyl-2-pentanone	500	U
108-88-3	Toluene	69	DJ
10061-02-6	trans-1,3-Dichloropropene	200	U
79-00-5	1,1,2-Trichloroethane	200	U
127-18-4	Tetrachloroethene	200	U
591-78-6	2-hexanone	500	U
124-48-1	Dibromochloromethane	200	U
106-93-4	1,2-Dibromoethane	200	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GW-ORCPZ
102-07DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: J2231

Matrix: (soil/water) WATER Lab Sample ID: J2231-16

Sample wt/vol: 5 (g/ml) ML Lab File ID: J2231-16D2A61

Level: (low/med) LOW Date Received: 09/24/02

% Moisture: not dec. _____ Date Analyzed: 10/02/02

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 40.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	200	U
100-41-4	Ethylbenzene	200	U
100-42-5	Styrene	200	U
75-25-2	Bromoform	200	U
98-82-8	Isopropyl Benzene	200	U
79-34-5	1,1,2,2-Tetrachloroethane	200	U
541-73-1	1,3-Dichlorobenzene	200	U
106-46-7	1,4-Dichlorobenzene	200	U
95-50-1	1,2-Dichlorobenzene	200	U
96-12-8	1,2-Dibromo-3-Chloropropane	200	U
120-82-1	1,2,4-Trichlorobenzene	200	U
1330-20-7	Xylene (total)	1900	D
79-20-9	Methyl acetate	200	U
110-82-7	Cyclohexane	200	U
108-87-2	Methylcyclohexane	200	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GW-ORCPZ103-07

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: J2231

Matrix: (soil/water) WATER Lab Sample ID: J2231-15

Sample wt/vol: 5 (g/ml) ML Lab File ID: J2231-15RB52

Level: (low/med) LOW Date Received: 09/24/02

% Moisture: not dec. _____ Date Analyzed: 09/27/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(u

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	79	
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	3	J
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	79	
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GW-ORCPZ103-07

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: J2231

Matrix: (soil/water) WATER Lab Sample ID: J2231-15

Sample wt/vol: 5 (g/ml) ML Lab File ID: J2231-15RB52

Level: (low/med) LOW Date Received: 09/24/02

% Moisture: not dec. _____ Date Analyzed: 09/27/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	5	U
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GW-ORCEB04-07

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: J2231

Matrix: (soil/water) WATER Lab Sample ID: J2231-19

Sample wt/vol: 5 (g/ml) ML Lab File ID: J2231-19B52

Level: (low/med) LOW Date Received: 09/24/02

% Moisture: not dec. _____ Date Analyzed: 09/27/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(u

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	0.7	J
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GW-ORCEB04-07

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: J2231

Matrix: (soil/water) WATER Lab Sample ID: J2231-19

Sample wt/vol: 5 (g/ml) ML Lab File ID: J2231-19B52

Level: (low/med) LOW Date Received: 09/24/02

% Moisture: not dec. _____ Date Analyzed: 09/27/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	5	U
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

TASK 1

December 2002

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW06-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-1

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-1B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	56	
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	54	
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	1	J
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW06-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-1

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-1B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	5	U
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSORCEB02-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-6

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-6B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	1	J
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	1	J
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSORCEB02-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-6

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-6B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(_L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	5	U
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSORCPZ102-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-4

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-4B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	240	E
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	2	J
156-60-5	trans-1,2-Dichloroethene	1	J
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	2100	E
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	2	J
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSORCPZ102-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-4

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-4B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	4	J
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	9	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	12	
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	740	E
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSORCPZ102-8DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-4

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-4D2A52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/13/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 25.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	130	U
74-87-3	Chloromethane	130	U
75-01-4	Vinyl Chloride	130	U
74-83-9	Bromomethane	130	U
75-00-3	Chloroethane	180	D
75-69-4	Trichlorofluoromethane	130	U
75-35-4	1,1-Dichloroethene	130	U
75-15-0	Carbon disulfide	130	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	130	U
67-64-1	Acetone	230	DJ
75-09-2	Methylene Chloride	130	U
156-60-5	trans-1,2-Dichloroethene	130	U
1634-04-4	Methyl-tert-butyl ether	130	U
75-34-3	1,1-Dichloroethane	130	U
156-59-2	cis-1,2-Dichloroethene	130	U
78-93-3	2-butanone	310	U
67-66-3	Chloroform	130	U
71-55-6	1,1,1-Trichloroethane	130	U
56-23-5	Carbon Tetrachloride	130	U
71-43-2	Benzene	3300	D
107-06-2	1,2-Dichloroethane	130	U
79-01-6	Trichloroethene	130	U
78-87-5	1,2-Dichloropropane	130	U
75-27-4	Bromodichloromethane	130	U
10061-01-5	cis-1,3-Dichloropropene	130	U
108-10-1	4-Methyl-2-pentanone	310	U
108-88-3	Toluene	130	U
10061-02-6	trans-1,3-Dichloropropene	130	U
79-00-5	1,1,2-Trichloroethane	130	U
127-18-4	Tetrachloroethene	130	U
591-78-6	2-hexanone	310	U
124-48-1	Dibromochloromethane	130	U
106-93-4	1,2-Dibromoethane	130	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSORCPZ102-8DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-4

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-4D2A52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/13/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 25.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	130	U
100-41-4	Ethylbenzene	130	U
100-42-5	Styrene	130	U
75-25-2	Bromoform	130	U
98-82-8	Isopropyl Benzene	130	U
79-34-5	1,1,2,2-Tetrachloroethane	130	U
541-73-1	1,3-Dichlorobenzene	130	U
106-46-7	1,4-Dichlorobenzene	130	U
95-50-1	1,2-Dichlorobenzene	130	U
96-12-8	1,2-Dibromo-3-Chloropropane	130	U
120-82-1	1,2,4-Trichlorobenzene	130	U
1330-20-7	Xylene (total)	470	D
79-20-9	Methyl acetate	130	U
110-82-7	Cyclohexane	130	U
108-87-2	Methylcyclohexane	130	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSORCPZ103-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-3

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-3B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	79	
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	2	J
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	400	E
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSORCPZ103-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-3

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-3B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	5	U
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSDUP01-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-2

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-2B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	53	
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	46	
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSDUP01-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-2

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-2B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	5	U
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSEB01-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-5

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-5B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	0.8	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	4	J
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	1	J
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSEB01-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-5

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-5B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	2	J
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSORCPZ103-8DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-3

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-3DB52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 2.5

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	13	U
74-87-3	Chloromethane	13	U
75-01-4	Vinyl Chloride	13	U
74-83-9	Bromomethane	13	U
75-00-3	Chloroethane	72	D
75-69-4	Trichlorofluoromethane	13	U
75-35-4	1,1-Dichloroethene	13	U
75-15-0	Carbon disulfide	13	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	13	U
67-64-1	Acetone	31	U
75-09-2	Methylene Chloride	13	U
156-60-5	trans-1,2-Dichloroethene	13	U
1634-04-4	Methyl-tert-butyl ether	13	U
75-34-3	1,1-Dichloroethane	13	U
156-59-2	cis-1,2-Dichloroethene	13	U
78-93-3	2-butanone	31	U
67-66-3	Chloroform	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
71-43-2	Benzene	360	D
107-06-2	1,2-Dichloroethane	13	U
79-01-6	Trichloroethene	13	U
78-87-5	1,2-Dichloropropane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
108-10-1	4-Methyl-2-pentanone	31	U
108-88-3	Toluene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
127-18-4	Tetrachloroethene	13	U
591-78-6	2-hexanone	31	U
124-48-1	Dibromochloromethane	13	U
106-93-4	1,2-Dibromoethane	13	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSORCPZ103-8DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-3

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-3DB52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 2.5

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
75-25-2	Bromoform	13	U
98-82-8	Isopropyl Benzene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
541-73-1	1,3-Dichlorobenzene	13	U
106-46-7	1,4-Dichlorobenzene	13	U
95-50-1	1,2-Dichlorobenzene	13	U
96-12-8	1,2-Dibromo-3-Chloropropane	13	U
120-82-1	1,2,4-Trichlorobenzene	13	U
1330-20-7	Xylene (total)	13	U
79-20-9	Methyl acetate	13	U
110-82-7	Cyclohexane	13	U
108-87-2	Methylcyclohexane	13	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSTB01-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-7

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-7B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	1	J
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSTB01-8

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-7

Sample wt/vol: 5 (g/ml) ML Lab File ID: M2231-7B52

Level: (low/med) LOW Date Received: 12/06/02

% Moisture: not dec. _____ Date Analyzed: 12/10/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	5	U
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW06-8

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: COMPU Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-1

Sample wt/vol: 5 (g/ml) ML Lab File ID: 2390M2231-1

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/13/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	0.17	J

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW06-8MS

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: COMPU Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: WG21973-6

Sample wt/vol: 5 (g/ml) ML Lab File ID: 2410WG21973-6

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/13/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	4.9	

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW06-8MSD

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: COMPU Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: WG21973-7

Sample wt/vol: 5 (g/ml) ML Lab File ID: 2420WG21973-7

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/13/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	4.9	

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSORCPZ102-8

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: COMPU Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-4

Sample wt/vol: 5 (g/ml) ML Lab File ID: 290OM2231-4

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/17/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	3	

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSORCPZ103-8

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: COMPU Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-3

Sample wt/vol: 5 (g/ml) ML Lab File ID: 243OM2231-3

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/13/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	0.057	J

FORM I GC VOA

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWMW06-8

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: COMPU Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-1

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/06/02

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:12/09/02

Concentrated Extract Volume: 1250(uL) Date Analyzed: 12/11/02

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-5	Diesel	1.6	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSORCPZ102-8

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: COMPU Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-4

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/06/02

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:12/09/02

Concentrated Extract Volume: 2500(uL) Date Analyzed: 12/11/02

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-5	Diesel	3.6	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSORCPZ103-8

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: COMPU Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-3

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/06/02

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:12/09/02

Concentrated Extract Volume: 2500(uL) Date Analyzed: 12/11/02

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-5	Diesel	0.99	

FORM I PEST

SW-846

1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWMW06-8

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: M2231

Matrix (soil/water): WATER Lab Sample ID: M2231-1

Date Received: 12/6/02 % Solids: 0.00

Concentration Units (mg/L or mg/kg dry weight): mg/L

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
Sulfate	231				12/7/02
DOC	33.87				12/13/02
Ammonia	5.85				12/13/02
TKN	6.824				12/11/02
NO3	0.050	U			12/7/02
NO3-NO2	0.0500				12/7/02
NO2	0.050	U			12/7/02

Comments:

2

SW-846

1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSORCPZ102-8

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: M2231

Matrix (soil/water): WATER Lab Sample ID: M2231-4

Date Received: 12/6/02 % Solids: 0.00

Concentration Units (mg/L or mg/kg dry weight): mg/L

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
Sulfate	104				12/7/02
DOC	13.08				12/13/02
Ammonia	7.63				12/13/02
TKN	6.612				12/11/02
NO3	0.050	U			12/7/02
NO3-NO2	0.0500	U			12/7/02
NO2	0.050	U			12/7/02

Comments:

3

SW-846

1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSORCPZ103-8

Lab Name: CompuChem Contract: _____

Lab Code: LIBRTY Case No.: _____ NRAS No.: _____

SDG No.: M2231

Matrix (soil/water): WATER Lab Sample ID: M2231-3

Date Received: 12/6/02 % Solids: 0.00

Concentration Units (mg/L or mg/kg dry weight): mg/L

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
Sulfate	130				12/7/02
DOC	13.26				12/13/02
Ammonia	5.67				12/13/02
TKN	8.566				12/11/02
NO3	0.570				12/7/02
NO3-NO2	0.7450				12/7/02
NO2	0.050	U			12/7/02

Comments:

4

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue Cary, NC 27513

INORGANIC CASE SUMMARY NARRATIVE
SDG # M2231
PROTOCOL # SW-846

The indicated Sample Delivery Group (SDG) consisting of three (3) water samples was received into the laboratory management system (LIMS) on December 6, 2002 intact and in good condition with Chains of Custody (COC) records in order. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed for total iron and manganese using analytical methods delineated in SW-846 (Third Edition)-Update III.

SAMPLE IDs:

Customer IDs and correlating laboratory IDs are listed on the cover page.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within SW-846 allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW & PBW) were found to be within acceptable ranges and all field samples were prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spike, CCN = WG21830-1 (ACSGWMW06-8S) was found to be outside control limits for manganese. The reported concentration for this analyte is flagged with an "N" on all associated Form 1 and on Form 5a. The sample matrix spike duplicate, CCN = WG21830-2 (ACSGWMW06-8SD) was found to be inside control limits for the requested analytes.

An "N" indicates a matrix-related interference in the sample preparation procedure &/or analysis for the flagged analyte. This is normally the consequence of a relatively high anionic content in the sample or (for some sediments) an inconsistent sample matrix relative to that analyte.

SW-846 control limits for matrix spike recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

Post-digestion spikes are mandatory for analytes demonstrating unsatisfactory matrix spike recoveries during ICP analysis (excluding silver). The results of such spikes are presented on Form 5b.

Unsatisfactory recovery of post-digestion spikes of this type do not have bearing upon the aforementioned "N" flags, but may indicate interference during analysis &/or a solution matrix which is hostile to the analyte in question.

Satisfactory recovery of an analyte in a post-digestion spike of this type implies interference by the required preparation procedure or in the sample matrix itself. Lack of uniformity for an analyte in sediments will also result in satisfactory recovery of post-digestion spikes after failure in the related matrix spike.

The sample matrix duplicate, CCN = WG21830-3 (ACSGWMW06-8D) was found to be inside SW-846 control limits for the requested analytes.

SW-846 control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the PQL in both the original and duplicate samples, and +/- the PQL for concentrations less than five times the PQL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = M2231-1 (ACSGWMW06-8L) was performed in accordance with SW-846 requirements for ICP analysis.

The adjusted sample concentrations were inside control limits for the requested analytes.

SW-846 control limits for serial dilution are defined as a deviation less than or equal to 10% in the dilution-adjusted concentrations from the original values for all analyte concentrations with values greater than fifty (50) times their respective Instrument Detection Limit (IDL) in the original sample.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Thomas R. Cole
Data Reviewer II
December 12, 2002

SW-846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWMW06-8

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix (soil/water): WATER Lab Sample ID: M2231-1

Level (low/med): LOW Date Received: 12/06/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	2430			P
7439-96-5	Manganese	1810		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSORCPZ102-8

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix (soil/water): WATER Lab Sample ID: M2231-4

Level (low/med): LOW Date Received: 12/06/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	23700			P
7439-96-5	Manganese	335		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

10

SW-846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSORCPZ103-8

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: M2231

Matrix (soil/water): WATER Lab Sample ID: M2231-3

Level (low/med): LOW Date Received: 12/06/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	1970			P
7439-96-5	Manganese	4290		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

11

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWMW06-8

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: N2231

Matrix (soil/water): WATER Lab Sample ID: N2231-1

Level (low/med): LOW Date Received: 12/6/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	1520			P
7439-96-5	Manganese	1720			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSORCPZ1023-8

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: N2231

Matrix (soil/water): WATER Lab Sample ID: N2231-3

Level (low/med): LOW Date Received: 12/6/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	23600			P
7439-96-5	Manganese	299			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSORCPZ103-8

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: N2231

Matrix (soil/water): WATER Lab Sample ID: N2231-2

Level (low/med): LOW Date Received: 12/6/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	1870			P
7439-96-5	Manganese	4090			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

11

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWMW06-8

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: COMPU Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-1

Sample wt/vol: 0.500 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/06/02

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:12/12/02

Concentrated Extract Volume:_____(uL) Date Analyzed: 12/12/02

Injection Volume: _____(uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	Methane	140	B
74-84-0	Ethane	52	J
74-85-1	Ethene	50	J

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSORCPZ102-8

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: COMPU Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-4

Sample wt/vol: 0.500 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/06/02

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:12/12/02

Concentrated Extract Volume:_____(uL) Date Analyzed: 12/12/02

Injection Volume: _____(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	Methane	840	B
74-84-0	Ethane	49	J
74-85-1	Ethene	150	U

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSORCPZ103-8

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: COMPU Case No.: SAS No.: SDG No.: M2231

Matrix: (soil/water) WATER Lab Sample ID: M2231-3

Sample wt/vol: 0.500 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/06/02

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:12/12/02

Concentrated Extract Volume:_____(uL) Date Analyzed: 12/12/02

Injection Volume: _____(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	Methane	420	B
74-84-0	Ethane	15	J
74-85-1	Ethene	5	J

FORM I PEST

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

COMPUCHEM
Attn: DIANE BYRD
501 MADISON AVENUE
CARY, NC 27513-

REPORT DATE: 12/17/02

SAMPLE NUMBER- 202833 SAMPLE ID- ACSGWMW06-8 SAMPLE MATRIX- GW
DATE SAMPLED- 12/05/02 TIME SAMPLED- 1206
DATE RECEIVED- 12/09/02 SAMPLER- NOT SPECIFIED RECEIVED BY- ALT
TIME RECEIVED- 1520 DELIVERED BY- CHRIS BRAND

Page 1 of 1 PROJECT NAME : ACS

ANALYSIS	METHOD	ANALYSIS DATE	BY	RESULT	UNITS	PQL
CHEMICAL OXYGEN DEMAND	EPA 410.4	12/16/02	JMB	39	mg/L	10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090
Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

COMPUCHEM
Attn: DIANE BYRD
501 MADISON AVENUE
CARY, NC 27513-

REPORT DATE: 12/17/02

SAMPLE NUMBER- 202834 SAMPLE ID- ACSORCPZ103-8 SAMPLE MATRIX- GW
DATE SAMPLED- 12/05/02 TIME SAMPLED- 1354
DATE RECEIVED- 12/09/02 SAMPLER- NOT SPECIFIED RECEIVED BY- ALT
TIME RECEIVED- 1520 DELIVERED BY- CHRIS BRAND

Page 1 of 1 PROJECT NAME : ACS

ANALYSIS	METHOD	ANALYSIS DATE	BY	RESULT	UNITS	PQL
CHEMICAL OXYGEN DEMAND	EPA 410.4	12/16/02	JMB	45	mg/L	10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

COMPUCHEM
Attn: DIANE BYRD
501 MADISON AVENUE
CARY, NC 27513-

REPORT DATE: 12/17/02

SAMPLE NUMBER- 202835 SAMPLE ID- ACSORCPZ102-8 SAMPLE MATRIX- GW
DATE SAMPLED- 12/05/02 TIME SAMPLED- 1452
DATE RECEIVED- 12/09/02 SAMPLER- NOT SPECIFIED RECEIVED BY- ALT
TIME RECEIVED- 1520 DELIVERED BY- CHRIS BRAND

Page 1 of 1 PROJECT NAME : ACS

ANALYSIS	METHOD	ANALYSIS DATE	BY	RESULT	UNITS	PQL
CHEMICAL OXYGEN DEMAND	EPA 410.4	12/16/02	JMB	45	mg/L	10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR _____

P.O. Box 12298 • Research Triangle Park, NC 27709 Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Telephone (919) 467-3999

S 11383

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: ACS
TAT: 13 calender days
Report style: full deliverable
Disk requirement:

Samples shipped to: CET
Contact:
Address:
Phone: ( )
Project Locale (state)

CompuChem point-of-contact: (4) Dave Byrd
Phone: (919) 379-4100 X 4009
Fax: (919) 379-
Sampling complete? Y or N (see Note 1)
Project-specific (PS) or Batch (B) QC? PS

BOX #1: 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge 6. Trip Blank 7. Oil 8. Waste 9. Other _____

BOX #2: A. HCl + Ice B. HNO_3 + Ice C. NaOH + Ice D. H_2SO_4 + Ice E. Unpreserved F. Ice Only G. Other _____ H. $NaHSO_4$ + Ice I. ZnAc+NaOH + Ice J. Methanol

BOX #3: F- Filtered U- Unfiltered

BOX #4: H- High M- Medium L- Low

BOX #5: C- CLP T- TCLP S- SW-846 W- CWA 600-series O- Other _____

Sample ID	Date / Year 2002	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS COD					CCN	Remarks / Comments (see Notes 2 & 3)
ACSGWMW06-8	12/5	12:06	2					1		✓					02231-1	202833
ACSORCPZ-103-8	↓	13:54	↓					1		✓					↓ -2	34
ACSORCPZ102-8	↓	14:52	↓					1		✓					↓ -3	35

Clients Special Instructions:

Temperature 2 °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig) Macye J. Baily	Date: 12/9/02	#2 Relinquished by:(sig)	Date: 12/9	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 3:00	Company Name: CET	Time: 3:20	Company Name:	Time:
#1 Received by:(sig)	Date: 12/9/02	#2 Received by:(sig)	Date: 12/9/02	#2 Received by:(sig)	Date:
Company Name: CET	Time: 3:00	Company Name: CET	Time: 1521	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point of contact to verify receipt of samples

sio 2-1

Low COD

Water/Wastewater Method EPA 410.4

CET Inorganic Analysis Form
Date:12/16/02
Time:1241
Analyst:JMB
Curve Date:6/3/02

LIMS Batch#/Sample Type
271422/GW
271423/WW

Lims Batch#	Sample #	Dilution Factor (ml)	Final Volume (ml)	Absorbance at 600 nm	Result (mg/l)	% Recovery or RAPD	Digestion Time
	Blank	1	2	0.000	0.000		1336-1636
	Ck std 75mg/l	1	2	0.034	71.4	95%	
271422	202833	1	2	0.019	39		
	202834	1	2	0.022	45		
	202835	1	2	0.022	45		
	202835D	1	2	0.023	47	4.70	
	202836	1	2	0.034	71		
271423	202926	1	2	0.011	21		

REFERENCES

Wastewater Program References (Includes Groundwater and Solids)

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North Carolina Administrative Code for Wastewater Laboratories

Federal Register, 40 CFR Part 136, July 1, 1998
Metals, Inorganics, and Organics for groundwater and wastewater sampling, preservation, and analysis

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(UST and Non-UST).

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VPH Method

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(Metals analyses for NC groundwater compliance are digested by Method 3030C, Standard Methods, 18th Edition.)

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"Rules Governing Public Water Systems" DENR, Division of Environmental Health, Public Water Supply Section, October, 1997 Printing
North Carolina Administrative Code for required Methods and Sampling for Public Water Systems

Federal Register, 40 CFR Parts 141-143, July 1, 1998
Metals, Inorganics, and Organics for drinking water sampling, preservation, and analysis

" Technical Notes on Drinking Water Methods" USEPA, EMSL, EPA-600/R-94-173, October 1994 (NTIS PB95-104766)
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USEPA ORD, EPA-600/R-94/111, May 1994 (NTIS PB95-125472)

"Methods for the Determination of Organic Compounds in Drinking Water", USEPA, EPA-600/4-88-039, December, 1980, Revise July 1991

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"Methods for Chemical Analysis of Water and Wastes", USEPA
EPA-600/4-79-020, March 1983
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"Standard Methods", 18th Edition, 1992
Inorganics, Metals, Organics, Total & Fecal Coliform (and Strep) for groundwater, wastewater, stream samples, and drinking water

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Wastewater and Drinking Water

TASK 2

December 2002

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT01

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-1

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-1A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	0.5	J
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	0.8	JB
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT01

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-1

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-1A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(u

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	0.7	J
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	0.4	JB
106-46-7	1,4-Dichlorobenzene	0.7	JB
95-50-1	1,2-Dichlorobenzene	2	JB
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	5	U
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT02

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-2

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	1	J
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	3	JB
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT02

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-2

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	6	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	6	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	0.3	JB
106-46-7	1,4-Dichlorobenzene	2	JB
95-50-1	1,2-Dichlorobenzene	3	JB
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	5	U
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	7	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT03

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-3

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-3A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	7	
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	4	JB
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT03

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-3

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-3A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	12	
100-41-4	Ethylbenzene	200	
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	60	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	1	JB
106-46-7	1,4-Dichlorobenzene	6	B
95-50-1	1,2-Dichlorobenzene	25	B
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	970	E
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	
108-87-2	Methylcyclohexane	60	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT03DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-3

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-3D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 3.3

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	17	U
74-87-3	Chloromethane	17	U
75-01-4	Vinyl Chloride	17	U
74-83-9	Bromomethane	17	U
75-00-3	Chloroethane	17	U
75-69-4	Trichlorofluoromethane	17	U
75-35-4	1,1-Dichloroethene	17	U
75-15-0	Carbon disulfide	17	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	17	U
67-64-1	Acetone	18	DJ
75-09-2	Methylene Chloride	2	DJ
156-60-5	trans-1,2-Dichloroethene	17	U
1634-04-4	Methyl-tert-butyl ether	17	U
75-34-3	1,1-Dichloroethane	17	U
156-59-2	cis-1,2-Dichloroethene	17	U
78-93-3	2-butanone	42	U
67-66-3	Chloroform	17	U
71-55-6	1,1,1-Trichloroethane	17	U
56-23-5	Carbon Tetrachloride	17	U
71-43-2	Benzene	7	DJ
107-06-2	1,2-Dichloroethane	17	U
79-01-6	Trichloroethene	17	U
78-87-5	1,2-Dichloropropane	17	U
75-27-4	Bromodichloromethane	17	U
10061-01-5	cis-1,3-Dichloropropene	17	U
108-10-1	4-Methyl-2-pentanone	42	U
108-88-3	Toluene	2	DJB
10061-02-6	trans-1,3-Dichloropropene	17	U
79-00-5	1,1,2-Trichloroethane	17	U
127-18-4	Tetrachloroethene	17	U
591-78-6	2-hexanone	42	U
124-48-1	Dibromochloromethane	17	U
106-93-4	1,2-Dibromoethane	17	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT03DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-3

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-3D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 3.3

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	11	DJ
100-41-4	Ethylbenzene	160	D
100-42-5	Styrene	17	U
75-25-2	Bromoform	17	U
98-82-8	Isopropyl Benzene	46	D
79-34-5	1,1,2,2-Tetrachloroethane	17	U
541-73-1	1,3-Dichlorobenzene	2	DJB
106-46-7	1,4-Dichlorobenzene	8	DJB
95-50-1	1,2-Dichlorobenzene	23	DB
96-12-8	1,2-Dibromo-3-Chloropropane	17	U
120-82-1	1,2,4-Trichlorobenzene	17	U
1330-20-7	Xylene (total)	790	D
79-20-9	Methyl acetate	17	U
110-82-7	Cyclohexane	17	U
108-87-2	Methylcyclohexane	45	D

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT04

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-4

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-4A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	110	
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	0.6	J
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	280	E
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	12	B
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT04

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-4

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-4A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(u

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	84	
100-41-4	Ethylbenzene	2300	E
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	80	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	2	JB
106-46-7	1,4-Dichlorobenzene	11	B
95-50-1	1,2-Dichlorobenzene	24	B
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	2500	E
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	12	
108-87-2	Methylcyclohexane	45	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT04DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-4

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-4D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 50.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	250	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	250	U
74-83-9	Bromomethane	250	U
75-00-3	Chloroethane	98	DJ
75-69-4	Trichlorofluoromethane	250	U
75-35-4	1,1-Dichloroethene	250	U
75-15-0	Carbon disulfide	250	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	250	U
67-64-1	Acetone	630	U
75-09-2	Methylene Chloride	16	DJ
156-60-5	trans-1,2-Dichloroethene	250	U
1634-04-4	Methyl-tert-butyl ether	250	U
75-34-3	1,1-Dichloroethane	250	U
156-59-2	cis-1,2-Dichloroethene	250	U
78-93-3	2-butanone	630	U
67-66-3	Chloroform	250	U
71-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	250	U
71-43-2	Benzene	230	DJ
107-06-2	1,2-Dichloroethane	250	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-pentanone	630	U
108-88-3	Toluene	23	DJB
10061-02-6	trans-1,3-Dichloropropene	250	U
79-00-5	1,1,2-Trichloroethane	250	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-hexanone	630	U
124-48-1	Dibromochloromethane	250	U
106-93-4	1,2-Dibromoethane	250	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT04DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-4

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-4D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 50.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(u

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	66	DJ
100-41-4	Ethylbenzene	1800	D
100-42-5	Styrene	250	U
75-25-2	Bromoform	250	U
98-82-8	Isopropyl Benzene	41	DJ
79-34-5	1,1,2,2-Tetrachloroethane	250	U
541-73-1	1,3-Dichlorobenzene	250	U
106-46-7	1,4-Dichlorobenzene	32	DJB
95-50-1	1,2-Dichlorobenzene	23	DJB
96-12-8	1,2-Dibromo-3-Chloropropane	250	U
120-82-1	1,2,4-Trichlorobenzene	250	U
1330-20-7	Xylene (total)	7700	D
79-20-9	Methyl acetate	250	U
110-82-7	Cyclohexane	250	U
108-87-2	Methylcyclohexane	23	DJ

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT05

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-5

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-5A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	14	
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	0.3	J
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	42	
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	8	B
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT05

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-5

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-5A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	45	
100-41-4	Ethylbenzene	600	E
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	84	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	2	JB
106-46-7	1,4-Dichlorobenzene	10	B
95-50-1	1,2-Dichlorobenzene	14	B
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	1500	E
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	8	
108-87-2	Methylcyclohexane	73	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT05DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-5

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-5D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 8.3

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	42	U
74-87-3	Chloromethane	42	U
75-01-4	Vinyl Chloride	42	U
74-83-9	Bromomethane	42	U
75-00-3	Chloroethane	15	DJ
75-69-4	Trichlorofluoromethane	42	U
75-35-4	1,1-Dichloroethene	42	U
75-15-0	Carbon disulfide	42	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	42	U
67-64-1	Acetone	100	U
75-09-2	Methylene Chloride	3	DJ
156-60-5	trans-1,2-Dichloroethene	42	U
1634-04-4	Methyl-tert-butyl ether	42	U
75-34-3	1,1-Dichloroethane	42	U
156-59-2	cis-1,2-Dichloroethene	42	U
78-93-3	2-butanone	100	U
67-66-3	Chloroform	42	U
71-55-6	1,1,1-Trichloroethane	42	U
56-23-5	Carbon Tetrachloride	42	U
71-43-2	Benzene	43	D
107-06-2	1,2-Dichloroethane	42	U
79-01-6	Trichloroethene	42	U
78-87-5	1,2-Dichloropropane	42	U
75-27-4	Bromodichloromethane	42	U
10061-01-5	cis-1,3-Dichloropropene	42	U
108-10-1	4-Methyl-2-pentanone	100	U
108-88-3	Toluene	4	DJB
10061-02-6	trans-1,3-Dichloropropene	42	U
79-00-5	1,1,2-Trichloroethane	42	U
127-18-4	Tetrachloroethene	42	U
591-78-6	2-hexanone	100	U
124-48-1	Dibromochloromethane	42	U
106-93-4	1,2-Dibromoethane	42	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT05DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-5

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-5D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 8.3

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(u

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	44	D
100-41-4	Ethylbenzene	550	D
100-42-5	Styrene	42	U
75-25-2	Bromoform	42	U
98-82-8	Isopropyl Benzene	68	D
79-34-5	1,1,2,2-Tetrachloroethane	42	U
541-73-1	1,3-Dichlorobenzene	3	DJB
106-46-7	1,4-Dichlorobenzene	12	DJB
95-50-1	1,2-Dichlorobenzene	13	DJB
96-12-8	1,2-Dibromo-3-Chloropropane	42	U
120-82-1	1,2,4-Trichlorobenzene	42	U
1330-20-7	Xylene (total)	1900	D
79-20-9	Methyl acetate	42	U
110-82-7	Cyclohexane	42	U
108-87-2	Methylcyclohexane	54	D

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT06

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-6

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-6A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	43	
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	0.6	J
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	180	
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	17	B
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT06

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-6

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-6A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	91	
100-41-4	Ethylbenzene	1600	E
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	72	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	2	JB
106-46-7	1,4-Dichlorobenzene	11	B
95-50-1	1,2-Dichlorobenzene	16	B
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	1800	E
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	12	
108-87-2	Methylcyclohexane	42	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT06DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-6

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-6D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 25.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	130	U
74-87-3	Chloromethane	130	U
75-01-4	Vinyl Chloride	130	U
74-83-9	Bromomethane	130	U
75-00-3	Chloroethane	47	DJ
75-69-4	Trichlorofluoromethane	130	U
75-35-4	1,1-Dichloroethene	130	U
75-15-0	Carbon disulfide	130	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	130	U
67-64-1	Acetone	120	DJ
75-09-2	Methylene Chloride	130	U
156-60-5	trans-1,2-Dichloroethene	130	U
1634-04-4	Methyl-tert-butyl ether	130	U
75-34-3	1,1-Dichloroethane	130	U
156-59-2	cis-1,2-Dichloroethene	130	U
78-93-3	2-butanone	310	U
67-66-3	Chloroform	130	U
71-55-6	1,1,1-Trichloroethane	130	U
56-23-5	Carbon Tetrachloride	130	U
71-43-2	Benzene	150	D
107-06-2	1,2-Dichloroethane	130	U
79-01-6	Trichloroethene	130	U
78-87-5	1,2-Dichloropropane	130	U
75-27-4	Bromodichloromethane	130	U
10061-01-5	cis-1,3-Dichloropropene	130	U
108-10-1	4-Methyl-2-pentanone	310	U
108-88-3	Toluene	9	DJB
10061-02-6	trans-1,3-Dichloropropene	130	U
79-00-5	1,1,2-Trichloroethane	130	U
127-18-4	Tetrachloroethene	130	U
591-78-6	2-hexanone	310	U
124-48-1	Dibromochloromethane	130	U
106-93-4	1,2-Dibromoethane	130	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT06DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-6

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-6D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 25.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	80	DJ
100-41-4	Ethylbenzene	1400	D
100-42-5	Styrene	130	U
75-25-2	Bromoform	130	U
98-82-8	Isopropyl Benzene	46	DJ
79-34-5	1,1,2,2-Tetrachloroethane	130	U
541-73-1	1,3-Dichlorobenzene	130	U
106-46-7	1,4-Dichlorobenzene	22	DJB
95-50-1	1,2-Dichlorobenzene	13	DJB
96-12-8	1,2-Dibromo-3-Chloropropane	130	U
120-82-1	1,2,4-Trichlorobenzene	130	U
1330-20-7	Xylene (total)	5500	D
79-20-9	Methyl acetate	130	U
110-82-7	Cyclohexane	130	U
108-87-2	Methylcyclohexane	26	DJ

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT07

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-7

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-7A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	100	
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	0.8	J
156-60-5	trans-1,2-Dichloroethene	1	J
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	600	E
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	9	B
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT07

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-7

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-7A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____ L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	120	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	35	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	1	JB
106-46-7	1,4-Dichlorobenzene	7	B
95-50-1	1,2-Dichlorobenzene	11	B
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	1500	E
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	7	
108-87-2	Methylcyclohexane	3	J

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT07DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-7

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-7D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 8.3

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	42	U
74-87-3	Chloromethane	42	U
75-01-4	Vinyl Chloride	42	U
74-83-9	Bromomethane	42	U
75-00-3	Chloroethane	130	D
75-69-4	Trichlorofluoromethane	42	U
75-35-4	1,1-Dichloroethene	42	U
75-15-0	Carbon disulfide	42	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	42	U
67-64-1	Acetone	100	U
75-09-2	Methylene Chloride	3	DJ
156-60-5	trans-1,2-Dichloroethene	42	U
1634-04-4	Methyl-tert-butyl ether	42	U
75-34-3	1,1-Dichloroethane	42	U
156-59-2	cis-1,2-Dichloroethene	42	U
78-93-3	2-butanone	100	U
67-66-3	Chloroform	42	U
71-55-6	1,1,1-Trichloroethane	42	U
56-23-5	Carbon Tetrachloride	42	U
71-43-2	Benzene	720	D
107-06-2	1,2-Dichloroethane	42	U
79-01-6	Trichloroethene	42	U
78-87-5	1,2-Dichloropropane	42	U
75-27-4	Bromodichloromethane	42	U
10061-01-5	cis-1,3-Dichloropropene	42	U
108-10-1	4-Methyl-2-pentanone	100	U
108-88-3	Toluene	4	DJB
10061-02-6	trans-1,3-Dichloropropene	42	U
79-00-5	1,1,2-Trichloroethane	42	U
127-18-4	Tetrachloroethene	42	U
591-78-6	2-hexanone	100	U
124-48-1	Dibromochloromethane	42	U
106-93-4	1,2-Dibromoethane	42	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT07DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-7

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-7D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 8.3

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	120	D
100-41-4	Ethylbenzene	46	D
100-42-5	Styrene	42	U
75-25-2	Bromoform	42	U
98-82-8	Isopropyl Benzene	29	DJ
79-34-5	1,1,2,2-Tetrachloroethane	42	U
541-73-1	1,3-Dichlorobenzene	2	DJB
106-46-7	1,4-Dichlorobenzene	9	DJB
95-50-1	1,2-Dichlorobenzene	10	DJB
96-12-8	1,2-Dibromo-3-Chloropropane	42	U
120-82-1	1,2,4-Trichlorobenzene	42	U
1330-20-7	Xylene (total)	2100	D
79-20-9	Methyl acetate	42	U
110-82-7	Cyclohexane	7	DJ
108-87-2	Methylcyclohexane	4	DJ

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT07B

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-8

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-8A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	170	
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	0.6	J
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	1400	E
107-06-2	1,2-Dichloroethane	27	
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	11	B
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT07B

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-8

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-8A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(u

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	110	
100-41-4	Ethylbenzene	33	
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	28	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	1	JB
106-46-7	1,4-Dichlorobenzene	6	B
95-50-1	1,2-Dichlorobenzene	9	B
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	1800	E
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	6	
108-87-2	Methylcyclohexane	2	J

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT07BDL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-8

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-8D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 20.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	100	U
74-87-3	Chloromethane	100	U
75-01-4	Vinyl Chloride	100	U
74-83-9	Bromomethane	100	U
75-00-3	Chloroethane	200	D
75-69-4	Trichlorofluoromethane	100	U
75-35-4	1,1-Dichloroethene	100	U
75-15-0	Carbon disulfide	100	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	100	U
67-64-1	Acetone	250	U
75-09-2	Methylene Chloride	100	U
156-60-5	trans-1,2-Dichloroethene	100	U
1634-04-4	Methyl-tert-butyl ether	100	U
75-34-3	1,1-Dichloroethane	100	U
156-59-2	cis-1,2-Dichloroethene	100	U
78-93-3	2-butanone	250	U
67-66-3	Chloroform	100	U
71-55-6	1,1,1-Trichloroethane	100	U
56-23-5	Carbon Tetrachloride	100	U
71-43-2	Benzene	1700	D
107-06-2	1,2-Dichloroethane	100	U
79-01-6	Trichloroethene	100	U
78-87-5	1,2-Dichloropropane	100	U
75-27-4	Bromodichloromethane	100	U
10061-01-5	cis-1,3-Dichloropropene	100	U
108-10-1	4-Methyl-2-pentanone	250	U
108-88-3	Toluene	6	DJB
10061-02-6	trans-1,3-Dichloropropene	100	U
79-00-5	1,1,2-Trichloroethane	100	U
127-18-4	Tetrachloroethene	100	U
591-78-6	2-hexanone	250	U
124-48-1	Dibromochloromethane	100	U
106-93-4	1,2-Dibromoethane	100	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT07BDL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-8

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-8D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 20.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	120	D
100-41-4	Ethylbenzene	100	U
100-42-5	Styrene	100	U
75-25-2	Bromoform	100	U
98-82-8	Isopropyl Benzene	18	DJ
79-34-5	1,1,2,2-Tetrachloroethane	100	U
541-73-1	1,3-Dichlorobenzene	100	U
106-46-7	1,4-Dichlorobenzene	11	DJB
95-50-1	1,2-Dichlorobenzene	10	DJB
96-12-8	1,2-Dibromo-3-Chloropropane	100	U
120-82-1	1,2,4-Trichlorobenzene	100	U
1330-20-7	Xylene (total)	5200	D
79-20-9	Methyl acetate	100	U
110-82-7	Cyclohexane	100	U
108-87-2	Methylcyclohexane	100	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDUP01

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-9

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-9A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	100	
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	0.4	J
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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	260	E
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	23	B
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDUP01

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-9

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-9A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	80	
100-41-4	Ethylbenzene	1800	E
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	73	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	2	JB
106-46-7	1,4-Dichlorobenzene	10	B
95-50-1	1,2-Dichlorobenzene	23	B
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	2000	E
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	11	
108-87-2	Methylcyclohexane	43	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDUP01DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-9

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-9D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 55.6

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	280	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	280	U
74-83-9	Bromomethane	280	U
75-00-3	Chloroethane	150	DJ
75-69-4	Trichlorofluoromethane	280	U
75-35-4	1,1-Dichloroethene	280	U
75-15-0	Carbon disulfide	280	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	280	U
67-64-1	Acetone	310	DJ
75-09-2	Methylene Chloride	280	U
156-60-5	trans-1,2-Dichloroethene	280	U
1634-04-4	Methyl-tert-butyl ether	280	U
75-34-3	1,1-Dichloroethane	280	U
156-59-2	cis-1,2-Dichloroethene	280	U
78-93-3	2-butanone	700	U
67-66-3	Chloroform	280	U
71-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	280	U
71-43-2	Benzene	280	D
107-06-2	1,2-Dichloroethane	280	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-pentanone	700	U
108-88-3	Toluene	17	DJB
10061-02-6	trans-1,3-Dichloropropene	280	U
79-00-5	1,1,2-Trichloroethane	280	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-hexanone	700	U
124-48-1	Dibromochloromethane	280	U
106-93-4	1,2-Dibromoethane	280	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDUP01DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-9

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-9D2A59

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 01/03/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 55.6

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	76	DJ
100-41-4	Ethylbenzene	2100	D
100-42-5	Styrene	280	U
75-25-2	Bromoform	280	U
98-82-8	Isopropyl Benzene	40	DJ
79-34-5	1,1,2,2-Tetrachloroethane	280	U
541-73-1	1,3-Dichlorobenzene	280	U
106-46-7	1,4-Dichlorobenzene	27	DJB
95-50-1	1,2-Dichlorobenzene	20	DJB
96-12-8	1,2-Dibromo-3-Chloropropane	280	U
120-82-1	1,2,4-Trichlorobenzene	280	U
1330-20-7	Xylene (total)	9200	D
79-20-9	Methyl acetate	280	U
110-82-7	Cyclohexane	280	U
108-87-2	Methylcyclohexane	20	DJ

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWEB01

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-11

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-11RB52

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/30/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	2	J
75-09-2	Methylene Chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	0.6	J
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	3	JB
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWEB01

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-11

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-11RB52

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/30/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	0.2	JB
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	5	U
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWTB01

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-10

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-10RB52

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/30/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-butanone	13	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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	3	JB
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWTB01

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-10

Sample wt/vol: 5 (g/ml) ML Lab File ID: P2231-10RB52

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/30/02

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	0.2	JB
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	5	U
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	5	U
108-87-2	Methylcyclohexane	5	U

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT01

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-1

Sample wt/vol: 5 (g/ml) ML Lab File ID: 370OP2231-1

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/24/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	0.072	J

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT02

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-2

Sample wt/vol: 5 (g/ml) ML Lab File ID: 371OP2231-2

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/24/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	0.21	J

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT03

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-3

Sample wt/vol: 5 (g/ml) ML Lab File ID: 372OP2231-3

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/24/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	7.2	

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT04

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-4

Sample wt/vol: 5 (g/ml) ML Lab File ID: 373OP2231-4

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/24/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	45	E

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT04DL

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-4

Sample wt/vol: 5 (g/ml) ML Lab File ID: 384OP2231-4

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	40	D

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT05

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-5

Sample wt/vol: 5 (g/ml) ML Lab File ID: 374OP2231-5

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/24/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	16	

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT06

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-6

Sample wt/vol: 5 (g/ml) ML Lab File ID: 375OP2231-6

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/24/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	26	E

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT06DL

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-6

Sample wt/vol: 5 (g/ml) ML Lab File ID: 385OP2231-6

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/26/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	30	D

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDPT07

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-7

Sample wt/vol: 5 (g/ml) ML Lab File ID: 376OP2231-7

Level: (low/med) LOW Date Received: 12/21/02

% Moisture: not dec. _____ Date Analyzed: 12/24/02

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-7	Gasoline	8.1	

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT01

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:12/26/02

Concentrated Extract Volume: 5000(uL) Date Analyzed: 01/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-5	Diesel	1.2	

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT02

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-2

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:12/26/02

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/27/02

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-5	-------Diesel	1.0	U

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT03

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-3

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:12/26/02

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/27/02

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-5	Diesel	4.5	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT04

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-4

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:12/26/02

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/27/02

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-5	Diesel	21	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT05

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-5

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:12/26/02

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/27/02

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-5	Diesel	8.0	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT06

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-6

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:12/26/02

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/27/02

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-5	Diesel	12	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT07

Lab Name: COMPUCHEM Contract: 8015B-DRO

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-7

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:12/26/02

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/27/02

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q
9999-99-5	Diesel	3.3	

FORM I PEST

SW-846

1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT01

Lab Name: CompuChem Contract: _____

Lab Code: LIBRTY Case No.: _____ NRAS No.: _____

SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-1

Date Received: 12/21/02 % Solids: 0.00

Concentration Units (mg/L or mg/kg dry weight): mg/L

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
DOC	89.14				12/27/03
Sulfate	70.6				12/21/03
Ammonia	1.01				12/31/02
TKN	1.214				12/31/02
NO3	0.050	U			12/21/03
NO3-NO2	0.0500	U			12/30/03
NO2	0.050	U			12/21/03

Comments: _____

2

SW-846

1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT02

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-2

Date Received: 12/21/02 % Solids: 0.00

Concentration Units (mg/L or mg/kg dry weight): mg/L

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
DOC	111.0				12/27/03
Sulfate	6.55				12/21/03
Ammonia	0.854				12/31/02
TKN	0.9896				12/31/02
NO3	0.050	U			12/21/03
NO3-NO2	0.0500	U			12/30/03
NO2	0.050	U			12/21/03

Comments:

SW-846

1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT03

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-3

Date Received: 12/21/02 % Solids: 0.00

Concentration Units (mg/L or mg/kg dry weight): mg/L

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
DOC	118.0				12/27/03
Sulfate	5.00	U			12/21/03
Ammonia	1.27				12/31/02
TKN	1.453				12/31/02
NO3	0.050	U			12/21/03
NO3-NO2	0.0500	U			12/30/03
NO2	0.050	U			12/21/03

Comments:

SW-846

1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT04

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-4

Date Received: 12/21/02 % Solids: 0.00

Concentration Units (mg/L or mg/kg dry weight): mg/L

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
DOC	7.097				12/27/03
Sulfate	5.00	U			12/21/03
Ammonia	2.54				12/31/02
TKN	3.037				12/31/02
NO3	0.050	U			12/21/03
NO3-NO2	0.0500	U			12/30/03
NO2	0.050	U			12/21/03

Comments:

SW-846

1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT05

Lab Name: CompuChem Contract: _____

Lab Code: LIBRTY Case No.: _____ NRAS No.: _____

SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-5

Date Received: 12/21/02 % Solids: 0.00

Concentration Units (mg/L or mg/kg dry weight): mg/L

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
DOC	109.0				12/27/03
Sulfate	5.00	U			12/21/03
Ammonia	1.52				12/31/02
TKN	1.809				12/31/02
NO3	0.050	U			12/21/03
NO3-NO2	0.0500	U			12/30/03
NO2	0.050	U			12/21/03

Comments:

SW-846

1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT06

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-6

Date Received: 12/21/02 % Solids: 0.00

Concentration Units (mg/L or mg/kg dry weight): mg/L

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
DOC	124.0				12/27/03
Sulfate	5.00	U			12/21/03
Ammonia	1.41				12/31/02
TKN	1.834				12/31/02
NO3	0.050	U			12/21/03
NO3-NO2	0.0500	U			12/30/03
NO2	0.050	U			12/21/03

Comments:

SW-846

1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT07

Lab Name: CompuChem Contract: _____

Lab Code: LIBRTY Case No.: _____ NRAS No.: _____

SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-7

Date Received: 12/21/02 % Solids: 0.00

Concentration Units (mg/L or mg/kg dry weight): mg/L

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
DOC	7.275				12/27/03
Sulfate	5.00	U			12/21/03
Ammonia	3.43				12/31/02
TKN	3.775				12/31/02
NO3	0.050	U			12/21/03
NO3-NO2	0.0500	U			12/30/03
NO2	0.050	U			12/21/03

Comments: _____

CompuChem
A Division of Liberty Analytical Corp.
501 Madison Avenue Cary, NC 27513

INORGANIC CASE SUMMARY NARRATIVE
SDG # P2231
PROTOCOL #SW-846

The indicated Sample Delivery Group (SDG) consisting of seven (7) water samples was received into the laboratory management system (LIMS) on December 21, 2002 intact and in good condition with Chain of Custody (COC) records in order. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed for iron and manganese using analytical methods delineated in SW-846 (update III).

SAMPLE IDs:

The cover page contained in this package lists the client ID's and the associated CompuChem numbers which are part of this SDG.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV), blanks (ICB, CCB) and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within SW-846 allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW & PBW) were found to be within acceptable ranges. All field samples were run within contract holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spike WG22227-1 (ACSGWDPT04S) was inside control limits for all requested analytes.. The sample matrix spike duplicate, WG22227-2 (ACSGWDPT04SD) was inside control limits for all requested analytes.

SW-846 control limits for matrix spike recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more: in this case effected analytes are not flagged even if recoveries fall outside percentage recovery control limits.

The sample matrix duplicate, WG22227-3 (ACSGWDPT04D) was inside control limits for all requested analytes.

SW-846 control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, P2231-4 (ACSGWDPT04L) was performed in accordance with SW-846 requirements for ICP analysis.

The adjusted sample concentrations were inside control limits for all requested analytes.

SW-846 control limits for serial dilution are defined as a deviation less than or equal to 10% in the dilution-adjusted concentrations from the original values for all analyte concentrations with values greater than fifty (50) times their respective Instrument Detection Limit (IDL) in the original sample.

Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Mary K. Powell
Data Reviewer II
January 6, 2003

Note: This report is paginated for reference and accountability.

SW846 METALS
-1-
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
ACSGWDPT01

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-1

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	13100			P
7439-96-5	Manganese	1950			P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

SW846 METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
ACSGWDPT02

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-2

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	9030			P
7439-96-5	Manganese	766			P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

10

SW846 METALS
-1-
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
ACSGWDPT03

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-3

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	8790			P
7439-96-5	Manganese	496			P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

11

SW846 METALS
-1-
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
ACSGWDPT04

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-4

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	12500			P
7439-96-5	Manganese	106			P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

12

SW846 METALS
-1-
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
ACSGWDPT05

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-5

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	13600			P
7439-96-5	Manganese	215			P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

13

SW846 METALS
-1-
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
ACSGWDPT06

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-6

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	9900			P
7439-96-5	Manganese	186			P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

SW846 METALS
-1-
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
ACSGWDPT07

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix (soil/water): WATER Lab Sample ID: P2231-7

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	13900			P
7439-96-5	Manganese	238			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue Cary, NC 27513

INORGANIC CASE SUMMARY NARRATIVE
SDG # QQ2231
PROTOCOL #SW-846

The indicated Sample Delivery Group (SDG) consisting of seven (7) dissolved water samples was received into the laboratory management system (LIMS) on December 21, 2002 intact and in good condition with Chains of Custody (COC) records in order. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed for dissolved iron and manganese using analytical methods delineated in SW-846 (Third Edition)-Update III.

SAMPLE IDs:

Customer IDs and correlating laboratory IDs are listed on the cover page.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within SW-846 allowable limits.

DISSOLVED SAMPLE QUALITY CONTROL:

The sample quality control verifications (LCSW & PBW) were found to be within acceptable ranges and all dissolved samples were analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spike, CCN = WG22228-1 (ACSGWDPT04S) and the sample matrix spike duplicate, CCN = WG22228-2 (ACSGWDPT04SD) were found to be inside control limits for the requested analytes.

SW-846 control limits for matrix spike recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = WG22228-3 (ACSGWDPT04D) was inside control limits for the requested analytes.

SW-846 control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the PQL in both the original and duplicate samples, and +/- the PQL for concentrations less than five times the PQL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = QQ2231-4 (ACSGWDPT04L) was performed in accordance with SW-846 requirements for ICP analysis.

The adjusted sample concentrations were inside control limits for the requested analytes.

SW-846 control limits for serial dilution are defined as a deviation less than or equal to 10% in the dilution-adjusted concentrations from the original values for all analyte concentrations with values greater than fifty (50) times their respective Instrument Detection Limit (IDL) in the original sample.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Thomas R. Cole
Data Reviewer II
December 31, 2002

SW-846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT01

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QQ2231

Matrix (soil/water): WATER Lab Sample ID: QQ2231-1

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	12800			P
7439-96-5	Manganese	1960			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9

SW-846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT02

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QQ2231

Matrix (soil/water): WATER Lab Sample ID: QQ2231-2

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	8650			P
7439-96-5	Manganese	740			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

10

SW-846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT03

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QQ2231

Matrix (soil/water): WATER Lab Sample ID: QQ2231-3

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	8780			P
7439-96-5	Manganese	492			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

11

SW-846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT04

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QQ2231

Matrix (soil/water): WATER Lab Sample ID: QQ2231-4

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	12500			P
7439-96-5	Manganese	107			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

12

SW-846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT05

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QQ2231

Matrix (soil/water): WATER Lab Sample ID: QQ2231-5

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	13800			P
7439-96-5	Manganese	213			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

13

SW-846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT06

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QQ2231

Matrix (soil/water): WATER Lab Sample ID: QQ2231-6

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	9670			P
7439-96-5	Manganese	172			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

14

SW-846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWDPT07

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QQ2231

Matrix (soil/water): WATER Lab Sample ID: QQ2231-7

Level (low/med): LOW Date Received: 12/21/02

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	13200			P
7439-96-5	Manganese	219			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

15

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT01

Lab Name: COMPUCHEM Contract: RSK-175

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-1

Sample wt/vol: 0.500 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:01/03/03

Concentrated Extract Volume:_____(uL) Date Analyzed: 01/03/03

Injection Volume: _____(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	Methane	0.4	JB
74-84-0	Ethane	0.9	J
74-85-1	Ethene	0.3	JB

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT02

Lab Name: COMPUCHEM Contract: RSK-175

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-2

Sample wt/vol: 0.500 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:01/03/03

Concentrated Extract Volume:_____(uL) Date Analyzed: 01/03/03

Injection Volume: _____(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	Methane	85	B
74-84-0	Ethane	0.9	J
74-85-1	Ethene	0.8	JB

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT03

Lab Name: COMPUCHEM Contract: RSK-175

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-3

Sample wt/vol: 0.500 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:01/03/03

Concentrated Extract Volume:_____(uL) Date Analyzed: 01/03/03

Injection Volume: _____(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	Methane	120	B
74-84-0	Ethane	4	J
74-85-1	Ethene	4	JB

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT04

Lab Name: COMPUCHEM Contract: RSK-175

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-4

Sample wt/vol: 0.500 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:01/03/03

Concentrated Extract Volume:_____(uL) Date Analyzed: 01/03/03

Injection Volume: _____(uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	Methane	520	B
74-84-0	Ethane	10	J
74-85-1	Ethene	75	U

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT05

Lab Name: COMPUCHEM Contract: RSK-175

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-5

Sample wt/vol: 0.500 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:01/03/03

Concentrated Extract Volume:_____(uL) Date Analyzed: 01/03/03

Injection Volume: _____(uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	Methane	410	B
74-84-0	Ethane	6	J
74-85-1	Ethene	2	JB

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT06

Lab Name: COMPUCHEM Contract: RSK-175

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-6

Sample wt/vol: 0.500 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:01/03/03

Concentrated Extract Volume:_____(uL) Date Analyzed: 01/03/03

Injection Volume: _____(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	Methane	0.7	JB
74-84-0	Ethane	0.04	J
74-85-1	Ethene	2	U

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACSGWDPT07

Lab Name: COMPUCHEM Contract: RSK-175

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: P2231

Matrix: (soil/water) WATER Lab Sample ID: P2231-7

Sample wt/vol: 0.500 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 12/21/02

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:01/03/03

Concentrated Extract Volume:_____(uL) Date Analyzed: 01/03/03

Injection Volume: _____(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	Methane	720	B
74-84-0	Ethane	35	J
74-85-1	Ethene	150	U

FORM I PEST

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

COMPUCHEM
Attn: DIANE BYRD
501 MADISON AVENUE
CARY, NC 27513-

REPORT DATE: 01/02/03

SAMPLE NUMBER- 203223 SAMPLE ID- ACSGWDPT01 SAMPLE MATRIX- GW
DATE SAMPLED- 12/19/02 TIME SAMPLED- 0907
DATE RECEIVED- 12/23/02 SAMPLER- CLIENT RECEIVED BY- JCF
TIME RECEIVED- 1155 DELIVERED BY- C SMELL

Page 1 of 1 PROJECT NAME : ACS

ANALYSIS	METHOD	ANALYSIS DATE	BY	RESULT	UNITS	PQL
CHEMICAL OXYGEN DEMAND	EPA 410.4	01/02/03	JMB	17	mg/L	10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090
Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

COMPUCHEM
Attn: DIANE BYRD
501 MADISON AVENUE
CARY, NC 27513-

REPORT DATE: 01/02/03

SAMPLE NUMBER- 203224 SAMPLE ID- ACSGWDPT02 SAMPLE MATRIX- GW
DATE SAMPLED- 12/19/02 TIME SAMPLED- 1020
DATE RECEIVED- 12/23/02 SAMPLER- CLIENT RECEIVED BY- JCF
TIME RECEIVED- 1155 DELIVERED BY- C SMELL

Page 1 of 1 PROJECT NAME : ACS

ANALYSIS	METHOD	ANALYSIS DATE	BY	RESULT	UNITS	PQL
CHEMICAL OXYGEN DEMAND	EPA 410.4	01/02/03	JMB	< 10	mg/L	10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR _____

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090
Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

COMPUCHEM
Attn: DIANE BYRD
501 MADISON AVENUE
CARY, NC 27513-

REPORT DATE: 01/02/03

SAMPLE NUMBER- 203225 SAMPLE ID- ACSGWDPT03 SAMPLE MATRIX- GW
DATE SAMPLED- 12/19/02 TIME SAMPLED- 1130
DATE RECEIVED- 12/23/02 SAMPLER- CLIENT RECEIVED BY- JCF
TIME RECEIVED- 1155 DELIVERED BY- C SMELL

Page 1 of 1 PROJECT NAME : ACS

ANALYSIS	METHOD	ANALYSIS DATE	BY	RESULT	UNITS	PQL
CHEMICAL OXYGEN DEMAND	EPA 410.4	01/02/03	JMB	13	mg/L	10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR _____

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090
Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

COMPUCHEM
Attn: DIANE BYRD
501 MADISON AVENUE
CARY, NC 27513-

REPORT DATE: 01/02/03

SAMPLE NUMBER- 203226 SAMPLE ID- ACSGWDPT04 SAMPLE MATRIX- GW
DATE SAMPLED- 12/19/02 TIME SAMPLED- 1233
DATE RECEIVED- 12/23/02 SAMPLER- CLIENT RECEIVED BY- JCF
TIME RECEIVED- 1155 DELIVERED BY- C SMELL

Page 1 of 1 PROJECT NAME : ACS

ANALYSIS	METHOD	ANALYSIS DATE	BY	RESULT	UNITS	PQL
CHEMICAL OXYGEN DEMAND	EPA 410.4	01/02/03	JMB	28	mg/L	10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR _____

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090

Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

COMPUCHEM
Attn: DIANE BYRD
501 MADISON AVENUE
CARY, NC 27513-

REPORT DATE: 01/02/03

SAMPLE NUMBER- 203227 SAMPLE ID- ACSGWDPT05 SAMPLE MATRIX- GW
DATE SAMPLED- 12/19/02 TIME SAMPLED- 1347
DATE RECEIVED- 12/23/02 SAMPLER- CLIENT RECEIVED BY- JCF
TIME RECEIVED- 1155 DELIVERED BY- C SMELL

Page 1 of 1 PROJECT NAME : ACS

ANALYSIS	METHOD	ANALYSIS DATE	BY	RESULT	UNITS	PQL
CHEMICAL OXYGEN DEMAND	EPA 410.4	01/02/03	JMB	17	mg/L	10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090
Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

COMPUCHEM
Attn: DIANE BYRD
501 MADISON AVENUE
CARY, NC 27513-

REPORT DATE: 01/02/03

SAMPLE NUMBER- 203228 SAMPLE ID- ACSGWDPT06 SAMPLE MATRIX- GW
DATE SAMPLED- 12/19/02 TIME SAMPLED- 1505
DATE RECEIVED- 12/23/02 SAMPLER- CLIENT RECEIVED BY- JCF
TIME RECEIVED- 1155 DELIVERED BY- C SMELL

Page 1 of 1 PROJECT NAME : ACS

ANALYSIS	METHOD	ANALYSIS DATE	BY	RESULT	UNITS	PQL
CHEMICAL OXYGEN DEMAND	EPA 410.4	01/02/03	JMB	28	mg/L	10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR

P.O. Box 12298 • Research Triangle Park, NC 27709
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CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

COMPUCHEM
Attn: DIANE BYRD
501 MADISON AVENUE
CARY, NC 27513-

REPORT DATE: 01/02/03

SAMPLE NUMBER- 203229 SAMPLE ID- ACSGWDPT07 SAMPLE MATRIX- GW
DATE SAMPLED- 12/20/02 TIME SAMPLED- 0900
DATE RECEIVED- 12/23/02 SAMPLER- CLIENT RECEIVED BY- JCF
TIME RECEIVED- 1155 DELIVERED BY- C SMELL

Page 1 of 1 PROJECT NAME : ACS

ANALYSIS	METHOD	ANALYSIS DATE	BY	RESULT	UNITS	PQL
CHEMICAL OXYGEN DEMAND	EPA 410.4	01/02/03	JMB	21	mg/L	10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR _____

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090

Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

S 11400

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: ACS	Samples shipped to: CET	CompuChem point-of-contact: (4) Diane Byrd
	Contact:	
TAT: 13 calendar days	Address:	Phone: (919) 379-4100 X 4009
		Fax: (919) 379-_____
Report style: full deliverable		
	Phone: ( ) 467-3040	Sampling complete? Y or N (see Note 1)
Disk requirement:	Project Locale (state)	Project-specific (PS) or Batch (B) QC? PS

BOX #1
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil / Sediment / Sludge
6. Trip Blank
7. Oil
8. Waste
9. Other _____

BOX #2
A. HCl + Ice
B. HNO_3 + Ice
C. NaOH + Ice
D. H_2SO_4 + Ice
E. Unpreserved
F. Ice Only
G. Other _____
H. $NaHSO_4$ + Ice
I. ZnAc+NaOH + Ice
J. Methanol

BOX #3
F- Filtered
U- Unfiltered

BOX #4
H- High
M- Medium
L- Low

BOX #5
C- CLP
T- TCLP
S- SW-846
W- CWA 600-series
O- Other _____

Sample ID	Date / Year 2002	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS COD 410					CCN	Remarks / Comments (see Notes 2 & 3)
ACSGWDPT01	12/19	09:07	2					1		✓					QR2231-1	CET 203223
ACSGWDPT02		10:20								✓					-2	224
ACSGWDPT03		11:30								✓					-3	225
ACSGWDPT04		12:33								✓					-4	226
ACSGWDPT05		13:47								✓					-5	227
ACSGWDPT06		15:05								✓					-6	228
ACSGWDPT07	12/20	09:00								✓					-7	230

Clients Special Instructions: Temperature 3 °C

Lab: Received in good condition? Y or N **Describe any problems:**

#1 Relinquished by:(sig)	Date: 12/23/02	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 11:55	Company Name:	Time:	Company Name:	Time
#1 Received by:(sig)	Date: 12/22/02	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date:
Company Name: CET	Time: 1155	Company Name:	Time:	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio, if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge
Note (3) All lab copies of data should be retained for a minimum of 3 years
Note (4) Please call point-of-contact to verify receipt of samples

Revision 0 2-10-99

Low COD

Water/Wastewater Method EPA 410.4

CET Inorganic Analysis Form

Date:1/2/03
Time:0909
Analyst:JMB
Curve Date:6/3/02

LIMS Batch#/Sample Type
271650/GW

Lims Batch#	Sample #	Dilution Factor (ml)	Final Volume (ml)	Absorbance at 600 nm	**Result (mg/l)**	% Recovery or RAPD	Digestion Time
	Blank	1	2	0.000	**0.000**		1022-1222
	Ck std 75mg/l	1	2	0.033	**69.2**	92%	
271650	203223	1	2	0.009	**17**		
	203224	1	2	0.005	**< 10**		
	203225	1	2	0.007	**13**		
	203226	1	2	0.014	**28**		
	203227	1	2	0.009	**17**		
	203228	1	2	0.014	**28**		
	203229	1	2	0.011	**21**		
	203229 D	1	2	0.010	**19**	10.8	

TASK 3

February 2003

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT01-27

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-1

Sample wt/vol: 5.98(g/mL) G Lab File ID: QS2231-1A59

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 20 Date Analyzed: 02/26/03

GC Column: ZB624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	2	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	17	
75-09-2	Methylene Chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	0.5	J
78-93-3	2-butanone	13	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	4	J
107-06-2	1,2-Dichloroethane	5	U
79-01-6	Trichloroethene	0.4	J
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	3	J
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT01-27

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-1

Sample wt/vol: 5.98(g/mL) G Lab File ID: QS2231-1A59

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 20 Date Analyzed: 02/26/03

GC Column: ZB624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(u

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	0.5	J
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	1	J
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	2	J
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	2	J
108-87-2	Methylcyclohexane	4	J

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT02-22

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-2

Sample wt/vol: 5.74(g/mL) G Lab File ID: QS2231-2B61

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 11 Date Analyzed: 02/23/03

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	1	J
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	12	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	52	B
75-09-2	Methylene Chloride	0.6	J
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	1	J
78-93-3	2-butanone	16	B
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	8	
56-23-5	Carbon Tetrachloride	5	U
71-43-2	Benzene	7	
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	5	J
108-88-3	Toluene	11	
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	0.9	JB
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT02-22

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-2

Sample wt/vol: 5.74(g/mL) G Lab File ID: QS2231-2B61

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 11 Date Analyzed: 02/23/03

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(u

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	0.5	J
100-41-4	Ethylbenzene	3	J
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	1	J
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	2	J
95-50-1	1,2-Dichlorobenzene	11	B
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	11	J
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	8	
108-87-2	Methylcyclohexane	19	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT02-27

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-3

Sample wt/vol: 5.67(g/mL) G Lab File ID: QS2231-3B61

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 19 Date Analyzed: 02/23/03

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	3	J
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	1	J
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	0.6	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	27	B
75-09-2	Methylene Chloride	0.8	J
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	1	J
78-93-3	2-butanone	10	JB
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	10	
56-23-5	Carbon Tetrachloride	5	U
71-43-2	Benzene	100	
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	3	J
108-88-3	Toluene	9	
10061-02-6	trans-1,3-Dichloropropene	3	J
79-00-5	1,1,2-Trichloroethane	1	J
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	1	JB
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT02-27

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-3

Sample wt/vol: 5.67(g/mL) G Lab File ID: QS2231-3B61

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 19 Date Analyzed: 02/23/03

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(u

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	3	J
100-41-4	Ethylbenzene	7	
100-42-5	Styrene	0.3	J
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	36	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	8	
95-50-1	1,2-Dichlorobenzene	56	B
96-12-8	1,2-Dibromo-3-Chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
1330-20-7	Xylene (total)	31	
79-20-9	Methyl acetate	5	U
110-82-7	Cyclohexane	17	
108-87-2	Methylcyclohexane	59	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT03-19

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-5

Sample wt/vol: 5.31(g/mL) G Lab File ID: QS2231-5D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 6 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 30(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	830	U
74-87-3	Chloromethane	830	U
75-01-4	Vinyl Chloride	830	U
74-83-9	Bromomethane	830	U
75-00-3	Chloroethane	830	U
75-69-4	Trichlorofluoromethane	830	U
75-35-4	1,1-Dichloroethene	830	U
75-15-0	Carbon disulfide	830	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	830	U
67-64-1	Acetone	2100	U
75-09-2	Methylene Chloride	830	U
156-60-5	trans-1,2-Dichloroethene	830	U
1634-04-4	Methyl-tert-butyl ether	830	U
75-34-3	1,1-Dichloroethane	830	U
156-59-2	cis-1,2-Dichloroethene	830	U
78-93-3	2-butanone	2100	U
67-66-3	Chloroform	830	U
71-55-6	1,1,1-Trichloroethane	830	U
56-23-5	Carbon Tetrachloride	830	U
71-43-2	Benzene	830	U
107-06-2	1,2-Dichloroethane	830	U
79-01-6	Trichloroethene	830	U
78-87-5	1,2-Dichloropropane	830	U
75-27-4	Bromodichloromethane	830	U
10061-01-5	cis-1,3-Dichloropropene	830	U
108-10-1	4-Methyl-2-pentanone	2100	U
108-88-3	Toluene	1500	
10061-02-6	trans-1,3-Dichloropropene	830	U
79-00-5	1,1,2-Trichloroethane	830	U
127-18-4	Tetrachloroethene	830	U
591-78-6	2-hexanone	2100	U
124-48-1	Dibromochloromethane	830	U
106-93-4	1,2-Dibromoethane	830	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT03-19

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-5

Sample wt/vol: 5.31(g/mL) G Lab File ID: QS2231-5D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 6 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 30(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	830	U
100-41-4	Ethylbenzene	17000	
100-42-5	Styrene	830	U
75-25-2	Bromoform	830	U
98-82-8	Isopropyl Benzene	2600	
79-34-5	1,1,2,2-Tetrachloroethane	830	U
541-73-1	1,3-Dichlorobenzene	830	U
106-46-7	1,4-Dichlorobenzene	830	U
95-50-1	1,2-Dichlorobenzene	1300	
96-12-8	1,2-Dibromo-3-Chloropropane	830	U
120-82-1	1,2,4-Trichlorobenzene	830	U
1330-20-7	Xylene (total)	83000	
79-20-9	Methyl acetate	830	U
110-82-7	Cyclohexane	830	U
108-87-2	Methylcyclohexane	2500	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT03-22

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-4

Sample wt/vol: 5.81(g/mL) G Lab File ID: QS2231-4D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 11 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 5(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	4800	U
74-87-3	Chloromethane	4800	U
75-01-4	Vinyl Chloride	4800	U
74-83-9	Bromomethane	4800	U
75-00-3	Chloroethane	4800	U
75-69-4	Trichlorofluoromethane	4800	U
75-35-4	1,1-Dichloroethene	4800	U
75-15-0	Carbon disulfide	4800	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	4800	U
67-64-1	Acetone	12000	U
75-09-2	Methylene Chloride	4800	U
156-60-5	trans-1,2-Dichloroethene	4800	U
1634-04-4	Methyl-tert-butyl ether	4800	U
75-34-3	1,1-Dichloroethane	4800	U
156-59-2	cis-1,2-Dichloroethene	4800	U
78-93-3	2-butanone	12000	U
67-66-3	Chloroform	4800	U
71-55-6	1,1,1-Trichloroethane	4800	U
56-23-5	Carbon Tetrachloride	4800	U
71-43-2	Benzene	4800	U
107-06-2	1,2-Dichloroethane	4800	U
79-01-6	Trichloroethene	4800	U
78-87-5	1,2-Dichloropropane	4800	U
75-27-4	Bromodichloromethane	4800	U
10061-01-5	cis-1,3-Dichloropropene	4800	U
108-10-1	4-Methyl-2-pentanone	12000	U
108-88-3	Toluene	19000	
10061-02-6	trans-1,3-Dichloropropene	4800	U
79-00-5	1,1,2-Trichloroethane	4800	U
127-18-4	Tetrachloroethene	4800	U
591-78-6	2-hexanone	12000	U
124-48-1	Dibromochloromethane	4800	U
106-93-4	1,2-Dibromoethane	4800	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT03-22

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-4

Sample wt/vol: 5.81(g/mL) G Lab File ID: QS2231-4D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 11 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 5(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	4800	U
100-41-4	Ethylbenzene	110000	
100-42-5	Styrene	1200	J
75-25-2	Bromoform	4800	U
98-82-8	Isopropyl Benzene	11000	
79-34-5	1,1,2,2-Tetrachloroethane	4800	U
541-73-1	1,3-Dichlorobenzene	4800	U
106-46-7	1,4-Dichlorobenzene	4800	U
95-50-1	1,2-Dichlorobenzene	4100	J
96-12-8	1,2-Dibromo-3-Chloropropane	4800	U
120-82-1	1,2,4-Trichlorobenzene	4800	U
1330-20-7	Xylene (total)	480000	
79-20-9	Methyl acetate	4800	U
110-82-7	Cyclohexane	4800	U
108-87-2	Methylcyclohexane	21000	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT03-29

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-6

Sample wt/vol: 6.07(g/mL) G Lab File ID: QS2231-6D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 14 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	240	U
74-87-3	Chloromethane	240	U
75-01-4	Vinyl Chloride	240	U
74-83-9	Bromomethane	240	U
75-00-3	Chloroethane	240	U
75-69-4	Trichlorofluoromethane	240	U
75-35-4	1,1-Dichloroethene	240	U
75-15-0	Carbon disulfide	240	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	240	U
67-64-1	Acetone	600	U
75-09-2	Methylene Chloride	240	U
156-60-5	trans-1,2-Dichloroethene	240	U
1634-04-4	Methyl-tert-butyl ether	240	U
75-34-3	1,1-Dichloroethane	240	U
156-59-2	cis-1,2-Dichloroethene	240	U
78-93-3	2-butanone	600	U
67-66-3	Chloroform	240	U
71-55-6	1,1,1-Trichloroethane	240	U
56-23-5	Carbon Tetrachloride	240	U
71-43-2	Benzene	1600	
107-06-2	1,2-Dichloroethane	240	U
79-01-6	Trichloroethene	240	U
78-87-5	1,2-Dichloropropane	240	U
75-27-4	Bromodichloromethane	240	U
10061-01-5	cis-1,3-Dichloropropene	240	U
108-10-1	4-Methyl-2-pentanone	600	U
108-88-3	Toluene	7300	
10061-02-6	trans-1,3-Dichloropropene	240	U
79-00-5	1,1,2-Trichloroethane	240	U
127-18-4	Tetrachloroethene	240	U
591-78-6	2-hexanone	600	U
124-48-1	Dibromochloromethane	240	U
106-93-4	1,2-Dibromoethane	240	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT03-29

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-6

Sample wt/vol: 6.07(g/mL) G Lab File ID: QS2231-6D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 14 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	240	U
100-41-4	Ethylbenzene	3300	
100-42-5	Styrene	240	U
75-25-2	Bromoform	240	U
98-82-8	Isopropyl Benzene	130	J
79-34-5	1,1,2,2-Tetrachloroethane	240	U
541-73-1	1,3-Dichlorobenzene	240	U
106-46-7	1,4-Dichlorobenzene	240	U
95-50-1	1,2-Dichlorobenzene	140	J
96-12-8	1,2-Dibromo-3-Chloropropane	240	U
120-82-1	1,2,4-Trichlorobenzene	110	JB
1330-20-7	Xylene (total)	15000	
79-20-9	Methyl acetate	240	U
110-82-7	Cyclohexane	240	U
108-87-2	Methylcyclohexane	240	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT04-18

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-7

Sample wt/vol: 4.70(g/mL) G Lab File ID: QS2231-7D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 12 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 2(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	15000	U
74-87-3	Chloromethane	15000	U
75-01-4	Vinyl Chloride	15000	U
74-83-9	Bromomethane	15000	U
75-00-3	Chloroethane	15000	U
75-69-4	Trichlorofluoromethane	15000	U
75-35-4	1,1-Dichloroethene	15000	U
75-15-0	Carbon disulfide	15000	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	15000	U
67-64-1	Acetone	38000	U
75-09-2	Methylene Chloride	15000	U
156-60-5	trans-1,2-Dichloroethene	15000	U
1634-04-4	Methyl-tert-butyl ether	15000	U
75-34-3	1,1-Dichloroethane	15000	U
156-59-2	cis-1,2-Dichloroethene	15000	U
78-93-3	2-butanone	38000	U
67-66-3	Chloroform	15000	U
71-55-6	1,1,1-Trichloroethane	15000	U
56-23-5	Carbon Tetrachloride	15000	U
71-43-2	Benzene	15000	U
107-06-2	1,2-Dichloroethane	15000	U
79-01-6	Trichloroethene	15000	U
78-87-5	1,2-Dichloropropane	15000	U
75-27-4	Bromodichloromethane	15000	U
10061-01-5	cis-1,3-Dichloropropene	15000	U
108-10-1	4-Methyl-2-pentanone	38000	U
108-88-3	Toluene	19000	
10061-02-6	trans-1,3-Dichloropropene	15000	U
79-00-5	1,1,2-Trichloroethane	15000	U
127-18-4	Tetrachloroethene	15000	U
591-78-6	2-hexanone	38000	U
124-48-1	Dibromochloromethane	15000	U
106-93-4	1,2-Dibromoethane	15000	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT04-18

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-7

Sample wt/vol: 4.70(g/mL) G Lab File ID: QS2231-7D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 12 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 2(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	15000	U
100-41-4	Ethylbenzene	190000	
100-42-5	Styrene	15000	U
75-25-2	Bromoform	15000	U
98-82-8	Isopropyl Benzene	32000	
79-34-5	1,1,2,2-Tetrachloroethane	15000	U
541-73-1	1,3-Dichlorobenzene	15000	U
106-46-7	1,4-Dichlorobenzene	15000	U
95-50-1	1,2-Dichlorobenzene	11000	J
96-12-8	1,2-Dibromo-3-Chloropropane	15000	U
120-82-1	1,2,4-Trichlorobenzene	15000	U
1330-20-7	Xylene (total)	830000	
79-20-9	Methyl acetate	15000	U
110-82-7	Cyclohexane	15000	U
108-87-2	Methylcyclohexane	45000	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT04-22

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-8

Sample wt/vol: 5.70(g/mL) G Lab File ID: QS2231-8B61

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 16 Date Analyzed: 02/23/03

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	1	J
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-15-0	Carbon disulfide	0.6	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	5	U
67-64-1	Acetone	23	B
75-09-2	Methylene Chloride	0.5	J
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl-tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	36	
156-59-2	cis-1,2-Dichloroethene	4	J
78-93-3	2-butanone	13	JB
67-66-3	Chloroform	4	J
71-55-6	1,1,1-Trichloroethane	16	
56-23-5	Carbon Tetrachloride	5	U
71-43-2	Benzene	69	
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
10061-01-5	cis-1,3-Dichloropropene	5	U
108-10-1	4-Methyl-2-pentanone	20	
108-88-3	Toluene	2200	E
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	7	
127-18-4	Tetrachloroethene	5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT04-22

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-8

Sample wt/vol: 5.70(g/mL) G Lab File ID: QS2231-8B61

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 16 Date Analyzed: 02/23/03

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	1900	E
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropyl Benzene	61	
79-34-5	1,1,2,2-Tetrachloroethane	4	J
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	12	
95-50-1	1,2-Dichlorobenzene	89	B
96-12-8	1,2-Dibromo-3-Chloropropane	0.7	J
120-82-1	1,2,4-Trichlorobenzene	0.4	JB
1330-20-7	Xylene (total)	5600	E
79-20-9	Methyl acetate	4	J
110-82-7	Cyclohexane	10	
108-87-2	Methylcyclohexane	69	

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CLIENT SAMPLE NO.

SDPT04-22DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-8

Sample wt/vol: 5.54(g/mL) G Lab File ID: QS2231-8D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 16 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	270	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	270	U
74-83-9	Bromomethane	270	U
75-00-3	Chloroethane	270	U
75-69-4	Trichlorofluoromethane	270	U
75-35-4	1,1-Dichloroethene	270	U
75-15-0	Carbon disulfide	270	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	270	U
67-64-1	Acetone	670	U
75-09-2	Methylene Chloride	270	U
156-60-5	trans-1,2-Dichloroethene	270	U
1634-04-4	Methyl-tert-butyl ether	270	U
75-34-3	1,1-Dichloroethane	270	U
156-59-2	cis-1,2-Dichloroethene	270	U
78-93-3	2-butanone	670	U
67-66-3	Chloroform	270	U
71-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	270	U
71-43-2	Benzene	69	DJ
107-06-2	1,2-Dichloroethane	270	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-pentanone	670	U
108-88-3	Toluene	3400	D
10061-02-6	trans-1,3-Dichloropropene	270	U
79-00-5	1,1,2-Trichloroethane	270	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-hexanone	670	U
124-48-1	Dibromochloromethane	270	U
106-93-4	1,2-Dibromoethane	270	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT04-22DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-8

Sample wt/vol: 5.54(g/mL) G Lab File ID: QS2231-8D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 16 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	4000	D
100-42-5	Styrene	270	U
75-25-2	Bromoform	270	U
98-82-8	Isopropyl Benzene	250	DJ
79-34-5	1,1,2,2-Tetrachloroethane	270	U
541-73-1	1,3-Dichlorobenzene	270	U
106-46-7	1,4-Dichlorobenzene	270	U
95-50-1	1,2-Dichlorobenzene	270	D
96-12-8	1,2-Dibromo-3-Chloropropane	270	U
120-82-1	1,2,4-Trichlorobenzene	110	DJB
1330-20-7	Xylene (total)	18000	D
79-20-9	Methyl acetate	270	U
110-82-7	Cyclohexane	270	U
108-87-2	Methylcyclohexane	220	DJ

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VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT05-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-14

Sample wt/vol: 5.19(g/mL) G Lab File ID: QS2231-14D2A52

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 16 Date Analyzed: 03/04/03

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	290	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	290	U
74-83-9	Bromomethane	290	U
75-00-3	Chloroethane	290	U
75-69-4	Trichlorofluoromethane	290	U
75-35-4	1,1-Dichloroethene	290	U
75-15-0	Carbon disulfide	290	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	290	U
67-64-1	Acetone	720	U
75-09-2	Methylene Chloride	290	U
156-60-5	trans-1,2-Dichloroethene	290	U
1634-04-4	Methyl-tert-butyl ether	290	U
75-34-3	1,1-Dichloroethane	290	U
156-59-2	cis-1,2-Dichloroethene	290	U
78-93-3	2-butanone	720	U
67-66-3	Chloroform	290	U
71-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	290	U
71-43-2	Benzene	130	J
107-06-2	1,2-Dichloroethane	290	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-pentanone	720	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	290	U
79-00-5	1,1,2-Trichloroethane	290	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-hexanone	720	U
124-48-1	Dibromochloromethane	290	U
106-93-4	1,2-Dibromoethane	290	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT05-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-14

Sample wt/vol: 5.19(g/mL) G Lab File ID: QS2231-14D2A52

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 16 Date Analyzed: 03/04/03

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	98	J
100-41-4	Ethylbenzene	290	U
100-42-5	Styrene	290	U
75-25-2	Bromoform	290	U
98-82-8	Isopropyl Benzene	120	J
79-34-5	1,1,2,2-Tetrachloroethane	290	U
541-73-1	1,3-Dichlorobenzene	290	U
106-46-7	1,4-Dichlorobenzene	290	U
95-50-1	1,2-Dichlorobenzene	290	U
96-12-8	1,2-Dibromo-3-Chloropropane	290	U
120-82-1	1,2,4-Trichlorobenzene	290	U
1330-20-7	Xylene (total)	8400	
79-20-9	Methyl acetate	290	U
110-82-7	Cyclohexane	290	U
108-87-2	Methylcyclohexane	46	J

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT05-33

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-15

Sample wt/vol: 5.37(g/mL) G Lab File ID: QS2231-15D2A52

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 3 Date Analyzed: 03/04/03

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	240	U
74-87-3	Chloromethane	240	U
75-01-4	Vinyl Chloride	240	U
74-83-9	Bromomethane	240	U
75-00-3	Chloroethane	37	J
75-69-4	Trichlorofluoromethane	240	U
75-35-4	1,1-Dichloroethene	240	U
75-15-0	Carbon disulfide	240	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	240	U
67-64-1	Acetone	600	U
75-09-2	Methylene Chloride	240	U
156-60-5	trans-1,2-Dichloroethene	240	U
1634-04-4	Methyl-tert-butyl ether	240	U
75-34-3	1,1-Dichloroethane	240	U
156-59-2	cis-1,2-Dichloroethene	240	U
78-93-3	2-butanone	600	U
67-66-3	Chloroform	240	U
71-55-6	1,1,1-Trichloroethane	240	U
56-23-5	Carbon Tetrachloride	240	U
71-43-2	Benzene	970	
107-06-2	1,2-Dichloroethane	240	U
79-01-6	Trichloroethene	240	U
78-87-5	1,2-Dichloropropane	240	U
75-27-4	Bromodichloromethane	240	U
10061-01-5	cis-1,3-Dichloropropene	240	U
108-10-1	4-Methyl-2-pentanone	600	U
108-88-3	Toluene	240	U
10061-02-6	trans-1,3-Dichloropropene	240	U
79-00-5	1,1,2-Trichloroethane	240	U
127-18-4	Tetrachloroethene	240	U
591-78-6	2-hexanone	600	U
124-48-1	Dibromochloromethane	240	U
106-93-4	1,2-Dibromoethane	240	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT05-33

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-15

Sample wt/vol: 5.37(g/mL) G Lab File ID: QS2231-15D2A52

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 3 Date Analyzed: 03/04/03

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	56	J
100-41-4	Ethylbenzene	240	U
100-42-5	Styrene	240	U
75-25-2	Bromoform	240	U
98-82-8	Isopropyl Benzene	67	J
79-34-5	1,1,2,2-Tetrachloroethane	240	U
541-73-1	1,3-Dichlorobenzene	240	U
106-46-7	1,4-Dichlorobenzene	240	U
95-50-1	1,2-Dichlorobenzene	79	J
96-12-8	1,2-Dibromo-3-Chloropropane	240	U
120-82-1	1,2,4-Trichlorobenzene	240	U
1330-20-7	Xylene (total)	17000	
79-20-9	Methyl acetate	240	U
110-82-7	Cyclohexane	240	U
108-87-2	Methylcyclohexane	240	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT06-23

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-13

Sample wt/vol: 5.38(g/mL) G Lab File ID: QS2231-13D2A52

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 13 Date Analyzed: 03/04/03

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	270	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	270	U
74-83-9	Bromomethane	270	U
75-00-3	Chloroethane	270	U
75-69-4	Trichlorofluoromethane	270	U
75-35-4	1,1-Dichloroethene	270	U
75-15-0	Carbon disulfide	270	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	270	U
67-64-1	Acetone	670	U
75-09-2	Methylene Chloride	270	U
156-60-5	trans-1,2-Dichloroethene	270	U
1634-04-4	Methyl-tert-butyl ether	270	U
75-34-3	1,1-Dichloroethane	270	U
156-59-2	cis-1,2-Dichloroethene	270	U
78-93-3	2-butanone	670	U
67-66-3	Chloroform	270	U
71-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	270	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	270	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-pentanone	670	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	270	U
79-00-5	1,1,2-Trichloroethane	270	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-hexanone	670	U
124-48-1	Dibromochloromethane	270	U
106-93-4	1,2-Dibromoethane	270	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT06-23

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-13

Sample wt/vol: 5.38(g/mL) G Lab File ID: QS2231-13D2A52

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 13 Date Analyzed: 03/04/03

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	610	
100-42-5	Styrene	270	U
75-25-2	Bromoform	270	U
98-82-8	Isopropyl Benzene	59	J
79-34-5	1,1,2,2-Tetrachloroethane	270	U
541-73-1	1,3-Dichlorobenzene	270	U
106-46-7	1,4-Dichlorobenzene	270	U
95-50-1	1,2-Dichlorobenzene	270	U
96-12-8	1,2-Dibromo-3-Chloropropane	270	U
120-82-1	1,2,4-Trichlorobenzene	270	U
1330-20-7	Xylene (total)	2900	
79-20-9	Methyl acetate	270	U
110-82-7	Cyclohexane	270	U
108-87-2	Methylcyclohexane	270	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT07-23

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-9

Sample wt/vol: 5.90(g/mL) G Lab File ID: QS2231-9D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 13 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 50(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	490	U
74-87-3	Chloromethane	490	U
75-01-4	Vinyl Chloride	490	U
74-83-9	Bromomethane	490	U
75-00-3	Chloroethane	490	U
75-69-4	Trichlorofluoromethane	490	U
75-35-4	1,1-Dichloroethene	490	U
75-15-0	Carbon disulfide	490	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	490	U
67-64-1	Acetone	1200	U
75-09-2	Methylene Chloride	490	U
156-60-5	trans-1,2-Dichloroethene	490	U
1634-04-4	Methyl-tert-butyl ether	490	U
75-34-3	1,1-Dichloroethane	490	U
156-59-2	cis-1,2-Dichloroethene	490	U
78-93-3	2-butanone	1200	U
67-66-3	Chloroform	490	U
71-55-6	1,1,1-Trichloroethane	490	U
56-23-5	Carbon Tetrachloride	490	U
71-43-2	Benzene	140	J
107-06-2	1,2-Dichloroethane	490	U
79-01-6	Trichloroethene	490	U
78-87-5	1,2-Dichloropropane	490	U
75-27-4	Bromodichloromethane	490	U
10061-01-5	cis-1,3-Dichloropropene	490	U
108-10-1	4-Methyl-2-pentanone	1200	U
108-88-3	Toluene	490	U
10061-02-6	trans-1,3-Dichloropropene	490	U
79-00-5	1,1,2-Trichloroethane	490	U
127-18-4	Tetrachloroethene	490	U
591-78-6	2-hexanone	1200	U
124-48-1	Dibromochloromethane	490	U
106-93-4	1,2-Dibromoethane	490	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT07-23

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-9

Sample wt/vol: 5.90(g/mL) G Lab File ID: QS2231-9D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 13 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 50(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	90	J
100-41-4	Ethylbenzene	8200	
100-42-5	Styrene	490	U
75-25-2	Bromoform	490	U
98-82-8	Isopropyl Benzene	610	
79-34-5	1,1,2,2-Tetrachloroethane	490	U
541-73-1	1,3-Dichlorobenzene	490	U
106-46-7	1,4-Dichlorobenzene	490	U
95-50-1	1,2-Dichlorobenzene	320	J
96-12-8	1,2-Dibromo-3-Chloropropane	490	U
120-82-1	1,2,4-Trichlorobenzene	190	JB
1330-20-7	Xylene (total)	34000	
79-20-9	Methyl acetate	490	U
110-82-7	Cyclohexane	490	U
108-87-2	Methylcyclohexane	830	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT08-19

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-10

Sample wt/vol: 5.11(g/mL) G Lab File ID: QS2231-10D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 8 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	270	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	270	U
74-83-9	Bromomethane	270	U
75-00-3	Chloroethane	270	U
75-69-4	Trichlorofluoromethane	270	U
75-35-4	1,1-Dichloroethene	270	U
75-15-0	Carbon disulfide	270	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	270	U
67-64-1	Acetone	660	U
75-09-2	Methylene Chloride	270	U
156-60-5	trans-1,2-Dichloroethene	270	U
1634-04-4	Methyl-tert-butyl ether	270	U
75-34-3	1,1-Dichloroethane	270	U
156-59-2	cis-1,2-Dichloroethene	270	U
78-93-3	2-butanone	660	U
67-66-3	Chloroform	270	U
71-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	270	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	270	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-pentanone	660	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	270	U
79-00-5	1,1,2-Trichloroethane	270	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-hexanone	660	U
124-48-1	Dibromochloromethane	270	U
106-93-4	1,2-Dibromoethane	270	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT08-19

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-10

Sample wt/vol: 5.11(g/mL) G Lab File ID: QS2231-10D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 8 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	820	
100-42-5	Styrene	270	U
75-25-2	Bromoform	270	U
98-82-8	Isopropyl Benzene	420	
79-34-5	1,1,2,2-Tetrachloroethane	270	U
541-73-1	1,3-Dichlorobenzene	270	U
106-46-7	1,4-Dichlorobenzene	270	U
95-50-1	1,2-Dichlorobenzene	130	J
96-12-8	1,2-Dibromo-3-Chloropropane	270	U
120-82-1	1,2,4-Trichlorobenzene	270	U
1330-20-7	Xylene (total)	3600	
79-20-9	Methyl acetate	270	U
110-82-7	Cyclohexane	270	U
108-87-2	Methylcyclohexane	470	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT09-22

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-12

Sample wt/vol: 5.85(g/mL) G Lab File ID: QS2231-12D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 14 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	250	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	250	U
74-83-9	Bromomethane	250	U
75-00-3	Chloroethane	250	U
75-69-4	Trichlorofluoromethane	250	U
75-35-4	1,1-Dichloroethene	250	U
75-15-0	Carbon disulfide	250	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	250	U
67-64-1	Acetone	620	U
75-09-2	Methylene Chloride	250	U
156-60-5	trans-1,2-Dichloroethene	250	U
1634-04-4	Methyl-tert-butyl ether	250	U
75-34-3	1,1-Dichloroethane	250	U
156-59-2	cis-1,2-Dichloroethene	250	U
78-93-3	2-butanone	620	U
67-66-3	Chloroform	250	U
71-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	250	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	250	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-pentanone	620	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	250	U
79-00-5	1,1,2-Trichloroethane	250	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-hexanone	620	U
124-48-1	Dibromochloromethane	250	U
106-93-4	1,2-Dibromoethane	250	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT09-22

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-12

Sample wt/vol: 5.85(g/mL) G Lab File ID: QS2231-12D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 14 Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	1200	
100-42-5	Styrene	250	U
75-25-2	Bromoform	250	U
98-82-8	Isopropyl Benzene	190	J
79-34-5	1,1,2,2-Tetrachloroethane	250	U
541-73-1	1,3-Dichlorobenzene	250	U
106-46-7	1,4-Dichlorobenzene	250	U
95-50-1	1,2-Dichlorobenzene	160	J
96-12-8	1,2-Dibromo-3-Chloropropane	250	U
120-82-1	1,2,4-Trichlorobenzene	250	U
1330-20-7	Xylene (total)	3500	
79-20-9	Methyl acetate	250	U
110-82-7	Cyclohexane	250	U
108-87-2	Methylcyclohexane	63	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT-DUP

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-11

Sample wt/vol: 4.78(g/mL) G Lab File ID: QS2231-11D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. _____ Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	260	U
74-87-3	Chloromethane	260	U
75-01-4	Vinyl Chloride	260	U
74-83-9	Bromomethane	260	U
75-00-3	Chloroethane	260	U
75-69-4	Trichlorofluoromethane	260	U
75-35-4	1,1-Dichloroethene	260	U
75-15-0	Carbon disulfide	260	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	260	U
67-64-1	Acetone	650	U
75-09-2	Methylene Chloride	260	U
156-60-5	trans-1,2-Dichloroethene	260	U
1634-04-4	Methyl-tert-butyl ether	260	U
75-34-3	1,1-Dichloroethane	260	U
156-59-2	cis-1,2-Dichloroethene	260	U
78-93-3	2-butanone	650	U
67-66-3	Chloroform	260	U
71-55-6	1,1,1-Trichloroethane	260	U
56-23-5	Carbon Tetrachloride	260	U
71-43-2	Benzene	260	U
107-06-2	1,2-Dichloroethane	260	U
79-01-6	Trichloroethene	260	U
78-87-5	1,2-Dichloropropane	260	U
75-27-4	Bromodichloromethane	260	U
10061-01-5	cis-1,3-Dichloropropene	260	U
108-10-1	4-Methyl-2-pentanone	650	U
108-88-3	Toluene	260	U
10061-02-6	trans-1,3-Dichloropropene	260	U
79-00-5	1,1,2-Trichloroethane	260	U
127-18-4	Tetrachloroethene	260	U
591-78-6	2-hexanone	650	U
124-48-1	Dibromochloromethane	260	U
106-93-4	1,2-Dibromoethane	260	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT-DUP

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-11

Sample wt/vol: 4.78(g/mL) G Lab File ID: QS2231-11D2A59

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. _____ Date Analyzed: 02/28/03

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(ul)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	260	U
100-41-4	Ethylbenzene	240	J
100-42-5	Styrene	260	U
75-25-2	Bromoform	260	U
98-82-8	Isopropyl Benzene	190	J
79-34-5	1,1,2,2-Tetrachloroethane	260	U
541-73-1	1,3-Dichlorobenzene	260	U
106-46-7	1,4-Dichlorobenzene	260	U
95-50-1	1,2-Dichlorobenzene	260	U
96-12-8	1,2-Dibromo-3-Chloropropane	260	U
120-82-1	1,2,4-Trichlorobenzene	110	JB
1330-20-7	Xylene (total)	1200	
79-20-9	Methyl acetate	260	J
110-82-7	Cyclohexane	260	U
108-87-2	Methylcyclohexane	69	J

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT01-27

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-1

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 279RQS2231-1

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 20 Date Analyzed: 02/25/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	1.6	U

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT02-22

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-2

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 268RQS2231-2

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 11 Date Analyzed: 02/25/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	0.56	U

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT02-27

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-3

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 269RQS2231-3

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 19 Date Analyzed: 02/25/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	0.76	

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT03-19

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-5

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 213QQS2231-5

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 6 Date Analyzed: 02/26/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	220	B

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT03-22

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-4

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 212QQS2231-4

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 11 Date Analyzed: 02/26/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 50(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	920	B

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT03-29

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-6

Sample wt/vol: 3.0 (g/mL) G Lab File ID: 274RQS2231-6

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 14 Date Analyzed: 02/25/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	8.9	

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT04-18

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-7

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 214QQS2231-7

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 12 Date Analyzed: 02/26/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	240	B

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT04-22

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-8

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 270RQS2231-8

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 16 Date Analyzed: 02/25/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	11	

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT05-24

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-14

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 277RQS2231-14

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 16 Date Analyzed: 02/25/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	2.4	

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT05-33

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-15

Sample wt/vol: 3.0 (g/mL) G Lab File ID: 278RQS2231-15

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 3 Date Analyzed: 02/25/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	3.5	

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT06-23

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-13

Sample wt/vol: 3.0 (g/mL) G Lab File ID: 276RQS2231-13

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 13 Date Analyzed: 02/25/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	2.7	

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT07-23

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-9

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 273RQS2231-9

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 13 Date Analyzed: 02/25/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	13	

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT08-19

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-10

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 215QQS2231-10

Level: (low/med) MED Date Received: 02/21/03

% Moisture: not dec. 8 Date Analyzed: 02/26/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:(5000)(ul) Soil Aliquot Volume: 100(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	74	B

FORM 1
GC VOA ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SDPT09-22

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-12

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 271RQS2231-12

Level: (low/med) LOW Date Received: 02/21/03

% Moisture: not dec. 14 Date Analyzed: 02/25/03

GC Column: RTX-VOLATILES ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-7	Gasoline	2.1	

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT01-27

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-1

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 20 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	6.2	J

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT02-22

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-2

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 11 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	8.1	J

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT02-27

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-3

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 19 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	21	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT03-19

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-5

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 6 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	410	E

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT03-19DL

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-5

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 6 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	-------Diesel	450	D

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT03-22

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-4

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 11 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	-------Diesel	2900	E

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT03-22DL

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-4

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 11 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	-------Diesel	2100	D

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT03-29

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-6

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 14 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	21	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT04-18

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-7

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 12 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	1300	E

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT04-18DL

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-7

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 12 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	1500	D

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT04-22

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-8

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 16 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	33	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT05-24

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-14

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 16 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	22	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT05-33

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-15

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 3 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	-------Diesel	46	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT06-23

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-13

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 13 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	33	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT07-23

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-9

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 13 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	67	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT07-23MS

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: WG22892-3

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 13 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	240	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT07-23MSD

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: WG22892-4

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 13 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	95	

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT08-19

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-10

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 8 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	-------Diesel	370	E

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT08-19DL

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-10

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 8 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	360	D

FORM I PEST

1D
GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SDPT09-22

Lab Name: COMPUCHEM Contract: 8015B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: QS2231

Matrix: (soil/water) SOIL Lab Sample ID: QS2231-12

Sample wt/vol: 20.0 (g/mL) G Lab File ID: _____

% Moisture: 14 decanted: (Y/N) N Date Received: 02/21/03

Extraction: (SepF/Cont/Sonc) OTHER Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
9999-99-5	Diesel	50	

FORM I PEST

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT01-27

Lab Name: CompuChem Contract: _____

Lab Code: LIBRTY Case No.: _____ NRAS No.: _____

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-1

Date Received: 2/21/03 % Solids: 80.41

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	1800.0				2/25/03

Comments: _____

2

SW-846

1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT02-22

Lab Name: CompuChem Contract: _____

Lab Code: LIBRTY Case No.: _____ NRAS No.: _____

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-2

Date Received: 2/21/03 % Solids: 88.93

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	8929.0				2/25/03

Comments:

3

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT02-27

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-3

Date Received: 2/21/03 % Solids: 81.03

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	2557.0				2/25/03

Comments:

4

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT03-19

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-5

Date Received: 2/21/03 % Solids: 94.13

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	3710.0				2/25/03

Comments:

5

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT03-22

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-4

Date Received: 2/21/03 % Solids: 88.70

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	5219.0				2/25/03

Comments:

6

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT03-29

Lab Name: CompuChem Contract: _____

Lab Code: LIBRTY Case No.: _____ NRAS No.: _____

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-6

Date Received: 2/21/03 % Solids: 85.57

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	2275.0				2/25/03

Comments:

7

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT04-18

Lab Name: CompuChem Contract: _____

Lab Code: LIBRTY Case No.: _____ NRAS No.: _____

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-7

Date Received: 2/21/03 % Solids: 88.21

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	4742.0				2/25/03

Comments:

8

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT04-22

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-8

Date Received: 2/21/03 % Solids: 84.05

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	2739.0				2/25/03

Comments:

9

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT05-24

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-14

Date Received: 2/21/03 % Solids: 84.31

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	3851.0				2/25/03

Comments:

10

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT05-33

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-15

Date Received: 2/21/03 % Solids: 96.98

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	2104.0				2/25/03

Comments:

11

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT06-23

Lab Name: CompuChem Contract: _____

Lab Code: LIBRTY Case No.: _____ NRAS No.: _____

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-13

Date Received: 2/21/03 % Solids: 87.36

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	15400.0				2/25/03

Comments:

12

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT07-23

Lab Name: CompuChem Contract: _____

Lab Code: LIBRTY Case No.: _____ NRAS No.: _____

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-9

Date Received: 2/21/03 % Solids: 86.62

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	4490.0				2/25/03

Comments:

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT08-19

Lab Name: CompuChem Contract: _____

Lab Code: LIBRTY Case No.: _____ NRAS No.: _____

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-10

Date Received: 2/21/03 % Solids: 91.91

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	6657.0				2/25/03

Comments:

14

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1-CC

CLASSICAL CHEMISTRY ANALYSES DATA SHEET

EPA SAMPLE NO.

SDPT09-22

Lab Name: CompuChem Contract:

Lab Code: LIBRTY Case No.: NRAS No.:

SDG No.: QS2231

Matrix (soil/water): SOIL Lab Sample ID: QS2231-12

Date Received: 2/21/03 % Solids: 85.65

Concentration Units (mg/L or mg/kg dry weight): mg/Kg

PARAMETER	CONCENTRATION	C	Q	M	DATE ANALYZED
TOC	4140.0				2/25/03

Comments:

15